



## Relationships between willingness to get vaccinated against COVID-19, socioeconomic indicators, choices in health behavior, and health information seeking among Estonians aged $\geq 50$

Marianne Paimre<sup>a,b\*</sup> and Kairi Osula<sup>b</sup>

<sup>a</sup> Lifelong-Learning Centre, Tallinn Health Care College, Kännu 67, 13418 Tallinn, Estonia

<sup>b</sup> School of Digital Technologies, Tallinn University, Narva mnt 27, 10120 Tallinn, Estonia

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**Abstract.** Vaccination is undoubtedly one of the most effective ways to protect oneself against Coronavirus. Although vaccines for COVID-19 have been proven to prevent severe illness, hospitalizations, and even death, many people have refused to receive them. To increase vaccination rates and thus minimize other restrictive measures, it is paramount to address the factors related to refusal. The aim of this study was to analyze relationships between vaccination willingness, socioeconomic indicators, self-reported health status, choices in health behavior, and health information (HI) seeking among Estonians aged 50 and above. As today's information and communication technologies (ICT) are widely used in receiving health information, the authors were also interested in older adults' acceptance of ICT for health purposes. A cross-sectional survey was conducted one month after the first lockdown ended in the summer of 2020. According to the results, 268 (53.5%) respondents agreed to vaccinate, 153 (30.5%) expressed skepticism, and 80 (16%) were against it. Being male and having a higher education level significantly affected vaccination readiness. The more often the respondent felt the need for HI and the more recently they had searched the internet for HI, the more they agreed to be vaccinated and vice versa ( $\rho = 0.14$ ,  $p < 0.05$ ). A weak positive correlation ( $\rho = 0.25$ ,  $p < 0.01$ ) emerged between vaccination readiness and the need for a digital health application: the more such an application was needed, the more people agreed to be vaccinated. Those interested in vaccination tended to use a wider range of HI sources than the uninterested and hesitant respondents. The difference was statistically significant,  $p < 0.05$ ,  $F(2498) = 3.52$ ,  $\eta^2 = 0.014$ . The willingness to get vaccinated was not increased by better health behavior choices (e.g., eating healthier and exercising more). There was also no connection between health status and vaccination readiness. The differences regarding people aged 50 years and older should be considered when planning health campaigns and vaccinations.

**Keywords:** COVID-19, vaccination willingness, people aged  $\geq 50$ , ICT, internet, health information seeking, health behavior, Estonia.

### INTRODUCTION

COVID-19 threatens everyone and can especially devastate older adults (WHO; Soiza et al. 2021; Wong et al. 2021). Considering the severity of the situation, governments, organizations, and medical experts have created extensive measures to boost protective health behaviors among large populations regarding COVID-19 (Chu 2021).

Vaccines have proven to provide a strong defense against severe illness, hospitalization, and death (WHO 2023; CDC 2022; Rashedi et al. 2022; Mileto et al. 2021; Mostaghimi et al. 2021). There is also evidence that the transmission risk is reduced in vaccinated people (Richter et al. 2022; Tao et al. 2021; Vigezzi and Odone 2022; Vitiello et al. 2021). Although older adults have been the most vulnerable to COVID-19, many of them have neglected to get vaccinated against the virus (ECDC 2022; Siu et al. 2022; McSpadden 2021).

\* Corresponding author, [marianne.paimre@ttk.ee](mailto:marianne.paimre@ttk.ee)

Here it is important to specify how an older adult is defined. Although National Institute on Aging's guide (NIH 2022) defines older adults as those 65 and older and the United Nations (UNHCR) people over 60, many studies of older adults use the 50-year-old cutoff age (e.g., AARP 2022; TILDA 2020; Hall et al. 2015; Czaja et al. 2009). It enables to provide a point of comparison with slightly younger individuals and capture older adults in their full diversity. This was also the case in this study conducted on a sample of Estonian people aged 50 and above.

To increase vaccination rates and thus minimize other restrictive measures, it is necessary to address the factors related to refusal (Richter et al. 2022; Fedele et al. 2021). Research indicates that sex, age, race, education level, and income status are determining factors of having a low or high COVID-19 vaccine uptake (Richter et al. 2022; Yasmin et al. 2021). Men, older persons, educated and wealthier people tend to be more willing to get vaccinated (Zintel et al. 2022; Yasmin et al. 2021). According to Richter et al. (2022), those who exhibit a low risk assessment toward COVID-19 and less health protection behaviors are significantly more likely to refuse vaccination or be ambivalent. They also indicate that poor subjective health leads to a higher risk of refusing vaccination (Ibid.). Similarly, Mustafa et al. (2022) established a direct effect of health status on attitudes toward COVID-19 vaccination, revealing possible fear and hesitancy toward vaccination among those with worse health conditions.

Among other factors, HI seeking practices (e.g., what kind of information is preferred and which sources it originates from) could play a role in health protective behavior (Koh 2022; Allington et al. 2021; Dadaczynski et al. 2021; Roberts et al. 2021; Skarpa and Garoufallou 2021). For example, it has been established that many older people do not trust vaccines because they are poorly informed (Helpage 2021; Jasua et al. 2021).

Zheng et al. (2022) examined how online vaccine information seeking relates to vaccination intentions in the United States and China. Analysis of the pooled sample showed a positive correlation between online vaccine information seeking and vaccination intention. The study also suggested a negative indirect effect via perceived information overload, vaccine risk perception, and negative affective response. Multigroup analysis shed some light on the differences between the United States and China.

Chu et al (2021) suggest that during a crisis, it is vital for people to gather information from a variety of different sources, which contributes to people getting a more versatile/realistic perception of the situation and engagement of health behaviors. Their results testified to the benefits of having more information sources available in a public health crisis. According to their results, older persons received information from more diverse sources and more frequently from traditional (e.g., newspapers and TV) and

interpersonal sources (e.g., information shared by friends and families) compared to younger adults, and they also displayed more protective health behaviors due to obtaining information from a greater variety of sources (Ibid.). It has been also asserted that specific information sources (e.g., social media platforms, alternative media sites) might contribute conspiracy beliefs regarding the pandemic and thus deter their consumers from engaging in protective health behaviors (Castellano-Tejedor et al. 2022; Al-Hasan et al. 2021; Bendau et al. 2021; Cuello-Garcia et al. 2020). Inversely, use of broadcast and other more reliable media has shown a positive association with protective health behaviors (Allington et al. 2021).

Today, information is obtained primarily through computers and smart devices. Research has shown that although older people's adoption rate of ICT is growing faster than ever, many of them are not currently well positioned to take full advantage of social technologies (Moore and Hancock 2020; Schreurs et al. 2017). It has been suspected that deficiencies in digital literacy among older adults may contribute to a lack of knowledge or misinformation about COVID-19 that may entail disastrous consequences, such as lack of compliance with recommended prevention practices (Eronen et al. 2021; Carlos et al. 2022; Jasua et al. 2021). Thus, it is interesting to focus on people 50 and above living in Estonia, a country widely held to be an advanced digital state (E-Estonia 2021).

According to earlier studies, several factors, such as age, level of education, previous experience in searching for HI, computer self-efficacy, familiarity with internet searching, and outcome expectations regarding internet-based HI act as major determinants of an individual's acceptance of ICT for health purposes and online HI seeking (Choi 2019; Pálsdóttir 2008). Older adults in general are less likely to seek information related to their health conditions, share HI with others, or think about physical exercises needed to manage their health conditions (Menéndez Alvarez-Dardet et al. 2020). Nevertheless, many older adults are equally adept at using new technology (Oh et al. 2021; Menéndez Alvarez-Dardet et al. 2020).

It is important to focus on older individuals since, as everywhere else, the COVID-19 pandemic has hit the older population in Estonia the hardest. The average age of a hospitalized patient has been 67 for women and 63 for men. Of all the hospitalized patients, 83 percent have been aged 60 and older. The number of patients per 100 000 population has been 25 for those under 60 and 327 for those aged 60 and over (Health Board 2022). At the same time, according to national statistics, older adults have the highest vaccination rate in Estonia (Ibid.). This could partly be because seniors were the first group to undergo vaccination, yet it has remained so since the vac-

cines became available to all adults. Women under the age of 60 have been more willing to vaccinate than their male counterparts, while, conversely, the vaccination rate is higher among males aged 70 and older (Health Board 2022).

Because Estonia is characterized by the rapid aging of the population, which in the future will inevitably lead to an increase in pension costs expenditure together with the heavy burden on the healthcare and social support system, older people's health needs, their health-information-seeking behavior, and use of ICT for health purposes deserve particular attention (Siimer and Sinisaar 2019). By the same token, the aging profile of Estonian GPs and the current shortage haunting us already today contribute to the fact that remote communication with doctors, ability to find HI, and cope with minor health issues independently will assume an even greater importance.

This study aimed to analyze relationships between vaccination willingness, socioeconomic indicators, self-reported health status, choices in health behavior, and HI seeking among Estonians aged  $\geq 50$  during the COVID-19 crisis. As today's ICT is widely used in receiving HI and has been used in communication to confront the pandemic (Jo et al. 2020), the authors were also interested in older adults' acceptance of ICT for health purposes.

The authors hypothesized from previous literature that:

1. Better health scores, being male, having higher education levels, and higher income are conducive to vaccination readiness.
2. Those who exhibit better health behaviors (are physically active, eat consciously, do not consume drugs) tend to accept vaccination.
3. People who need and seek more often HI and who retrieve information from various and more reliable sources are more willing to get vaccinated.
4. Those with access to computers and smart devices, rate their computer skills higher, and express interest in health-related digital applications are willing to vaccinate.

## SAMPLE AND METHOD

### Study Design

A cross-sectional survey was conducted from July 20 to August 3, 2020, among older adults living in Estonia. 501 respondents were interviewed using a questionnaire. Half of the participants were questioned online (respondents completed an online questionnaire) and another half over the phone. The questions were identical for both survey methods. The participants were fully informed about the purpose of the study, and they were given the option to withdraw from the study at any time. The confidentiality and anonymity of participants was fully guaranteed.

### Participants

Individuals aged  $\geq 50$  were eligible to participate in the study. Market research company Norstat drew a sample from a research panel consisting of more than 20 000 people, allowing them to carry out online, telephone, and face-to-face interviews. All the participants in the panel were randomly selected from other surveys (mainly phone interviews), thus ensuring that they represented a variety of sociodemographic groups. Subject to quotas, a representative sample was comprised, and in doing so, it was carefully monitored that the number of responses stipulated by the quota was obtained from each subset (e.g., specific age group).

### Measures

A questionnaire was designed to collect information about vaccination readiness, health behavior, HI seeking, acceptance of ICT, health status, and socioeconomic indicators and monthly income. For each question (15), it was possible to choose between different answer options. The 11 most relevant questions regarding the goal have been included in this article. For some, the respondent could choose between yes/no (e.g., Do you have access to a computer or a smart device?). For others (e.g., Which sources of information do you prefer?), there was a list from which the respondent could choose multiple answers. For assessment of their digital competence and health, a Likert-type scale was used, with a choice of five options (very good / good / fair / poor / I do not wish to answer this question). For frequencies (e.g., How often do you need information on illnesses or health in general), the respondent could choose between four options (once a week or more often / a few times a month / a few times per 3 months / a few times a year or less often). The questions included:

- a) *Health behavior and self-reported health*: 1) Would you like to get vaccinated if the opportunity arose? 2) Do you engage in any of the following activities? Take regular walks or ride a bike; swim, work out in a gym, exercise, or do other sports at home; are otherwise physically active (e.g., gardening); watch your diet, try to eat healthy (e.g., plenty of fruits and vegetables); eat high-fat foods, ready or precooked meals or sweets; consume alcohol often; smoke; sit a lot. 3) How is your health in general? In your opinion it is....
- b) *HI seeking*: 4) When did you last conduct an online search on health, illnesses, or disease prevention? 5) Did you come across HI by accident (e.g., while reading another article you also spotted health news) or by conducting a relevant search (e.g., you submitted the specific query)? 6) Most of the information on illnesses and health you find/obtain from (you may

select multiple answers): TV and radio; print media (newspapers, magazines) and books; internet; GP, outpatient clinics, hospitals, pharmacies; close friends and family members; library; social day care centers for seniors; other. 7) The main **online** sources you obtain HI from include: designated e-health portals and websites on illnesses (e.g., *kliinik.ee*, *inimene.ee*, web-based clinic); random top search results to a query (e.g., when googling, it seems that they are clicked on a lot); digital publications of mainstream media (e.g., national dailies *Postimees*, *Eesti Päevaleht*) or online news portals (e.g., Estonian Public Broadcasting, *Delfi*) and their health sections (e.g., *Postimees Tervis*), health magazines (e.g., *Tervis+*); social media platforms (Facebook, Twitter, YouTube); blogs; Wikipedia; alternative medicine websites (e.g., *alternatiivravi.ee*, *tervisekliinik.ee*); internet forums and discussion groups, where people share their experiences with medical professionals and illnesses; alternative media (e.g., Telegram); official websites of international organizations, government offices and public agencies, e.g., WHO, Estonian National Institute for Health Development, Estonian Health Board, etc; research databases and open access sites disseminating research outputs; films, videos; other.

c) *ICT acceptance (for health purposes)*: 8) Do you have access to a personal computer or similar digital device that can be used for conducting online searches? 9) During the COVID-19 lockdown, how important was it for you to have access to a doctor from a distance (e.g., exchanging e-mails, texting, video consultations)? 10) Would you have any use for digital health solutions or services? For instance, the kind that allows you to consult with medical personnel, monitor your blood pressure or sleep patterns, check your heart rate, remind you to take a pill, or keep you company? 11) How do you rate your computer skills?

*Socioeconomic indicators* included gender, age, nationality, education level, employment, and monthly income.

## Data Analyses

Data analysis was performed with SPSS Statistics version 27.0. Frequency tables and cross-tabulation were used to review and compare the collected data. Spearman's correlation was calculated to examine the relationships between the data measured on the ranking scale. Analysis of variance/ANOVA was used to compare group means.

The significance level was not predetermined, different ones were used instead, e.g., 0.05 and 0.01. To aggregate the data, the frequencies of different responses by objects were added together. Thus, the aggregate characteristics were arrived at by accumulating, e.g., how

many different channels the respondent had used to obtain the information, or how many different types of information he or she would have liked to retrieve.

## RESULTS

### Participant characteristics

The number of individuals responding to the survey questionnaire was 501. Men comprised 40.7% ( $n = 204$ ) and women 59.3% (297). The oldest participant was 94, the youngest ones 50 years old. The median age was 65. The representative group of 55 to 64 comprised 154 people, 130 respondents made up the 65 to 74 age group, and 51 belonged to the 75+ group. 71.7% of the respondents were Estonians and almost half of them (52.9%) were pensioners. 54.5% of the respondents earned 351–750 euros per family member a month.

### Vaccination readiness

More than half (53.5%,  $n = 268$ ) of the people who participated in the study agreed to vaccinate against COVID-19 (they chose the answer option “definitely”). There were less than a third of doubters (30.5%,  $n = 153$ ) and only 16% ( $n = 80$ ) of those who were not willing to vaccinate if the opportunity arose. 60.8% of men were ready to get vaccinated and 14.2% were not. The corresponding indicators for women were 48.5% and 17.2%. There was also no connection between health status and vaccination readiness ( $\rho = -0.01$ ).

Surprisingly, the youngest age group (ages 50–54) was the most willing to get vaccinated (60.2%). Those least eager belonged to the 55–64 age group (48.8%), and in the 65+ group, the average was 54%. Those not willing to vaccinate were more likely aged 75+ (21.4%), while the slightly younger 65–74-year-olds were less likely to say “no” (11.9%). On average, 15.6% of the people under 64 would refuse the vaccine.

The higher the level of education, the more people were willing to vaccinate. 64.3% of the respondents with higher education, 47% with secondary or secondary specialized education, and 30.8% with primary schooling were willing to vaccinate. The percentages of those unwilling were divided as follows: respondents with higher education (6.2%), respondents with secondary or secondary specialized education (on average 22%), and respondents with primary education (42.3%).

There was a weak correlation between willingness to vaccinate and income ( $\rho = -0.19$ ,  $p < 0.01$ ). The higher the respondent's income, the more (s)he was willing to vaccinate and vice versa.

### Health behavior

It was ascertained that health behaviors did not exert influence on vaccine readiness. When the authors divided health behaviors into two groups: positive (i.e., taking regular walks or riding a bike, swimming, working out in a gym, exercising or doing other sports at home, being otherwise physically active, watching your diet, trying to eat healthy) and negative (i.e., eating high-fat foods, ready or precooked meals or sweets, consuming alcohol often, smoking, sitting a lot), and subsequently compared the averages of positive and negative actions of respondents exhibiting different vaccination readiness, then no difference between such vaccine groups emerged ( $F(2498) = 1.93, p > 0.05$  and  $F(2498) = 0.35, p > 0.05$ , respectively).

### The relationship between information seeking and vaccination readiness

Among those who had no need for HI (or claimed to feel the need only a few times a year), there were fewer vaccine supporters (47.4%) and more refusers (22.8%). The more recently the respondent searched for information about health on the internet, the more (s)he was willing to vaccinate and vice versa.

Among internet users, a very weak positive relationship ( $\rho = 0.14, p < 0.05$ ) emerged in terms of information seeking frequency and willingness to vaccinate. The more recently the respondent searched for information about health on the internet, the more (s)he was willing to vaccinate.

Regarding the question “During the COVID-19 lockdown, did you wish for more detailed information on any of the following aspects?” it was revealed that those who wanted to learn about the symptoms associated with the virus were the least favorably disposed towards vaccination (53%). The most willing, however, were those who wanted to know where they could get medicines and food (68%). The percentages of other answers ranged between 59–63%, but the differences were minimal.

Vaccination readiness did not significantly correlate with the sources from which the respondents got their information. For all the different sources, about 55% of the users of that source were willing to vaccinate, 30% hesitated, and 15% were against it (which more or less echoed the overall distribution of willingness to vaccinate). There were slightly more supporters among those who received information from a social center (66.7%) and library (62.5%). There were fewer pro-vaccine people among those who received information from TV and radio (50.4%) or acquaintances (51.1%). Also, no significant differences emerged in terms of vaccination readiness and online information sources other than the fact that people

who were willing to vaccinate claimed to consume more professional journalism.

However, the difference emerged in how many different sources recipients claimed to receive HI from. Those who were willing to vaccinate and those who hesitated received information from quantitatively more sources than those who were not willing to vaccinate. The difference was statistically significant ( $p < 0.05, F(2498) = 3.52, \eta^2 = 0.014$ ).

### Willingness to use smart devices and communicate with the doctor remotely

Those with access to a computer were more willing to vaccinate (56.6%), and there were also fewer opponents among them (12.1%) than those who did not have access to a smart device. There was a weak positive relationship between willingness to vaccinate and the need for a health-related digital application ( $\rho = 0.25, p < 0.01$ ). The more the respondent needs a health-related digital application, the more he is willing to vaccinate and vice versa.

However, there was no relationship established between communicating with a doctor at a distance and being in favor/against the vaccine rendering ( $\rho = 0.09, p > 0.05$ ).

There was a somewhat tenuous link detected between self-reported computer skills and vaccination readiness. The more advanced the skills were, the more willing a person was to vaccinate, and conversely, the poorer the computer skills, the more unwilling they were to vaccinate.

## DISCUSSION

The first hypothesis was partially confirmed. Higher education, better income, and being male turned out to be predictors of vaccine readiness. However, an individual's health status did not affect their response regarding vaccination readiness. This is somewhat different from the results of previous studies (e.g., Richter et al. 2022; Mustafa et al. 2022).

The second hypothesis that those who exhibit better health behaviors (are physically active, eat consciously, do not consume drugs) tend to also accept vaccination was not supported by the findings. Why more reasonable choices in health behavior do not support vaccination readiness should be investigated more closely in subsequent studies.

The third hypothesis – people who need and/or seek HI more often and/or use diverse and reliable information sources were more willing to get vaccinated – was partly true. There was a weak positive relationship regarding

information need and vaccination readiness. The more frequently a person felt the information need, the more willing (s)he was to vaccinate ( $\rho = 0.11$ ,  $p < 0.05$ ). It also emerged that the more recently the recipient had searched for information about health on the internet, the more (s)he was willing to get vaccinated ( $\rho = 0.14$ ,  $p < 0.01$ ). Also, a weak negative correlation was discovered regarding the type of information sought. The more different topics were searched, the more people were willing to vaccinate ( $\rho = -0.17$ ,  $p < 0.01$ ). It seems that people who care about their health feel the need for HI more often and also search for information more often and about different phenomena. They are thus better informed even in crisis conditions and can see vaccination as an opportunity to maintain and protect their health.

The sources from which the respondents got their information did not significantly correlate with vaccination readiness. However, vaccination supporters and skeptics reported using more varied sources of information than deniers. Unlike some earlier works (e.g., Castellano-Tejedor et al. 2022; Allington et al. 2021), the present study does not highlight the importance of less reliable sources (e.g., social media) in vaccine refusal.

The fourth hypothesis that people with access to computers and smart devices who rated their computer skills higher and expressed interest in health-related digital applications were willing to vaccinate, was found to be mostly true. A relationship emerged as regards access to computers and smart devices. Those who reported access to ICT were more willing to vaccinate and expressed anti-vaccination views less than those who did not have access to technology.

Interest in digital health applications and/or e-services was weakly/slightly positively correlated with vaccination readiness ( $\rho = -0.25$ ,  $p < 0.01$ ). The more applications and e-services were needed, the more people were willing to vaccinate and vice versa. However, a wish to communicate with a doctor remotely during the COVID-19 emergency did not correlate with vaccination readiness.

Thus, as also evidenced by some past papers (Chu et al. 2021), the abundance/variety of information sources tend to be an essential prerequisite for making the right choices during a crisis. Since the internet significantly expands the range of information sources these days, it came as no surprise that access to computers and smart devices deemed essential for vaccination.

## LIMITATIONS AND FUTURE DIRECTIONS

The limited scope of the questionnaire did not allow the study to find out which factors influence vaccination readiness, except for sociodemographic characteristics, self-reported health status, HI seeking, and interest in ICT.

For the same reason, certain aspects (e.g., information seeking) could not be thoroughly examined. As follows, it would be beneficial to study the HI seeking of internet users more closely using the think-aloud protocol. On the other hand, interviewing those who do not use computers and smart devices would also provide valuable information about their HI needs and reasons for not using technology.

## CONCLUSIONS

The results indicate that certain factors (e.g., being male, having higher education and income level, and interest in HI seeking) supported COVID-19 vaccination readiness among  $\geq 50$  people living in Estonia. However, it should be taken into account that the survey was conducted at a time when vaccines were not yet available, and therefore the vaccination questions were based on assumptions without the actual experience of their effects.

The results of the study can be used in comparisons with other countries with a similar level of development, but since the proportion of computer and internet users among the elderly is higher in wealthier and digitally highly developed countries, this fact may limit the comparability of the research results with these countries.

This study has also led us to believe that if older adults can obtain HI independently (e.g., by going online), they are more inclined to make better health decisions. Therefore, encouraging older people to adopt new technologies is a welcome and worthwhile undertaking.

Lastly, future public communication and community engagement should consider the fact that older adults' online HI seeking frequency, use of multiple and different information sources, and also the readiness to use digital technology for health purposes tend to correlate positively with vaccination readiness.

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## **Seosed COVID-19 vastu vaksineerimisega nõustumise, terviseinfo otsimise ja valmisoleku vahel kasutada infotehnoloogiaid terviseiga seotud eesmärkidel 50-aastaste ja vanemate Eesti inimeste seas**

Marianne Paimre ja Kairi Osula

Vaksineerimine on kahtlemata üks tõhusamaid viise kaitsta end koroonaviirusega nakatumise eest. Vaatamata sellele on jätnud paljud end vaksineerimata, sh vanemaelised, kes on olnud COVID-19 osas kõige haavatavam kontingent. Käesolevas artiklis analüüsitakse seoseid vaksineerimisvalmiduse ning vastajate sotsiaalmajanduslike tunnuste, tervise, terviseinfo otsimise, tervisekäitumise ja valmisoleku vahel kasutada digitehnoloogiaid terviseinfo saamiseks. Küsitlus viidi läbi viiesaja 50-aastase ja vanema inimese hulgas kuu aega pärast esimese eriolukorra lõppu 2020. aasta suvel. Tulemuste kohaselt nõustusid vaksineerimisega 268 (53.5%) vastajat, 153 (30.5%) väljendasid skeptilisust ning 80 (16%) olid vastu. Vaksineerimisvalmidust mõjutasid oluliselt sugu ja haridustase: mehed, eriti haritumad, olid vaksineerimisega rohkem nõus kui naised. Mida sagedamini tundis vastaja vajadust terviseinfo järele ja mida hiljem oli ta terviseinfot internetist otsinud, seda enam oli ta ka nõus vaksineerimisega, kui see võimalus avaneb ( $\rho = 0.14$ ,  $p < 0.05$ ). Vaksineerimisvalmidus oli huviga digitaalsete terviserakenduste vastu nõrgalt seotud ( $\rho = 0.25$ ,  $p < 0.01$ ). Ilmnes ka, et vaksineerimisvalmimate inimeste kasutatavate terviseinfoallikate ring oli avaram kui vaksineerimisest mittehuvitujatel ja kõhklejatel. Erinevus oli statistiliselt oluline ( $p < 0.05$ ,  $F(2,498) = 3.52$ ,  $\eta^2 = 0.014$ ). Seega terviseinfoallikate mitmekesisus ja interneti kasutamine on adekvaatsemate terviseotsuste tegemisel väga oluline. Tulemusi tuleks arvestada tervisestrateegiate väljatöötamisel ja seda eriti kriisi ajal.