

CLINICAL STUDY

Vaccination against COVID-19 as prevention of occupational disease in University of Defence members in the Czech Republic - motivation for vaccination and reasons for hesitancy

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ABSTRACT

OBJECTIVES: The aim of this cross-sectional study was to investigate the determinants of COVID-19 vaccine acceptance in University of Defence members.

BACKGROUND: Vaccination is the most important method of prevention against COVID-19 and achieving sufficient vaccination rate is thus essential to maintain the military capability.

METHODOLOGY: An online questionnaire was distributed electronically to 2,408 respondents in autumn 2021. The survey was designed to collect demographic predictors of vaccination, data on motivation and reasons for refusing vaccination.

RESULTS: A total of 626 completed questionnaires were analyzed, of which 557 (89 %) were vaccinated and 69 (11 %) were unvaccinated respondents. The most significant predictors of vaccine acceptance were: concern about COVID-19 (OR 2.44, $p < 0.001$), history of COVID-19 (OR 0.39, $p = 0.001$). The most frequently cited motives for vaccination were health protection (74.7 %) and an easier social life (69.1 %), while concerns about vaccine safety and vaccine adverse effects (79.1 %) followed by lack of confidence in vaccine efficacy (68.7 %) were the main reasons for vaccine refusal.

CONCLUSION: To increase the vaccination rate it is necessary to target the younger population and increase awareness of vaccine safety and efficacy. If these measures are not sufficient to encourage voluntary vaccine acceptance, consideration should be given to making vaccination mandatory for selected professional groups (Tab. 5, Fig. 1, Ref. 25). Text in PDF www.elis.sk

KEY WORDS: vaccination, COVID-19, vaccination rate, vaccine refusal, motivation.

Introduction

Achieving a high vaccination rate against COVID-19 disease in the Army of the Czech Republic is essential for maintaining the Army's permanent readiness to perform its predetermined tasks, including the protection of territorial integrity and interests of the Czech Republic and NATO, despite the adverse epidemiological situation.

From January to May 2021, members of the Czech Armed Forces provided help in civilian and military medical facilities and social institutions where they took care of patients and clients infected by COVID-19. During this service, some soldiers contracted this disease, some of them experienced a severe course of the disease and several members of the Czech Armed Forces were even forced to terminate their military service due to the consequences of the disease, despite the absence of associated comorbidities. After fulfilling the conditions for recognition of COVID-19 as an occupational disease (positive PCR test + clinical symptoms, hygienic investigation of working conditions), in most of them COVID-19 will be recognized as an occupational disease and they will receive financial compensation (1). In 2021, according to the Department of Occupational Diseases of the Central Military Hospital in Prague, 79 cases of COVID-19 have been recognized as an occupational disease at the Ministry of Defence, and approximately 450 more applications are pending. Pain and suffering compensation for COVID-19 treated at home averages around CZK 20,000, and can be up to five times more than this amount in case of a severe course of this disease requiring hospital admission (2). Pain and suffering compensation costs for these patients will be at least CZK 10 million. The vaccination status has no influence on the compensation amount. Only severity

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of illness and its consequences are crucial for compensation. This sum is paid by the contracted insurance company. According to preliminary data from the Ministry of Health of the Czech Republic, COVID-19 was recognized as an occupational disease in approximately 5,300 cases in the Czech Republic in 2021 (3).

Vaccination against COVID-19 has been available in the Czech Republic from the end of December 2020. In order to protect the employees of the Czech Armed Forces and to create safe conditions for the performance of their duties, the employer, the Ministry of Defence of the Czech Republic, is striving to ensure the highest vaccination rate in its employees. However, the problem is the COVID-19 vaccine refusal by some employees. Although there is a vaccination campaign in the Czech Republic, it is not entirely successful in persuading all people to get vaccinated. The Czech Republic has been vaccinating against COVID-19 for more than one year, but the vaccination rate in the adult population was only 68 % as of January 4, 2022 (4), which is insufficient to ensure collective protection against COVID-19 disease. In view of these facts, the Ministry of Health has decided to introduce mandatory vaccination against COVID-19 disease for selected occupational groups (Decree No. 466/2021 Coll.), with the obligation to be vaccinated by February 28, 2022 at the latest (5). It concerns not only workers of health and social services, but also members of the security forces, police, firefighters and, last but not least, professional soldiers. However, this regulation was provisionally repealed by the newly appointed Government of the Czech Republic on January 19, 2022. So there is no mandatory vaccination against COVID-19 disease for any professional group.

Unvaccinated individuals in the military create a threat to their surroundings, even if they undergo compulsory symptom screening and post-exposure quarantine. There is not only a higher risk of spreading the disease within the unit, but also to persons entrusted to the care of these members (e.g. medical personnel). Given the risk of a more rapid spread of the epidemic in military conditions compared to civilian ones, the ability of the unit to perform its tasks may be compromised. Indeed, soldiers often perform their duties in limited spaces as part of a team. In addition, they cannot simply choose to avoid the unvaccinated and work from home while on duty, as members of other professions might do in a civilian setting (6).

The argument against mandatory vaccination is that professional soldiers are not considered to be a high-risk population in terms of a severe disease course or mortality from COVID-19 and, in addition, they are less likely to suffer serious health consequences of infection (6).

The aim of this study was to analyze the interest in COVID-19 vaccination among the members of the University of Defence, as well as the motivation of those who decided to receive the vaccine, and the reasons of those who refused the vaccination for now.

Methods

Survey questionnaire

An online questionnaire (composed of 16 questions) in the form of a Microsoft Forms was used, which was based on the

questionnaire used in the study by Štěpánek et al. that analyzed the motivation for COVID-19 vaccination among employees of the University Hospital Olomouc in the Czech Republic (7). The questionnaire contained mostly closed-ended questions related to the respondents' personal data, including gender, age, faculty affiliation, presence of chronic illness, history of COVID-19, history of previous influenza vaccination, and a five-point scale assessing overall fear of COVID-19 disease. This section was common to both vaccinated and unvaccinated employees. Using Maslow's Hierarchy of Needs as a theoretical model, a multiple-choice menu was created in the next section. The questionnaire provided six possible reasons for accepting and six reasons for rejecting the COVID-19 vaccine using existing literature (Tabs 4, 5). The motives were based on meeting the needs for safety, family protection, prevention of spreading the disease, the need for social life, employer's requirement or elimination of testing. There was no limit to the number of motives and reasons given. The questionnaire was distributed electronically to the University of Defence members after pilot testing.

Target group

The study population for this cross-sectional survey consisted of military and civilian employees from the University of Defence (Rector's Office, Faculty of Military Leadership, Faculty of Military Technology, Faculty of Military Health Sciences, $n = 2,408$) who were asked to complete an anonymous questionnaire via e-mail. This questionnaire was available from November 24 to December 8, 2021, thus at the time when vaccination had already been available to all adults in the Czech Republic for almost six months and vaccination rate was not sufficient for herd immunity. Employees could complete the questionnaire only once.

Statistical analysis

The collected data were statistically analyzed using non-parametric tests, as the condition of normal distribution of data verified by the Shapiro-Wilk test was not confirmed for the key variables. The Mann-Whitney test (8) was used to compare differences (e.g. comparing concern about COVID-19) between two groups of respondents, and the Kruskal-Wallis test (9) was used to compare differences between more than two groups of respondents. The chi-square test of independence was used to compare differences between the vaccinated and the unvaccinated according to various characteristics of individuals, as well as to compare the motives cited by vaccinated and unvaccinated individuals. The Spearman's correlation coefficient was used to examine the association between age and concern about COVID-19. Binomial logistic regression was performed to examine the relationships between vaccine acceptance ("vaccinated" or "unvaccinated") and other characteristics included in responses provided by all employees. The level of statistical significance was set at $p = 0.05$.

Results

The questionnaire was sent to 2,408 respondents, of whom 1,661 (69 %) are vaccinated and 747 (31 %) are unvaccinated,

Tab. 1. Characteristics of vaccinated and unvaccinated respondents.

	Whole sample	Vaccinated
Addressed employees (n)	2408	1661 (69%)
Respondents (n,%)	626 (26%)	557 (33.5%)
Age (years, average ±SD)	31.1±15.2	31.9±15.6
Fear of COVID-19, scale 1-5 (average ±SD)	2.31±1.151	2.41±1.144
Female (n,%)	179 (28.6%)	167 (30.0%)
Male (n,%)	447 (71.4%)	39 (70.0%)
Faculty of Military Health Sciences (n,%)	84 (14.6%)	83 (16.2%)
Faculty of Military Leadership (n,%)	284 (49.2%)	243 (47.5%)
Faculty of Military Technology (n,%)	209 (36.2%)	186 (36.3%)
Chronic disease (n,%)	63 (10.1%)	61 (11.0%)
History of COVID-19 (n,%)	175 (28.0%)	143 (25.7%)
Influenza vaccination (n,%)	178 (28.4%)	172 (30.9%)
Influenza vaccination before the season 2020/21 (n,%)	97 (15.5%)	96 (17.2%)

* statistically significant at p < 0.05 level, SD – standard deviation

Tab. 2. Predictors of vaccine acceptance.

Characteristics	Odds ratio	95% Confidence interval	Standard error	p*
Sex (female)	1.09	0.53; 2.22	0.36	0.817
Age	1.01	0.98; 1.05	0.02	0.414
Level of fear of COVID-19	2.44	1.67; 3.55	0.19	< 0.001
Faculty of Military Leadership	0.13	0.02; 1.10	1.08	0.061
Faculty of Military Technology	0.16	0.02; 1.34	1.10	0.090
Chronic disease	1.21	0.25; 5.84	0.80	0.810
History of COVID-19	0.39	0.22; 0.70	0.29	0.001
Influenza vaccination	1.88	0.72; 4.90	0.49	0.196

* statistically significant at p < 0.05 level

the data about vaccination coverage were provided by the management of University. The questionnaire was completed by 626 respondents, 26 % of the original sample, with a vaccination rate of 89 %. The response rate was statistically significantly higher in vaccinated employees (33.5 % vs 9.2 %; p < 0.001). The characteristics of the respondents are shown in Table 1 and Figure 1. The characteristics of vaccinated and unvaccinated employees differ significantly. The mean age of the vaccinated is statistically significantly higher than that of the unvaccinated (31.9 vs 24.8 years). Concerns about COVID-19 were statistically significantly higher in the vaccinated than in the unvaccinated (2.41 vs 1.49). Women made up nearly one-third of the vaccinated, while just under one-fifth of the unvaccinated, a difference that is statistically significant. Among the vaccinated, there are statistically significantly more persons from the Faculty of Military Health Sciences and fewer from the Faculty of Military Leadership. Persons with chronic illness are statistically significantly more represented among the

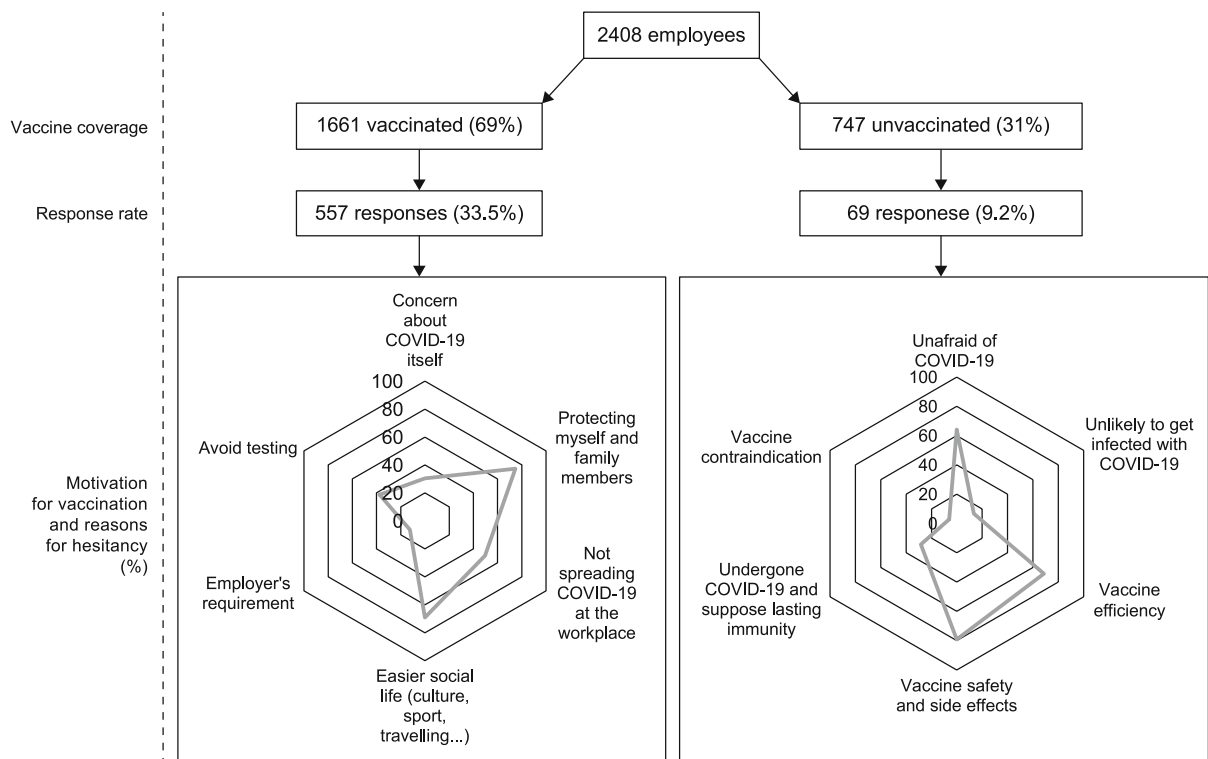


Fig. 1. Study sample along with motives to vaccine acceptance and reasons for hesitancy.

vaccinated (11 % vs 2.9 %). Conversely, persons with a history of COVID-19 are less represented among the vaccinated (25.7 % vs 46.4 %). Adherence to influenza vaccination is significantly higher in those vaccinated against COVID-19 (30.9 % vs 8.7 %).

According to the binomial regression analysis (Tab. 2), the most important and statistically significant predictors of COVID-19 vaccination are concern about COVID-19 and having a history of COVID-19. Higher concern about the unit means 2.44 times higher chance of COVID-19 vaccination, while having a his-

tory of COVID-19 means 0.39 times lower chance of COVID-19 vaccination. Other variables positively (though not statistically significantly) associated with vaccination are female gender, increasing age, chronic illness, and influenza vaccination. Affiliation with faculties other than the reference Faculty of Military Health Sciences is negatively (but not statistically significantly) associated with vaccination.

Concern about COVID-19 is statistically significantly higher in women, as well as in persons from the Faculty of Military Health Sciences, in those with chronic illness, and in those vaccinated against influenza. Having a history of COVID-19 does not have a statistically significant effect on fear of COVID-19. Fear of COVID-19 is also statistically significantly correlated with age, and that positively, thus fear increases with increasing age (Tab. 3).

The frequency of selection of different motives with respect to subgroups of respondents is shown in Table 4. The most frequently cited motives for vaccination are the desire to protect one's own health and the health of family members (74.7 %) and to have an easier social life (69.1 %). In almost half of the cases, the motivation was to prevent the spread of the disease at the workplace. Persons motivated for vaccination by the desire to protect their health were significantly more likely to be women, members of the Faculty of Military Health Sciences, and those vaccinated against influenza, while younger persons were less likely to be motivated for vaccination by the desire to protect health (67.7 % vs 81 %). Younger persons were more likely to be motivated by an easier social life (84 % vs 55.8 %) and they were more likely to avoid

Tab. 3. Level of fear of COVID-19 in the entire respondent sample regardless of vaccination against COVID-19.

	Fear Level, scale 1-5 (±SD)	p
Females	2.68±1.21	< 0.001
Males	2.16±1.09	
Faculty of Military Health Sciences	2.76±1.25	<0.001
Faculty of Military Leadership	2.14±1.07	
Faculty of Military Technology	2.24±1.14	
With a chronic disease	3.16±1.25	< 0.001
Without a chronic disease	2.22±1.10	
History of COVID-19	2.29±1.19	0.727
No history of COVID-19	2.32±1.13	
Influenza vaccination in the past	2.60±1.22	< 0.001
Never vaccinated against influenza	2.20±1.10	
Spearman correlation coefficient	Fear of COVID-19	
Age	0.328	<0.001

* statistically significant at $p < 0.05$ level

Tab. 4. Motives to get vaccinated against COVID-19 and the frequency of their selection.

	Concern about COVID-19 itself	Protecting myself and family members	Not spreading COVID-19 at the workplace	Easier social life (culture, sport, travelling...)	Employer's requirement	Avoid testing
Vaccinated	170 (30.5%)	416 (74.7%)	276 (49.6%)	385 (69.1%)	69 (12.4%)	209 (37.5%)
Younger than the age median (< 23 years)	56 (21.3%)*	178 (67.7%)*	134 (51.0%)	221 (84.0%)*	45 (17.1%)*	134 (51.0%)*
Older than the age median (≥ 23 years)	114 (38.8%)	238 (81.0%)	142 (48.3%)	164 (55.8%)	24 (8.2%)	75 (25.5%)
Females	53 (31.7%)	135 (80.8%)*	79 (47.3%)	107 (64.1%)	22 (13.2%)	47 (28.1%)*
Males	117 (30.0%)	281 (72.1%)	197 (50.5%)	278 (71.3%)	47 (12.1%)	162 (41.5%)
Faculty of Military Health Sciences	40 (48.2%)*	71 (85.5%)*	46 (55.4%)	37 (44.6%)*	15 (18.1%)	25 (30.1%)*
Faculty of Military Leadership	54 (22.2%)	173 (71.2%)	114 (46.9%)	185 (76.1%)	28 (11.5%)	86 (35.4%)
Faculty of Military Technology	56 (30.1%)	136 (73.1%)	96 (51.6%)	169 (74.7%)	24 (12.9%)	84 (45.2%)
With a chronic disease	32 (52.5%)*	48 (78.7%)	28 (45.9%)	31 (50.8%)*	3 (4.9%)	13 (21.3%)*
Without a chronic disease	138 (27.8%)	368 (74.2%)	248 (50.0%)	354 (71.4%)	66 (13.3%)	196 (39.5%)
History of COVID-19	41 (28.7%)	102 (71.3%)	74 (51.7%)	99 (69.2%)	20 (14.0%)	
No history of COVID-19	129 (31.2%)	314 (75.8%)	202 (48.8%)	286 (69.1%)	49 (11.8%)	149 (36.0%)
Influenza vaccination in the past	71 (41.3%)*	144 (83.7%)*	95 (55.2%)	98 (57.0%)*	24 (14.0%)	57 (33.1%)
Never vaccinated against influenza	99 (25.7%)	272 (70.6%)	181 (47.0%)	287 (74.5%)	45 (11.7%)	152 (39.5%)

* statistically significant at $p < 0.05$ level

Tab. 5. Reasons for hesitancy to get vaccinated against COVID-19 (multiple-choice options) and the frequency of their selection.

	Unafraid of COVID-19	Unlikely to get infected with COVID-19	Vaccine efficiency	Vaccine safety and side effects	Undergone COVID-19 and suppose lasting immunity	Vaccine contraindication
Unvaccinated	43 (64.2%)	9 (13.4%)	46 (68.7%)	53 (79.1%)	19 (28.4%)	4 (6.0%)
Younger than the age median (< 23 years)	30 (71.4%)	7 (16.7%)	27 (64.3%)	31 (73.8%)	12 (28.6%)	2 (4.8%)
Older than the age median (≥ 23 years)	13 (52.0%)	2 (8.0%)	19 (76.0%)	22 (88.0%)	7 (28.0%)	2 (8.0%)
Females	5 (41.7%)	1 (8.3%)	10 (83.3%)	10 (83.3%)	1 (8.3%)	0 (0%)
Males	38 (69.1%)	8 (14.5%)	36 (65.5%)	43 (78.2%)	18 (32.7%)	4 (7.3%)
Faculty of Military Health Sciences	0 (0%)	0 (0%)	1 (100%)	1 (100%)	1 (100%)	1 (100%)
Faculty of Military Leadership	25 (62.5%)	6 (15.0%)	25 (70.0%)	30 (75.0%)	8 (20.0%)	2 (5.0%)
Faculty of Military Technology	16 (72.7%)	3 (13.6%)	14 (63.6%)	18 (81.8%)	7 (31.58%)	1 (4.5%)
With a chronic disease	1 (50.0%)	0 (0%)	2 (100%)	2 (100%)	1 (50.0%)	1 (50.0%)
Without a chronic disease	42 (64.6%)	9 (13.8%)	44 (67.7%)	51 (78.5%)	18 (27.7%)	3 (4.6%)
History of COVID-19	19 (61.3%)	2 (6.5%)	19 (61.3%)	22 (71.0%)	18 (58.1%)*	1 (3.2%)
No history of COVID-19	24 (66.7%)	7 (19.4%)	27 (75.0%)	31 (86.1%)	1 (2.8%)	3 (8.3%)
Influenza vaccination in the past	4 (66.7%)	1 (16.7%)	6 (100%)	5 (83.3%)	2 (33.3%)	0 (0%)
Never vaccinated against influenza	39 (63.9%)	8 (13.1%)	40 (65.6%)	48 (78.7%)	17 (27.9%)	4 (6.6%)

* statistically significant at $p < 0.05$ level

testing (51.1 % vs 25.5 %). Females were more likely than males to report a health protection motive (80.8 % vs 72.1 %), whereas the motive to avoid testing was less represented among females (28.1 % vs 41.5 %).

Table 5 presents the frequency of selection of different reasons for hesitating to get vaccinated with respect to subgroups of respondents. The most frequently cited reasons for not being vaccinated were concern about side effects (79.1 %), lack of confidence in vaccine efficacy (68.7 %), and no fear of COVID-19 (64.2 %). No reasons differ statistically significantly by any person characteristics, which is mainly due to the small number of unvaccinated respondents. The exception is that nearly all who assumed lasting immunity from infection had a COVID-19 history, as would be expected.

Discussion

In order to achieve herd immunity in the Czech Republic, vaccination rate of at least 72 % of the entire population is required (10). The vaccination rate in staff of the Czech University of Defence (69 %) and the vaccination rate of the adult population in the Czech Republic (68 %) are only slowly approaching this figure, despite the vaccine being available from December 2020.

According to the Czech study conducted by Riab et al. between April and June 2021, a total of 73.3 % of Czech university students were willing to get vaccinated with the COVID-19 vaccine whenever possible; on the other hand, 19.3 % of respondents

were not willing to get vaccinated and only 7.4 % were hesitant to get vaccinated with the COVID-19 vaccine (11).

Consistent with our findings and the study by Štěpánek et al. involving 3,550 respondents, positive predictors of vaccination include increasing age, fear of COVID-19, influenza vaccination. History of COVID-19 negatively influences vaccine acceptance (7). However, the investigations differ in gender, with female gender being a positive predictor of vaccination (although not statistically significant) in our results, but among the negative predictors in the Štěpánek study (7). When comparing fear of illness, in both studies it was significant in women, those with a chronic illness and a history of influenza vaccination, but it differed after undergoing COVID-19 and with increasing age (7). Differences in some study results may be caused by different mean age of respondents, in our study being 31.1 years (31.9 years for the vaccinated and 24.8 years for the unvaccinated), whereas in the Štěpánek study it was 43.2 years (43.6 years for the vaccinated and 41.9 years for the unvaccinated). The most common motive for vaccination was the desire to protect family members (84 %), while concerns about vaccine safety and adverse effects (49.4 %), followed by lack of confidence in vaccine efficacy (41.1 %) were the main reasons for hesitation, which is consistent with findings of our study.

A study conducted in Kuwait in January 2021 showed that the hesitancy to be vaccinated against COVID-19 was remarkably high (74.3 %), with half of the respondents not planning to get vaccinated. Interest in vaccination was significantly higher in younger

people, males, those with a history of influenza vaccination, and health care workers. Data on vaccine safety and efficacy, mandatory travel requirements, and government- or employer-mandated vaccination would contribute to motivation to get vaccinated (12). According to the results of the Hong Kong study published in April 2020, a total of 45.3 % of participants (out of 1,501 respondents) intended to get vaccinated. The most common reason for hesitation to get vaccinated was concern about vaccine safety. There was higher vaccine hesitancy in men, younger adults, and those without a chronic disease (13).

The Polish study by Szmyd et al. from the turn of the year 2020–2021 revealed that willingness to be vaccinated was associated with increasing fear of COVID-19 (OR 1.56), which is consistent with our results. Overall, however, the percentage of health care professionals willing to be vaccinated (just under 83 %) remained unsatisfactory. The main reason for vaccine refusal remains the fear of developing long-term adverse effects after COVID-19 vaccination. In contrast, willingness to get vaccinated was reinforced by a history of chronic disease, fear of transmitting the disease to relatives (14). According to the Polish research by Babicki et al., a more favourable attitude towards vaccination was found in women, whereas chronic diseases did not have a significant effect on the attitude towards vaccination. Despite increasing experience with new types of vaccines, the percentage of people who fear complications after vaccination has not decreased significantly, and concerns related to vaccine ineffectiveness have increased dramatically. This indicates the limited effectiveness of the current information system (15). According to the review (24 studies) from May to June 2021 to assess health care professionals' attitude towards vaccination, two-thirds of respondents ($\geq 50\%$) were found to have positive attitude towards vaccination, but approximately one-quarter of studies reported negative attitude ($< 50\%$) towards vaccination (16).

According to the survey made at the US Air Force base from November 2020 to January 2021, nearly 23 % of respondents identified themselves as undecided concerning their attitude towards vaccination. They feared more short-term adverse effects of the vaccine (43 % vs 26 %), long-term adverse effects of the vaccine (82 % vs 50 %, $p < 0.001$), and lack of vaccine efficacy (23 % vs 5 %). Younger age was an independent risk factor for vaccine refusal (17). After implementation of an educational intervention (live PowerPoint presentation) at this base during January 2021, there was a 36 % reduction in vaccine hesitancy (18). After the retrospective data analysis from the US Military Health System, 61 % of the total sample were vaccinated. No differences in vaccine acceptance were found concerning gender or health status (including prior COVID-19 infection) (19). The need to ensure high vaccination rate is also evident in the military sector. The military vaccination campaign in Israel, led by a multidisciplinary team since December 2020, has contributed to high COVID-19 vaccination rate in the Israel Defense Forces, with 88 % of military personnel (excluding those recovered from COVID-19 disease, who were not prioritized for vaccination at this stage) having been vaccinated by February 18, 2021 (54 days after the vaccination campaign was launched) (20).

Because of the insufficient vaccination rate in voluntary vaccination, the US Army mandated all active-duty soldiers to be vaccinated by December 15, 2021, and all Army National Guard soldiers will be required to be vaccinated by June 30, 2022 (21). However, soldiers may request an administrative or medical exemption from the vaccination requirement using similar procedures established for other mandatory vaccinations (22), which include vaccinations against the following diseases: adenovirus, hepatitis A, hepatitis B, influenza, measles, mumps, rubella, meningococcal disease, poliovirus, tetanus, diphtheria and varicella (23). In mid-December 2021, the U.S. military began taking disciplinary actions and discharging soldiers who refused to get vaccinated against COVID-19. As many as 20,000 unvaccinated soldiers out of approximately 1.3 million active-duty soldiers are now facing discharge from the military (24). The Government of Canada requires federal public service employees be fully vaccinated. This also includes the Canadian Armed Forces, where the deadline for proof of vaccination expired on October 29, 2021 (25).

Our study had several limitations. It was a cross-sectional study. It examined a specific population (University of Defence members – both students and academics, professional soldiers and civilian employees); the survey did not distinguish between military and civilian employees, so generalizations to the entire military population should be presented with caution. A total of 2,408 persons were contacted, but only 26 % of them completed the questionnaire; moreover, the response rate between vaccinated and unvaccinated respondents differed significantly in favour of vaccinated respondents. Another limitation is the failure to take account of the time lag between completion of the questionnaire and vaccination or experience of COVID-19. The evolution of the COVID-19 pandemic, frequent changes in government measures to minimize the impact of the pandemic, the occurrence of new virus mutations and the effectiveness of vaccines for these mutations may have influenced the interest in vaccination.

Conclusion

The main motives for vaccination among University of Defence members are to protect their own health and the health of family members and to make their social life easier. The most frequently cited reasons for not vaccinating are fear of side effects, lack of confidence in vaccine efficacy, and no fear of COVID-19. Despite months of vaccine education and availability of vaccination, the Czech Republic has not achieved sufficient vaccination rate to ensure herd immunity; therefore, it seems necessary to introduce mandatory vaccination for selected occupational groups, e.g. in the military environment, as has been done in the USA or Canada. The results obtained may help in targeted motivation of workers to COVID-19 vaccination.

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