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Vaccine hesitancy in the University of Malta Faculties of Health Sciences, Dentistry and Medicine vis-à-vis influenza and novel COVID-19 vaccination

Article Info

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Abstract

Introduction: COVID-19 continues unabated and vaccine hesitancy is a chronic public health threat that may undermine efforts to achieve herd immunity for this pandemic by vaccination. A questionnaire was carried out in the University of Malta Faculties of Health Sciences, Dentistry and Medicine to ascertain degree of vaccine hesitancy vis-à-vis influenza and COVID-19 vaccination.

Methods: An anonymous questionnaire was sent through the faculty Deans and the respective secretaries via Google forms.

Results: The response rate was 23% (n = 852). The percentages of who took the influenza vaccine last year and who will take it this year increased at all ages, highest for Medicine and Academics. For COVID-19 vaccination, unlikely, undecided and likely to take were 30.5/25.3/44.2% respectively. Medicine and Academics was also likeliest to take, as were males overall. The proportion of those likelier to take the COVID-19 vaccine was directly related to likelihood of taking influenza vaccination. Concerns pertaining to COVID-19 vaccination were related to insufficient knowledge about such a vaccine and potential long-term side effects.

Discussion: The increased influenza vaccine uptake is unsurprising in view of the current heightened awareness of respiratory disease. The hesitancy toward COVID-19 vaccination is of concern particularly in this health related group who should be better informed. The association of vaccine hesitancy for COVID-19 with influenza vaccination infers an intrinsic degree of vaccine hesitancy. Far more must be done in order to educate not only the public but also healthcare workers and students with regard to the advantages and safety of vaccines.

1. Introduction

COVID-19 continues, unabated (September 202) but for non-pharmaceutical interventions [1], albeit with several candidate vaccines putatively available in a few months’ time [2]. However, vaccine hesitancy is a chronic public health threat that may undermine efforts to achieve herd immunity by vaccination [3,4]. Questionnaires are useful tools to assess the degree of and attempt to understand the motivations behind this phenomenon.

This study was carried out in the University of Malta Faculties of Health Sciences (Allied Health), Dentistry and Medicine. It involved students, academics and management/support staff and its purpose was to ascertain the degree of vaccine hesitancy vis-à-vis influenza vaccination and a putative novel COVID-19 vaccine later this year.

2. Methods

A short, anonymous questionnaire was sent out via the above-mentioned faculty secretaries with the permission of the three Deans. It was disseminated to students, academics and management/support staff. The period for which the questionnaire was open was from 16/09/2020 to 22/09/2020. The questionnaire was hosted via Google forms and exported to bespoke Excel spreadsheets for analysis. It commenced with the following introduction:

Malta has been fortunate to have the EARLY allocation of a COVID-19 vaccine later this year. The vaccine is licensed and approved and will have passed through Phase 3 trials. Priority will be given to front liners and to the vulnerable, followed later by the rest of the population. This is totally anonymous and a very short, public health survey for medical related university faculties medical, please fill completely.

The questions, formatted in tick boxes, covered sex, faculty, role (student/academic/support), age bracket, whether the influenza vaccine was taken last winter and whether it would be taken this coming winter (yes/no). The following text was inserted in the questionnaire followed by several questions on a Likert scale of 1–5.

QUICK READ FOR INFORMATION: Vaccine development is a three-phase process. In Phase I, small groups of people receive the trial vaccine. In Phase II, the vaccine is given to people who have characteristics (such as age and physical health) similar to those for whom the vaccine is intended. In Phase III, the vaccine is given to thousands of people and checked for efficacy and safety. The COVID vaccine that will arrive in Malta will have gone through these Phases and will be approved and licensed.

Based on this information, how likely are you to take the COVID-19 vaccine?
I am concerned as I don’t know enough about the vaccine
I am concerned about the short term side effects (e.g. fever etc)
I am concerned about possible long term side effects
I am concerned because I don’t think the vaccine will be effective
I am against vaccines in general

For the first question in the list above, it was assumed that scores 1 and 2 were “unlikely”, 4 and 5 were “likely” and a score of 3 was regarded as undecided. For the Likert questions following the first, all were allowed to tick options whatever their likelihood of taking the vaccine.

Chi tests and chi tests for trend were used except for one two by two table with small values wherein a Fischer exact test was used. A p value ≤ 0.05 was taken to represent a statistically significant result.

3. Results

3.1. Influenza vaccination

The survey had a 23% (n = 852) response rate (Table 1). The percentages of those who took the influenza vaccine last year and who will take it this year overall increased from 46% (took %) to 69% (will take %), a highly significant increase (Table 2). The projected increased influenza vaccine uptake was highly significant across all faculties, but highest at baseline and projected values for Medicine (Table 2, chi and p values). Medicine versus the rest was statistically significant for having taken the influenza vaccine last year (took %, chi = 14.6, p = 0.001) and for projected influenza vaccine uptake (will take %, chi = 24.8, p < 0.0001). When analysed by role, there will also a significant increase in uptake of influenza vaccination across the board, with the highest uptake and projected uptake in academics (Table 3). The increased uptake
3.2. COVID-19 vaccination

For this vaccine, overall a third are unlikely to take the vaccine, with a quarter undecided and less than a half likely to take it (respectively 30.5/25.3/44.2% - Table 2). Like influenza vaccination, Medicine is likeliest to take the COVID-19 and this difference was statistically significant when Medicine was compared with the rest (Table 2, chi = 28.5, p < 0.0001). When analysed by role, academics were likeliest to take the vaccine, followed by students and support staff (Table 3). An analysis by age showed a significant trend toward increased likelihood of vaccination with age (chi = 4, p = 0.046). Males were likelier to take the COVID-19 vaccine than females (70% vs 53% respectively, chi = 25.7, p < 0.0001).

The proportion of those likelier to take the COVID-19 vaccine was directly related to the likelihood of their taking the influenza vaccine (Table 5: chi = 157.1, p < 0.0001). Concerns pertaining to COVID-19 vaccination are depicted in Table 6. The issues raised were not related to vaccine avoidance in general but more related to insufficient knowledge about such a vaccine and potential side effects especially those in the long term.

4. Discussion

The World Health Organization (WHO) has averred that vaccine hesitancy “one of the top ten threats to global health” [5] This study was applied to an “insightful population to investigate their attitudes to accept new vaccination because they are open-minded, educated, and supposed to respond quickly to public health issues” [6], but this turns out not quite to be the case in Malta. The increased proportion overall who plan to take the influenza vaccine this year when compared to last winter is almost certainly due to increased awareness of respiratory viral illnesses in general in the wake of the COVID-19 pandemic.

The higher influenza vaccine uptake in Medicine may be due to increased awareness and knowledge of how vaccines are developed and tested, and therefore, their safety profiles [7]. This also applies to the development of COVID-19 vaccines which, despite the speed of development, are still undergoing the conventional phases of testing before release to the general public [7].

The hesitancy toward COVID-19 vaccination is of concern and has been noted in other countries, additionally fuelled these days by social media hosted conspiracy theories [8]. However, in this supposedly insightful population, the high hesitance proportion is worrying. Indeed, the student COVID-19 hesitancy is far worse than for Italian university students who, in a recent study, were 86.1% prepared to take this vaccine [6]. It is possible that this is due to the far more acute and severe impact that the pandemic had on Northern Italy to date than in Malta [9,10].

Like influenza vaccination, Medicine is likeliest to take the COVID-19, as were academics overall, probably for the same reasons averted above. Vaccine hesitancy for COVID-19 was related to that for influenza, inferring an intrinsic degree of vaccine reluctance/hesitancy and not merely a disinclination based on the apprehensions discussed below or on those voiced in the concerns section of the questionnaire. However, the concerns raised are (to some degree) valid insofar as that there are several types of vaccines in development and these include not only traditional vaccines but also next generation vaccines [2].

The greater male likelihood to take the vaccine may be due to the known male penchant for risk taking [11], in this regard, vis-à-vis a novel vaccine which might be viewed by some as a risky pharmaceutical intervention. The higher vaccination acceptance by age probably reflects self-interest as age is known a risk factor [12].

Vaccine hesitancy is a scourge, a real, clear and present danger to public health [3,4,13]. With regard to university students, one may argue that this particular group should be particularly insightful since they are in various fields of health studies. However, this type of hesitancy has been noted in other studies and observations [14,15]. This insouciance is unwise and clearly more must and should be done in interdisciplinary and multidisciplinary fashion in order to educate the public as well as healthcare workers and students with regard not only to advantages but also the safety of vaccines [16].

Declaration of competing interest

The authors have no conflict of interest to declare.

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