

## Abstract

**Introduction:** Influenza is a Public Health problem with important impact on the morbidity and mortality of populations. Healthcare Workers are included in the infection risk groups, and for that reason are considered one of the vaccination priority groups. Due to the low vaccination compliance between those workers, especially between medical doctors, we aim to study influenza vaccination determinants on medical students. It was also an objective to validate a tool which evaluates infection control attitudes and influenza's knowledge on university students.

**Participants and methods:** this cross-sectional study includes a sample with 512 Physiology and Educational Sciences (PES) students and 626 medical students (participation proportion 57.1% and 45.4%, with a mean age of 21.7 years (sd=5.0) and 19.6 years (sd= 2.3) respectively, and 87.3% and 65.8% by female students). In 2007 it was applied a self-questionnaire, mainly on high attendance classes, on PES students. In the same year, on vaccination campaign on Clinic Epidemiology, Predictive Medicine and Public Health Department it was applied another self-questionnaire, two weeks later, for all medical students. The questionnaires were performed to evaluate infection control attitudes, including 18 items, and 9 items to evaluate influenza's knowledge, between other variables. To evaluate the tool's characteristics, it was performed a Principal Components Analysis and latent trait models and, calculated Cronbach alpha coefficients. Median scores according to sociodemographic variables were compared using Mann-Whitney and Kruskal Wallis tests. To identify the associations between determinants and vaccination compliance logistic regression models were performed.

**Results:** From the infection control attitudes items, it were extracted 13 from 18 items, distributed by 3 principal components (PC) which explained 39.3% of the variance (Cronbach alpha coefficient of 0.780, 0.556 and 0.517 respectively on PC1, PC2 and PC3). There was not found significant differences on PC's the median scores (PC1: 52 vs. 52;  $p=0.706$ ; PC2: 85 vs. 80;  $p=0.328$ ; PC3: 60 vs. 55;  $p=0.188$ ). From influenza's knowledge items there were extracted 7 from 9 items on one latent, with a Cronbach alpha coefficient of 0.527. Medical students achieved a significant higher knowledge score comparing with PES students (83.3 vs. 66.7,  $p<0.001$ ). On medical students, it were observed that clinical grade students (85.7 vs. 100,  $p=0.001$ ), and those who attended health education session about influenza (85.7 vs. 100,  $p=0.001$ ), achieved a significant higher median score on knowledge latent. About vaccination determinants,

medical students who had prior vaccination on last year (OR 6.65; CI95% 4.40-10.37), and more than two influenza immunization (OR 7.20 CI95% 4.99-10.39) are more likely to be vaccinated. Students who smoke are less likely to be vaccinated (OR 0.39 CI95% 0.21-0.70). Also, those who have better score on “how they wash their hands” (OR 1.97 CI95% 1.25-3.09) and, better knowledge score (OR 1.53 CI95% 1.01-2.31), are more likely to be vaccinated. Regarding reason for vaccination compliance, the main compliance reasons were have attended actions that advised vaccination (24.9%), the decision to try and see if the vaccine works (19.8%) and afraid of contracting influenza in contact with patients (18.1%). On the other hand, the main reasons for vaccination non-compliance were the belief that vaccine is unnecessary for themselves (37.3%), never have had influenza (13.6%) and, being ill at the time and decided not to take the shot (10.8%).

**Conclusion:** In this study an adequate instrument was developed to assess influenza infection control attitudes and influenza’s knowledge. In medical students, being previously vaccinated, do not smoke, had better attitudes on “how they wash their hands” and better influenza’s knowledge, were the main influenza vaccination determinants. The main vaccination compliance reason was had attended vaccine advised lecture. On the other hand, the main vaccination non-compliance reason was the belief that vaccine is unnecessary for them.