Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Contemporary issues

COVID-19: Are Spanish medicine and nursing students prepared?

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1. COVID-19: new outbreak and new challenge

The new coronavirus, 2019-nCov or COVID-19, has become a global pandemic since Chinese authorities informed the World Health Organization (WHO) of several cases of pneumonia of unknown aetiology in the city of Wuhan on 31 December 2019. The virus quickly spread throughout China and affected other Asian countries before leaping towards America, Africa, Oceania and Europe (Spanish Ministry of Health, 2020).

In Europe, the first non-imported case of COVID-19 was declared in Germany on 28 January. On the same day, two imported cases were declared in Italy. Only 2 days later, the first imported case appeared in Spain. Between 2 and 10 March, it went from 88,913 to 113,672 confirmed cases in more than 100 countries. The rapid spread of this virus led the WHO to declare a global pandemic on 11 March 2020 (Spanish Ministry of Health, 2020).

Faced with this unprecedented challenge, European governments are adopting distinct policies, and at different rates, to stop COVID-19 from spreading. These measures are based on recommendations from the European Centre for Disease Prevention and Control (ECDC) and the possible scenarios which the pandemic may evolve (Jonhson et al., 2020). Some of these measures, such as isolation of cases, are based on previous experiences taken from outbreaks of Severe Acute Respiratory Syndrome (SARS-CoV-1) in 2003, Avian Influenza in 2008 or Middle East Respiratory Syndrome (MERS-CoV) in 2012. Other measures are completely new, such as limiting attendance to events and mobility within national territories, or closing borders to countries with high incidences and declaring a state of alarm. Despite the differences between previous epidemics and COVID-19 (high transmission speed or transmission from asymptomatic carriers), governments and health systems are expected to learn from previous experiences and be prepared to respond to these outbreaks by adopting policies that prevent expansion and disease severity, and to guarantee necessary human and material resources and ensure citizens' well-being by covering basic services.

In this context, those responsible for educational institutions are expected to; take previous epidemics as opportunities to improve the educational programmes of future health professionals; incorporate the necessary competences into public health, epidemiology or infectious processes to a greater extent to improve knowledge, attitudes and confidence when faced with of epidemic outbreaks, and their socio-political responsibility.

Some studies have analysed knowledge on prevention, attitudes and the willingness of medical or nursing students to either attend infected cases (Patel et al., 2017) (Elrggal et al., 2018) or be volunteers in previous outbreaks (Yonge et al., 2010). However, no articles have been found that explore students' opinions about policies adopted to contain outbreaks. Furthermore, most of these studies have been conducted in the USA or in Asian countries, and no similar studies conducted in European countries are available, including Spain, perhaps because the magnitude and impact of previous epidemics were not considered high in our context.

For this reason, an online questionnaire was prepared about knowledge to prevent the transmission of COVID-19 on the one hand, and about attitudes, confidence and willingness to deal with infected cases and opinions on the first COVID-19 containment policies adopted in Spain on the other hand. It included: ten items on knowledge extracted from the Spanish Ministry of Health (2020) recommendations for preventing and treating COVID-19; ten items on attitudes, confidence and willingness to deal with infected cases based on previous studies (Elrggal et al., 2018; Patel et al., 2017); 15 items on political measures based on Spanish legislation to contain the COVID-19 pandemic (Spain, 1a, 2020).

On March 12, the questionnaire was disseminated on social networks (i.e. Facebook, Twitter, Instagram, WhatsApp groups) to nursing and medical students. In 24 h, 102 valid responses were obtained from medical (43.1%; n = 44) and nursing (56.9%; n = 58) students from 11 Spanish universities, of whom 88.1% (n = 89) were women (mean age of 21.31 years; ± 3.931). Most of the sample had neither a stable partner (65.3%; n = 66) nor children (93.1%; n = 94), and believed that their health state was good (92.1%; n = 93). At that time, 50% of the sample was doing clinical practices. Only 10 students claimed to be in contact with suspected COVID-19 cases and 29 students had classmates who had been in contact with confirmed or suspected cases.

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2. Knowledge about preventing and transmitting COVID-19

Coronaviruses are a wide family of viruses known since the 1960s. To date, the detected coronaviruses that could infect humans were 229E, NL63, OC43, HKU1; MERS-CoV (Middle Eastern Respiratory Syndrome) and SARS-CoV-1 (Severe Acute Respiratory Syndrome). The new coronavirus COVID-19 causes a disease known as SARS-CoV-2 that manifests itself as fever, cough and shortness of breath 2–14 days after exposure. There is currently no vaccine for COVID-19, thus measures to prevent and avoid contagion between people include washing hands with soap and water, using a hand sanitiser containing at least 60% alcohol, and avoiding touching eyes, nose and mouth. Another recommendation is to maintain a safety distance between people of 1 and 2 m (Centers for Disease Control and Prevention, 2020).

Most students correctly answered the questions about the possibility of transmission from asymptomatic people (94%), the main transmission routes of COVID-19 (88.1%), fatality rate (77.2%) and the existence of a reliable diagnostic method (68.3%). The percentages of correct answers lowered for the questions about taking measures to avoid community transmission (57.4%), main symptoms (54.5%), risk groups (41.6%) and incubation periods (38.6%). It was noteworthy that only 8.9% of the students correctly answered the question about which measures are taken to prevent transmission from an infected patient in hospital. Only 18.6% of the students had received some type of specific training on COVID-19 organised by health services or their university.

The study sample's general level of knowledge can be considered adequate, but it was striking how the success percentages for the questions about COVID-19 transmission lowered. These results differed from those obtained by, for example, Elrggal et al. (2018) in their study on MERS-CoV in Saudi Arabia, whose percentage of correct answers for the questions on prevention measures came close to 90%.

3. Attitudes, confidence and willingness to attend to COVID-19 cases

Of the whole study sample, 65.3% did not feel prepared or were barely prepared to attend to cases of COVID-19, although 74.2% were willing to do so if the situation required it, and assumed moral responsibility to care for infected patients (64.4%). These results coincide with those of Yonge et al. (2010) on nursing students' willingness to volunteer during the avian flu pandemic.

Only 19.8% of the students indicated that they would not carry out practices in a centre with infected patients, and 25.8% would opt to not attend to these patients. Finally, 38.9% stated being afraid of becoming infected from coming into contact with a case, compared to 92% who indicated feeling afraid of being able to infect a member of their families.

Yonge et al. (2010) affirmed the need to integrate competences into curricula to prepare nursing students for emergencies and outbreaks. Patel et al. (2017) concluded that level of knowledge and prior training can influence health science students' willingness to attend to cases infected by MERS-CoV, as well as their attitudes and confidence.

4. Opinion on social and containment policies

After Italy, Spain is the second European country with the most cases of, and deaths by, COVID-19 (Spanish Ministry of Health, 2020). On 10 March, there were 1622 confirmed cases and 35 deaths in Spain. As these figures were expected to increase, on the same date the Spanish government approved the first package of measures to stop COVID-19 from spreading (Spain 1a, 2020).

The entire study sample agreed that COVID-19 was a serious public health problem, although a good proportion of students did not agree with the adopted policies. These measures included limiting direct flights between Spain and Italy (31.7% disagreed), holding sports events behind closed doors (35.7% disagreed), suspending state-funded retiree travel (34.6% disagreed), suspending socio-cultural events with more than 1000 people (31.9% disagreed) and suspending popular festivals like Las Fallas in Valencia (31.6% disagreed).

In addition, the Spanish government adopted the first social protection measure by recognising those infected or adopting preventive isolation, like victims of work accidents, to guarantee their economic income (35.2% disagreed). Likewise, the centralised supply of material resources needed to combat the disease was ensured (31.7% disagreed). Otherwise, 77.2% of the sample thought that these measures had come too late, they believed that it was necessary to allocate more resources to Health Education (84.2%) and that health centres did not have the necessary resources (85.1%).

No previous studies were found as to how medical or nursing students valued the political measures adopted in epidemics or catastrophes. Perhaps the sample's characteristics could influence these results because: firstly, it was a sample made up of young students; secondly, political competence is not usually addressed in the education of future health professionals; thirdly, their education does not model them in this sense in any case. Furthermore, the fact that nursing is barely present in high political spheres and reference leaders are lacking may also limit their vision of the measures directly related to health micro-management, and macro-management aspects could be avoided. For all these reasons, it might be difficult for students to understand the depth and necessity of the adopted preventive and social measures.

One extremely relevant aspect for nursing or medical students is clinical practices because they form a compulsory part to passing a degree and generally represent 50% of training programmes. The whole sample (100%) stated that clinical practices had been suspended by the regional government's decision (73.3%) or by the university itself (26.7%). Moreover, 81.2% of the sample agreed with this measure, which was also political in nature, and justified it because they were considered to be sources of transmission and they lacked preparation.

On a daily basis, the Spanish government continues to approve measures to contain the expansion of COVID-19 and to minimise the pandemic's socio-economic impacts. In fact on 14 March, a state of alarm was declared and a new battery of measures decreed the closure of different types of business to restrict both citizen mobility throughout the territory and reasons for leaving home (Spain 1b, 2020).

5. Conclusion

This pandemic is an unprecedented challenge for governments, healthcare systems and education systems. COVID-19 should be considered a turning point in not only the most appropriate measures and strategies to prevent new epidemics or health services protocols of action, but also in the education of future health care professionals.

Spanish medical and nursing students are willing to care for patients with COVID-19 and their attitudes are appropriate. However, lack of knowledge about basic measures to prevent the transmission of this virus at both community and hospital levels, and the low percentage of students who report having received specific training, are striking.

Moreover, many students do not seem to agree with the initial package of political measures adopted to contain the COVID-19 extension or social measures. Age, political ideals or lack of leadership models in this profession are factors that can influence this outcome and should be explored in more depth. However, these results reveal the need to face a pending challenge in the education of health professionals, specifically in nursing: the development of political competence.

Perhaps COVID-19 has caught us off guard, or maybe Western arrogance has made us feel too sure that we would not be affected this time either. It is difficult to give quick correct answers in all areas, but it is necessary to start developing strategies to face these situations and to improve our students' preparation. Soon they will be on the front line and who knows if they will have to volunteer before they finish their

education.

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Declaration of competing interest

None.

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