Intervention model for detection, prevention and control of COVID-19 in community pharmacy

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The announcement by the WHO of the characterization of the new Coronavirus 2019 disease (COVID-19) as a pandemic, entails an adaptation by the community pharmacy in carrying out its care activity in general, with particular emphasis on "Minor Ailments Service" in particular. The measures taken by the different health administrations in which patient telephone care by primary care offices is prioritized have left more consultations on symptoms in the community pharmacist health-related problems as pharmacies are the closest health facilities to the patient. The similarity between the symptomatology caused by the new Coronavirus with that of some Enteroviruses that cause mild respiratory and gastrointestinal tables (dry cough, fever, sore throat, vomiting, diarrhoea, etc.) makes community pharmacies highly capable places for contagion detection and prevention. A model of protocolized intervention is needed to facilitate the pharmacist's work in discriminating during the indication between minor symptoms and symptoms of referral for possible cases of COVID-19 so that in conjunction with the rest of the staff we help control the disease and make better use of primary care consultations.

Keywords: Intervention. Coronavirus. COVID-19. Minor ailments. Pharmaceutical care.

INTRODUCTION

In December 2019, in Wuhan (China), cases of pneumonia were diagnosed, caused by a virus responsible for the disease officially named coronavirus disease 2019 (COVID-19) (Han *et al.,* 2020), belonging to the *Coronaviridae* family (Xie, Chen, 2020). The virus spreads from person to person through droplets from the nose or mouth, expelled by an infected person coughing or breathing out, and inhaled by healthy individuals (Gong *et al.*, 2020; Law, Leung, Xu, 2020), even before the appearance of symptoms or if the person does not present symptoms (National Health Commission of the People's Republic of China, 2020). In addition, many people who get COVID-19 experience only mild symptoms, mostly in the early stages of the disease (Chinese Pharmaceutical Association, 2020; FIP, 2020a). Therefore, it is possible to contract it from someone who has mild symptoms, such as a cough, and does not feel sick. The WHO estimates that the rate of contagion of the virus is 1.4 to 2.5 (Xie, Chen, 2020; WHO, 2020a; WHO, 2020b).

The clinical spectrum of COVID-19 is widely varied, from mild to severe disease with high risk of mortality (Gane, Kelly, Hopkins, 2020; Tresoldi *et al.*, 2020). The most common symptoms are minor, such as fever, tiredness, dry cough, difficulty breathing, aches, nasal congestion, rhinorrhea, malaise, sore throat, and, to a lesser extent, digestive disorders such as vomiting and diarrhea (Han *et al.,* 2020), loss of taste and smell, and skin problems (Tagarro, 2020). All of these symptoms are common with other diseases, so it is difficult to distinguish COVID-19 from other illnesses. Some people become infected but develop no symptoms or very mild symptoms and have no sense of illness; the incubation period is between two and fourteen days, although the majority of people develop symptoms within five to seven days (Han *et al.,* 2020).

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Pharmacist intervention could avoid contagion or detect signs of alarm. It is important to detect a possible case of COVID-19 because, although most people (about 80%) recover from the disease without the need for any special treatment, 20% will develop a serious disease, and the lethality after the appearance of symptoms is about 2%, data that have to do not only with the pathogen but also with prevention measures and the capacity of the health system to care for those affected (Wang *et al*., 2020a; Wang *et al*., 2020b, Cheung *et al*., 2020; Zhou, Wei, 2020).

Current evidence suggests that there are early markers of disease severity (patients more likely to develop serious disease), such as age (over 60) and underlying medical conditions including high blood pressure, heart problems, diabetes, chronic lung disease, or immunodeficiency (Wang *et al*., 2020b). With this group, the pharmacist plays a key role in educating about prevention of infection and detecting possible warning signs of COVID-19 with a consequent safe referral (FIP, 2020b).

On March 11, 2020, the WHO director general classified the situation as a pandemic throughout the world and as becoming a global problem to which the different health systems of each country must adapt (Yang *et al*., 2020). In Spain, people have been suggested "to avoid going to the health centre to renew prescriptions and to request a telephone consultation with professionals (Jurado *et al*., 2020). Therefore, community pharmacies are the main health establishments open to the public, being the first line of contact with patients for this type of "non-urgent" consultation and one of the places where pharmacists can act more effectively in prevention, detection, and education about possible contagion (Ung, 2020).

Pharmaceutical care, a healthcare activity carried out by pharmacists in collaboration with other healthcare professionals, aims to improve patients' quality of life. The community pharmacist is the first point of contact for patients, and the network of pharmacies is a key source of reliable and up-to-date information on diseases in general and minor symptoms in particular and can be a determining factor in avoiding health collapse and a means of controlling possible contagion (Paudyal *et al*., 2011; Wei, Chen, Yu, 2010; Liu *et al*., 2020a). The minor

ailments service has undergone a change, moving to the question, "What do I get for...?" (Faus-Dader, Amariles-Muñoz, Martinez-Martinez, 2008). Moreover, more questions have been added, such as, "Do I have to go to the doctor if this happens...?" and "Can I be infected if I have...?" There are new alarm indicators that should be studied to differentiate and protocolize the action and referral to the doctor in the face of the new COVID-19 disease (Fang, Huang, Yang, 2007; Agomo, 2012). It is necessary to establish a protocol in community pharmacy (Liu *et al*., 2020b; Si-qian *et al*., 2021) that enables the early detection of possible or probable patients with COVID-19 by symptoms compatible with the disease through the design of an intervention model for the detection of symptoms related to COVID-19 during the process of minor ailments service, through medical referral indicators for possible COVID-19, avoiding the spread of COVID-19, supporting primary care centers in the control and prevention of coronavirus infections, reducing visits and optimizing health care resources, and improving the public's ability to protect themselves and correct inappropriate medical-seeking behavior by providing accurate information about COVID-19 (Kang, Rhie, 2020).

MATERIAL AND METHODS

The design of the intervention model was based on the minor ailments service and the action guidelines for the provision of the minor ailments service of the IndDáder program (Machuca, Baena, Faus, 2005), a literature review to achieve an adapted intervention model, and multidisciplinary work with other health professionals.

RESULTS

Appropriate training on COVID-19 and intervention design for pharmacists

Pharmacists should undergo training on COVID-19 (etiopathogenesis, symptoms associated with the disease, diagnose, protection and transmission methods, course of the disease, and disease evolution and treatments);

training on the intervention protocol (documentation repository, completion and custody, data protection, data collection tool, interpretation of results, patient follow-up, referral to the doctor, and pharmaceutical intervention protocols); and health education on COVID-19 (advice and recommendations to patients on infection prevention and isolation measures in the event of infection).

Adaptation of the pharmacy office

Information should be posted at the entrance and on the floor of the pharmacy presenting a minimum safety distance and a separating bar indicating the flow of patients in and out. An individualized attention counter should be implemented with a distance of two meters and a methacrylate screen on the counter with a minimum height of one meter and covering the whole counter. Safety measures for community pharmacists include gloves, hydroalcoholic gel, and masks. All work surfaces and the patient environment should be cleaned and disinfected immediately after patient care.

Patient eligibility

Patients requiring a pharmacy referral service with symptoms compatible with COVID-19 would be eligible for the intervention model. Patients will be informed of the existence of this service and the procedure to be carried out jointly, resolving any doubts that might arise and ensuring confidentiality throughout the process.

Informed consent

Patients' explicit consent will be obtained by having them sign and accept the data protection clause.

Data collection through an interview incorporated into a computer development/support for further processing and storage

A series of questions will be asked using a standard questionnaire to obtain personal data. Anthropometric measurements will be performed by means of a lever scale and platform with approved stadimeter. Temperature will be taken by means of an approved infrared thermometer. The oxygen saturation in blood will be obtained by means of a noninvasive and precise form, and heart rate by means of an approved finger pulse oximeter. Data on medical history, current symptomatology and symptomology during the previous month, and other data will also be collected.

Evaluation of the information and developing a multivariable analysis with the aim of detecting patterns or symptoms compatible with COVID-19

Based on the type of symptoms, duration (in days) of these symptoms, intensity level from 0 to 10 (with 0 being a mild degree and 10 being a degree that prevents the development of the patient's normal activity), and risk factors, patients will be classified, and subsequent action will be determined.

The symptoms to be analyzed for their prevalence in this disease are the following: fever >37ºC, loss of taste and/or smell, bloody sputum, facial pain, continuous dry cough, sore throat, conjunctivitis, aphonia, fatigue, vomiting, chest pain, general malaise, increased expectoration, chills, diarrhea, skin problems or difficulty breathing, nasal congestion, headache, and other less common symptoms.

Risk factors to be considered to improve understanding and subsequent follow-up of the patient will be the following: over 60 years of age, previous pathologies, pregnancy, smoker, health personnel/essential services, and person in previous contact with patient positive for COVID-19.

Based on this multivariate analysis, the results will help us to classify patients into 3 large action groups:

- Patient with severe symptoms: person with difficulty breathing, drowsiness, or fatigue; person with fever over 37ºC; person with hypoxia, <90%; person with one or more symptoms compatible with COVID-19 of high intensity that prevent normal daily activity; person included in the risk groups.
- Patient with mild symptoms: person with symptoms consistent with low-intensity COVID-19 that do not impair normal daily activity and/or with a duration

of <72 hours; person with no symptoms associated with the disease.

- Patient requiring minor ailments service for relief of a symptom that at the time of consultation is not included in COVID-19-related symptoms.

Guidelines for action

After the individual evaluation of the patients and their inclusion in one of the groups, we will proceed as follows:

- Patient with severe symptoms:
  1) Immediate referral to the doctor will be made in a safe manner, informing the patient of the need to remain at home until indicated by the doctor and of the measures to be taken to request an immediate and safe telephone appointment to ensure adequate levels of protection for contacts to prevent disease transmission.
  2) A report will be completed for the doctor and given to the patient, with the patient's details and pharmacy details, detailing the symptoms found and the reason for referral. The pharmacist will contact the primary care physician to report the case by phone.
  3) The patient will be given a copy of the survey carried out at the pharmacy.
  4) The pharmacist will provide the patient with visual material on how to act to increase their safety in the face of the disease and avoid contagion.
  5) A phone call will be made after two days to determine the patient's state of health and the measures taken.

- Patient with mild symptoms:
  1) The minor ailments service protocol will be applied.
  2) Data will be collected on the patient, the patient's treatments, the patient's health problems, and symptoms requiring minor ailments service (non-pharmacological treatment or drug without prescription). The data obtained will provide the pharmacist with relevant information on the indication and inform of whether it is necessary to refer the patient according to criteria for referral of minor symptoms.
  3) Social isolation will be recommended for symptoms compatible with COVID-19.
  4) The patient will be provided with visual material on how to act to increase their safety in the face of the disease and avoid contagion.
  5) The patient will be given a copy of the survey carried out at the pharmacy.
  6) A telephone follow-up will be carried out to determine the evolution of the symptoms (days 2, 3, 5, and 14 following the intervention) in case a later referral is necessary when serious symptoms are found.
  7) The pharmacist will contact the primary care physician to report the case by telephone.
  8) The pharmacist will remind the patient to stay at home all the time, including if symptoms remit.

- Patient with no symptoms associated with COVID-19:
  1. 1) The minor ailments protocol will be applied for minor symptoms.
  2. 2) Information will be incorporated in the case of patient compliance.
  3. 3) Measures to prevent the spread of COVID-19 will be considered, even if the symptoms are not associated with it.

Record of results

A series of indicators are suggested, with the aim of continuous improvement of the activity: number of patients who need to go to the doctor without a referral from the pharmacist/total number of consultations with indication of medication; patients whose symptoms improve in relation to the total number of patients treated; patients who would re-enter the pharmacy for the consultation service/total number of patients treated; number of consultation reports made/total number of

patients treated; and number of written indication reports given to patients/total number of patients treated.

CONCLUSION

A protocolized intervention model should be established in pharmacy offices to help fight the COVID-19 pandemic through minor ailments service to discriminate between minor symptoms and referral symptoms due to a possible case of COVID-19 so that together with the rest of the health personnel, we can help control the disease and ensure the best use of primary care consultations.

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