

Analysis of level compliance with the home isolation protocol in patients diagnosed with COVID-19

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Abstract:

In December 2019, an outbreak of a new viral infection began in Wuhan (China), the Chinese authorities identified this virus as coronavirus (COVID-19). For that reason, different public health measures were established to contain the spread of the virus. One of the strategies is the home isolation of individuals diagnosed positive for COVID-19 but who do not require hospital care. Home isolation is a restriction of activities that are usually carried out by individuals outside home, in order to reduce infections by COVID-19. The objective of this research is to analyse the level of compliance with the home isolation protocol by the caregiver of a COVID-19 positive patient. A self-prepared questionnaire consisting of three sections has been implemented to determine the level of compliance with the home isolation protocol. In the results, it is found that the protocol is carried out but not all its criteria are met.

Keywords:

Home isolation, COVID-19, home isolation protocol, SARS-CoV2

Resumen:

In December 2019, an outbreak of a new viral infection began in Wuhan (China), the Chinese authorities identified this virus as coronavirus (COVID-19). That is why different public health measures were established to contain the spread of the virus. One of the strategies is the home isolation of individuals diagnosed positive for COVID-19 but who do not require hospital care. Home isolation is a restriction of activities that are usually carried out by individuals outside the home, for which it is possible to reduce infections by COVID-19. The objective of this research is to analyse the level of compliance with the home isolation protocol by the caregiver of a COVID-19 positive patient. A self-prepared questionnaire consisting of three sections has been implemented to determine the level of compliance with the home isolation protocol. In the results it is found that the protocol is carried out but not all its criteria are met.

Palabras Clave:

Home isolation, COVID-19, home isolation protocol, SARS-CoV2

Introduction

Coronaviruses are a family of viruses that circulate between humans and animals (cats, camels, bats). Coronaviruses have been described that evolve and

develop the ability to be transmitted from animals to humans and spread between people.

The virus is genetically different from other coronaviruses, so it is considered a new virus. The Chinese health

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authorities published the complete genome of the virus as “2019 Novel Coronavirus” or “2019-CoV” [1].

In this sense, an investigation is carried out on patients who require isolation by COVID-19 at home. The research focuses on analyzing the level of compliance with the home isolation protocol provided by health personnel to relatives and patients in relation to their care during isolation at home due to a positive diagnosis of COVID-19.

To carry out this research, a comparison was made with the protocols [2, 3] of home care that are being executed and a deficiency was found in the aforementioned. For this reason, there is a series of infections on a larger scale because a large part of these home care, family members do not know how to start it properly in each patient. Taking into account that when you have proper education and care, you could stop the infections that are spreading.

The research is carried out on patients who voluntarily gave their consent, in such a way that through a quasi-experimental pilot study and with the implementation of questionnaires we will be able to evaluate the effectiveness of the home isolation protocol provided by health personnel. It is also analyzed that the protocol is adequate to the care that each patient undergoing the investigation is requiring.

The object of study is SARS-CoV-2, while the study population is patients diagnosed with COVID-19 and who require home isolation, giving as the origin of the problem a poor education of the care that must be provided when dealing with patients isolated by COVID -19.

The context of the place will be rural and urban areas of the city of Huejutla de Reyes Hidalgo, with the collaboration of health personnel from public health institutions, as well as patients diagnosed with COVID -19. A feasible scope of study is visualized to verify that the education and implementation of care and an adequate home isolation protocol for patients and their families reduces the probability of contagion.

Background

At the end of 2019, the Wuhan Municipal Health and Sanitation Commission (Hubei province, China) reported a group of 27 cases of pneumonia of unknown etiology, including seven severe cases. The onset of symptoms of the first case was recorded on December 8, 2019. On January 7, 2020, the Chinese authorities determined as the causal agent of the outbreak a new type of virus from the *Coronaviridae* family that has subsequently been called SARS-CoV-2 and that would later receive the name of COVID -19 in relation to the year of infection emergence 2 months later on March 11, the WHO proclaimed the global pandemic.

Following the unforeseen emergence of the pandemic, a myriad of problems returned. Among these problems, the

most important for a person infected with COVID -19 and with home isolation requirements is that there is a high possibility of infecting their family members. This is because at the beginning and after a year of the pandemic there are no specific protocols for this type of patient. In addition to the lack of knowledge on the part of the family about the adequate care that these patients should receive during their isolation at home. From the origin of this problem arises the need in the population to implement an adequate protocol together with the necessary care to avoid the spread of this new disease.

Isolation is a fundamental strategy for people who have been diagnosed positive for COVID -19 or have respiratory symptoms, from those who are healthy. Over time, these types of preventive measures have been applied to many diseases, since the purpose is to restrict the movement of people who are infected, in order to prevent the spread of the disease.

The mechanism of human-human transmission with respect to accumulated scientific evidence, it is considered that SARS-CoV-2 can be transmitted person-to-person by different routes [4]. The route of transmission mechanism is through droplets or by contact, as well as the airway during procedures that can generate aerosols [5]. Based on previous knowledge about the transmission mechanism of the virus, it can be inferred that the adaptation of a new protocol together with the necessary care that should be implemented in all patients in home isolation would be a great strategy to minimize the probability contagion in the families of isolated patients as well as the spread of the virus in the rest of the population. On the other hand, the Spanish Ministry of Health [6] carried out an outline of the main recommendations for home isolation in mild cases of COVID-19, the first section shows some of the specifications of the place where it is carried out home isolation. The recommendations include the following: staying at home avoiding leaving the room, keeping distance avoiding distances less than two meters, restriction of visits, use of own bathroom, if shared it must be disinfected for later use, as well products for hand hygiene must be kept in the room and there must be a garbage container exclusively for the room. The products discarded in this container must be placed in a well-knotted bag.

Within this protocol it also includes technical specifications of personal protection for the caregiver, who is the person responsible for the care of the patient who performs home isolation. It should be added that the caregiver will also carry out a 10-day quarantine with justification of have been in direct contact with the patient.

While in the United States (CDC) released information on the prevention and management of COVID-19 for isolation or quarantine. The isolation must be carried out, since a person was in contact with a person with confirmed

COVID-19, the person will have to remain alert to the appearance of symptoms that could be generated until the 10th day after the last contact with a person with COVID-19 during these days a face mask is used, it is important to mention that you should isolate yourself if you are sick and have a COVID-19 test that confirms it, even if there are no symptoms. If symptoms occur, they should immediately isolate and get tested and stay home until the results are back.

On the other hand, in Mexico, the Secretary of Health (SS 2020), discloses information on prevention and control measures for respiratory infection by COVID-19, in home isolation, through a manual called "Infection Prevention Process for People with COVID-19 (SARS-CoV-2 disease) Contacts and Health Personnel". This protocol contains very useful general recommendations for the population that include hand hygiene with soap and water, as well as hand hygiene using hand sanitizer with an alcohol concentration of 60-80%. It is also mentioned that in case of presenting symptoms, one must remain at home until their resolution, using mouth covers and following safety guidelines to prevent contagion at home.

If it is not possible, and medical attention is required, a sneeze tag should also be used, as well as wearing a face mask, people who need medical attention will be transferred to their care unit following the aforementioned guidelines such as. For example: everyone who goes to check-up for respiratory symptoms must use respiratory and sneezing etiquette during the transfer from their home to the care unit, upon admission and in the waiting room, perform hand hygiene and avoid public transport. On the other hand, for people who return from active transmission areas or are contacts of suspected cases of COVID-19, it is recommended to stay at home for 14 days (after the last contact) even if they are asymptomatic.

Likewise, investigations were found where the isolation protocol is analyzed. In Indonesia, the local government has made various efforts to reduce the spread of the COVID-19 virus. In particular, by enforcing public health regulations, protocols such as physical distancing, prohibition of going to the city of origin for visits, quarantine system, use of face masks, implementation of the correct hand washing technique and temperature measurement stand out in all places to limit community activities [7]. A qualitative method was used in the research procedure. Data was collected through in-depth interviews with 12 participants, comprised of community, village officials, and health workers selected using the purposive sampling technique. The instrument used was an interview guide, in addition, unstructured observations were made to identify the needs of the community. Based on the results of this study, it is expected that it can be used as evaluation material for the community and local government in the

implementation of health protocols to prevent the spread of the COVID-19 virus in the Temanggung region.

The creation of a new protocol will be possible due to the research that will be carried out by integrating new procedures that will favor existing protocols. In such a way that it will be much more useful and understandable for all people. If sick and non-sick people carry out all the recommendations that will be determined in the new protocol, there will be a great decrease in the replication of the virus and in this way there will be fewer cases, deaths will reduce and together with the implementation of the new vaccines we will be able to get out of the pandemic we are currently experiencing faster.

Vaccine is understood as any preparation that is intended to generate immunity against a disease by stimulating the production of antibodies, vaccines have proven to be very effective drugs for the control of infectious diseases [8]. For this reason, since the beginning of the appearance of this new SARS-CoV-2 virus in humans, many initiatives have been launched with the intention of developing safe and effective vaccines for the population as quickly as possible. But the arrival of vaccines has been limited due to the large number of people around the world, which is why this long-awaited arrival by humanity has not ended the problem, therefore, the implementation of a protocol is intended to contribute in slowing the spread of the virus.

It should be noted that additional measures [9, 10, 11, 12, 13, 14, 15] have been taken to implement isolation protocols in order to care for patients diagnosed positive for COVID-19.

Methodology

A quasi-experimental pilot study was carried out, to a determinate population participant. They are COVID-19 diagnosed patients.

The target population was concentrated in patients from public institutions and who had the characteristic of home isolation, that is, they did not need hospitalization during the recovery period from COVID-19. The sample consists of 30 patients diagnosed with COVID-19 and that the home settlement was necessary following the recommendations instructed in the medical unit. An instrument was designed to respond to the implementation of the isolation protocol provided by the staff of each medical unit. The instrument is made up of three sections. The first part consists of collecting sociodemographic data. In the second section, it is necessary to recognize the level of socialization of the home isolation protocol that the patient's caregiver received due to COVID-19. Finally, in the third part of the instrument, an analysis of the application of the isolation protocol during the care of the patient with COVID-19 is carried out. It is important to mention that, prior to the application of the instrument, informed consent was approved for each subject in the sample.

Results

In the present research, the application of a questionnaire was carried out that would allow analyzing the level of compliance with the home isolation protocol provided by health personnel to relatives and patients in relation to their care during home isolation due to a positive diagnosis of COVID-19.

The results of the application of the self-prepared instrument are described below.

First, a validation was carried out to determine if the COVID-19 patient was under surveillance at home.

Figure 1 shows that 43% were always under surveillance by a caregiver, 27% were generally under care, 17% occasionally, and 10% were never under surveillance.

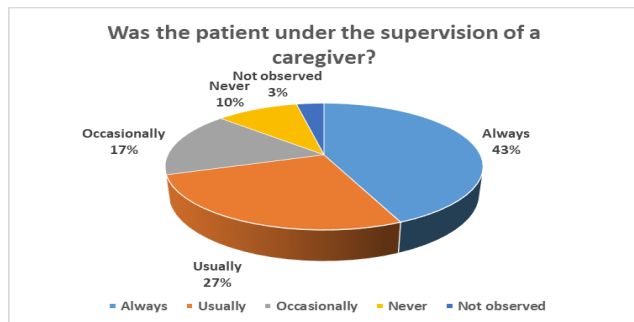


Figure 1. Patients under domiciliary surveillance.

In the case where the patient was asked if he received help throughout the isolation from the caregiver.

Figure 2 shows that 47% mentioned that Always, 27% mentioned that generally, 10% indicated that occasionally, while 13% indicated that Never, and 3% highlighted Not observed.

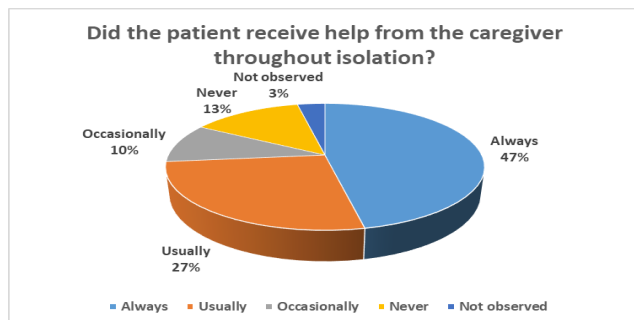


Figure 2. Patient who received help during isolation.

According to the home isolation protocol, one of the instructions is the restriction of visits to the home of a COVID-19 positive patient.

Figure 3 shows that 76.7% of those surveyed restricted visits to the home, while 23.3% did not.

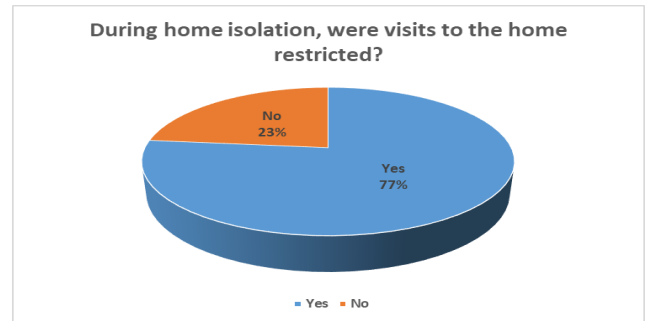


Figure 3. Restriction of home visits.

Is essential de hand washing process during the care of the COVID-19 positive patient. Handwashing options were before and after patient contact, before preparing food, and after cleaning in the positive patient's room. Figure 4 shows the following results. 57% chose before and after patient contact as an option, 23.3% chose all options, 10% chose before preparing food and before and after patient care, 7% only chose before preparing food, 3.3% chose to wash their hands after cleaning.

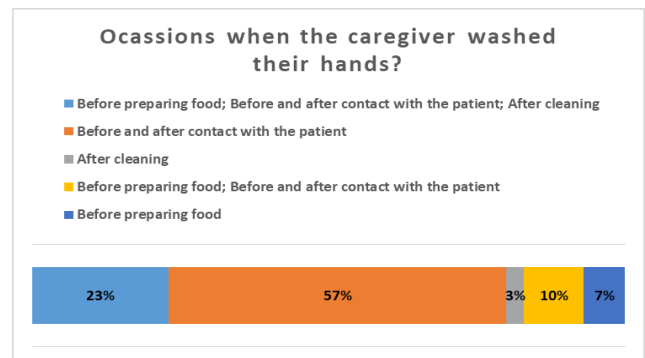


Figure 4. Hand washing during patient care.

Another aspect to take into account during home isolation is the use of personal protection during the care of the COVID-19 positive patient.

Figure 5 shows results referring to all the protective equipment recommended in the isolation protocol. Most of the caregivers used only mouth covers, which represents 40%; 13% did not use any protective equipment; another 13% used glasses, a face mask and a gown; 7% used glasses, face masks and other; the other 7% used glasses and face masks; while 3% used only a gown and another 3% used a mask and gown.

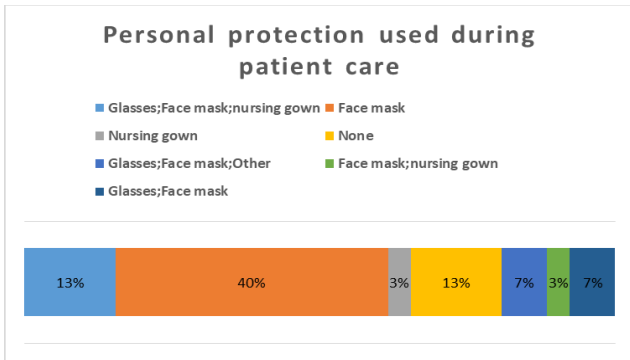


Figure 5. Protective equipment used during patient care.

During the period of home isolation, it is necessary to clean the space where the COVID-19 positive patient is isolated. The result of this practice is shown in Figure 6, where it can be seen that 80% did the cleaning permanently, while 20% did not do it constantly.

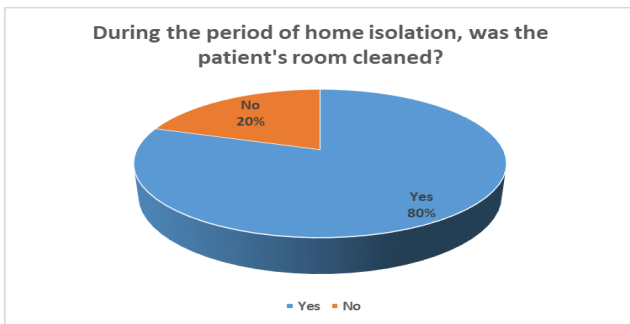


Figure 6. Cleaning of the isolation room.

During the isolation period, disinfection must be carried out in areas with a higher risk of contamination, that is, those areas where the COVID-19 positive patient has contact during isolation. The consultation was carried out to identify the effectiveness of the execution of the disinfection technique in the areas of door handles, bathrooms, etc.

Figure 7 shows that 77% did apply the disinfection technique, but 23% did not do it properly.

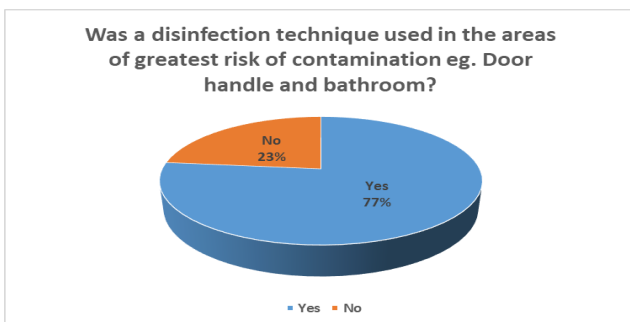


Figure 7. Application of disinfection technique of risk areas.

Another important aspect to prevent the spread of the COVID-19 virus is the correct handling of waste generated by the patient. In this case, Figure 8 shows that 80% of the respondents correctly disposed of the garbage generated, and 20% did not apply the strategy mentioned in the home isolation instructions.

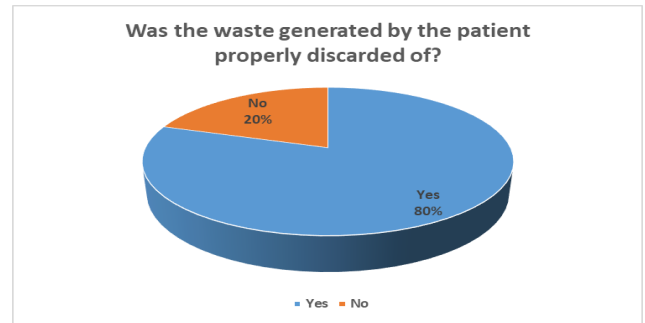


Figure 8. The waste generated by the patient was properly discarded.

Finally, in order to know the caregiver's perception regarding the correct application of the home isolation protocol, the consultation was made. *Do you think you correctly applied the instructions for home isolation?*

Figure 9 shows that 87% believe they have carried out the isolation protocol correctly, while 13% mention that they did not.

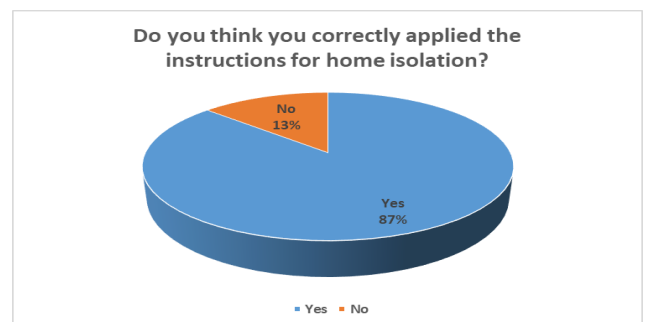


Figure 9. Perception of instructions for home isolation carried out.

Conclusions

This research arose from the need that existed at the beginning of the COVID-19 pandemic in relation of home isolation in positive patients. The creation of the isolation protocol for patients with COVID-19 was developed so that people who require home isolation receive adequate care and that during their isolation they do not infect any member of their family and thus prevent the spread of the virus. When contagion levels are reduced, it will be possible to prevent the most vulnerable people, such as older adults, people with comorbidities, from running the

risk of becoming infected and at the same time running the risk of not surviving.

The home isolation protocol for COVID-19 is presented in a better understandable way for the population, so that they can have access and implement it if required at any time. Currently, a large part of the population has died due to lack of knowledge and ignorance of how to treat their relatives who have contracted the virus. When family members know the home isolation protocol, it could prevent contagion between the infected person and the rest of their family.

The research presented was aimed at analyzing the level of compliance with the home isolation protocol by caregivers of COVID-19 positive patients who required to be isolated in their own homes.

In the results it can be seen that the caregivers made moderately correct use of the home isolation protocol. As explained in this section, the correct execution of the protocol allows the spread of COVID-19 to be reduced in family members.

It should be noted that it is vitally important that, when explaining the protocol to family members, it is important to emphasize carrying out each of the activities as described in the protocol. By taking this measure, it will be possible to reduce the spread of the virus among family members.

References

- [1] Song, F., Shi, N., Shan, F., Zhang, Z., Shen, J., Lu, H., ... & Shi, Y. (2020). Emerging 2019 novel coronavirus (2019-nCoV) pneumonia. *Radiology*.
- [2] Alcázar-Aguilar, O. O., Gil-Cueva, S. L., Rodríguez-Vargas, M. C., Cebrian-Centeno, E. L., & Castro-Yanahida, J. E. (2021). Recomendaciones dirigidas a los familiares responsables del cuidado domiciliario de un paciente diagnosticado con Covid-19. *Revista Peruana de investigación en Salud*, 5(1), 40-49.
- [3] de Salud Pública, S. PROTOCOLO DE MANEJO DE CONTACTOS DE CASOS COVID-19.
- [4] Daniel, J. (2020). Education and the COVID-19 pandemic. *Prospects*, 49(1), 91-96.
- [5] Trujillo, C. H. S. (2020). Resumen: Consenso colombiano de atención, diagnóstico y manejo de la infección por SARS-COV-2/COVID-19 en establecimientos de atención de la salud. *Infectio*, 24(3).
- [6] Sanitarias, C. d. (2020). Enfermedad por coronavirus, COVID-19. España: Ministerio de sanidad, 14.
- [7] Waliyanti, E., Sulistiyaningrum, A., Oktariza, A., Nurrahaf, S. H., & Satria, F. E. (2021). Determinants factors affecting the implementation of the COVID-19 health protocol in the community. *Bali Medical Journal*, 10(3), 1058-1065.
- [8] World Health Organization (WHO). (s/f). Vacunas e inmunización. Recuperado el 5 de octubre de 2022, de https://www.who.int/es/health-topics/vaccines-and-immunization#tab=tab_1
- [9] Saavedra Trujillo, C. H. (2020). Consenso colombiano de atención, diagnóstico y manejo de la infección por SARS-COV-2/COVID-19 en establecimientos de atención de la salud. Recomendaciones basadas en consenso de expertos e informadas en la evidencia. *Infectio*, 24(3), 186-261.
- [10] Abad-Corpa, E., Sánchez-López, D., & Moreno-Casbas, M. T. (2021). Scoping review sobre las recomendaciones para el aislamiento domiciliario en la pandemia de COVID-19. *Enfermería Clínica*, 31, S94-S99.
- [11] Ortega, J. & Gonzales, J. M. (2020, 3 abril). La enfermería en tiempos de la COVID-19: un relato de dos enfermeros de práctica avanzada desde el frente de la pandemia. OPS/OMS | Organización Panamericana de la Salud.
- [12] Barriuso C. Elena, Rojas G. Ana, Ariza S. Albert, Simó C. Gemma, Chaves V. Raquel, Romaguera T. Rafael, Jiménez M. Emilio, Gutiérrez M. M. Carmen, Burgos G. Caridad, Teruel G. L. Miguel & Chacón A. Araceli (2000). Actualización y recomendaciones en los cuidados al paciente cardiovascular durante la pandemia de COVID-19. *Cardiac Nursing Today*, 27 (79): 13-24.
- [13] Mancilla R. J. & Leija H. C. (2020). Recomendaciones para el cuidado de enfermería a la persona hospitalizada por covid-19. Secretaría de Salud. Gobierno de México
- [14] Guerrero A. Jorge, Vital v. Guillermo, Ávila F. Franceli, Gutiérrez V. Daniel, López C. Lilia, Martínez A. Miguel, Cuellar G. Norma, Ortiz J. Edgar & Jiménez C. Oscar (2020). Guía de práctica clínica: covid 19.
- [15] Rangel González, E., Llamosas-Rosas, I., & Fonseca, F. J. (2021). Aislamiento social y el COVID-19 en las regiones de México. *EconoQuantum*, 18(2), 1-22.