

# COVID-19 AND CHRONIC DISEASES: IMPACTS AND DEVELOPMENTS BEFORE THE PANDEMIC

## COVID-19 E DOENÇAS CRÔNICAS: IMPACTOS E DESDOBRAMENTOS FRENTE À PANDEMIA

## COVID-19 Y ENFERMEDADES CRÓNICAS: IMPACTOS Y LOS ACONTECIMIENTOS VENIDERS A LA PANDEMIA

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**Objective:** to reflect on the high risk of complications of COVID-19 in people with chronic non-communicable diseases, as well as the possible consequences for those affected by the disease. **Method:** narrative review, developed based on articles published in journals and documents of official national agencies. **Results:** the study allowed the reflection about the vulnerability of people with chronic diseases in the context of the new coronavirus pandemic, as well as the impacts to this population. This scenario substantially impacts health services, and highlights the need for a differentiated attention regarding the prevention measures. **Conclusion:** the current scenario presents itself with many challenges for the population, which requires self-care actions and meetings preventive measures aimed at the individual and collective safety.

**Descriptors:** Covid-19. Pandemic. Chronic Disease.

*Objetivo: refletir sobre o elevado risco de complicações da COVID-19 em pessoas portadoras de doenças crônicas não transmissíveis, bem como os possíveis desdobramentos para aqueles acometidos pela doença. Método: revisão narrativa, desenvolvida com base em artigos publicados em periódicos e documentos de órgãos oficiais nacionais. Resultados: o estudo permitiu a reflexão acerca da vulnerabilidade das pessoas com doenças crônicas no contexto de pandemia pelo novo coronavírus, bem como os impactos para esse público. Esse cenário impacta substancialmente nos serviços de saúde, e sinaliza para a necessidade de uma atenção diferenciada no que tange as medidas de prevenção. Conclusão: o atual cenário apresenta-se com muitos desafios para a população, o que requer ações de autocuidado e atendimento às medidas de prevenção que visem ao resguardo individual e coletivo.*

*Descritores: Covid-19. Pandemia. Doença Crônica.*

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*Objetivo: reflexionar sobre el alto riesgo de complicaciones de la COVID-19 en personas con enfermedades crónicas no transmisibles, así como las posibles consecuencias para los afectados por la enfermedad. Método: revisión narrativa, desarrollada sobre la base de artículos publicados en revistas y documentos oficiales de organismos nacionales. Resultados: el estudio permitió la reflexión acerca de la vulnerabilidad de las personas con enfermedades crónicas en el contexto de la pandemia del nuevo coronavirus, así como los impactos de esta población. Esta situación repercute considerablemente en los servicios de salud, y señala la necesidad de una atención diferenciada con respecto a las medidas de prevención. Conclusión: el escenario actual se presenta con muchos desafíos para la población, que requiere acciones de autocuidado y el atendimento a las medidas preventivas encaminadas a la protección individual y colectiva.*

*Descriptores: Covid-19. Pandemia. Enfermedad Crónica.*

## Introduction

Since the emergence of COVID-19, the number of cases has grown exponentially with impacts on society, economy and health of individuals. Its most severe form reaches some vulnerable groups, such as bearers of chronic non-communicable diseases (CNCD), which points to the need for discussion about this group, in order to understand and overcome the numerous challenges that permeate this scenario.

Contextualizing, COVID-19 is an infectious disease caused by the SARS-CoV-2, a new coronavirus identified in China, in December 2019. Before the pandemic scenario, announced in March 2020, few studies were carried out, which have identified that people with weak immune system comprised the risk groups. These groups include bearers of CNCD, such as patients with a diagnosis of heart diseases, hypertension, diabetes, chronic obstructive pulmonary disease (COPD), renal and neurological diseases<sup>(1-3)</sup>. Such risk groups relate to indexes of worsening mostly present in this population.

Being the bearer of CNCD has been related to high rates of morbidity and mortality when associated with infection by SARS-CoV-2. In Brazil, the people who progressed to death by COVID-19, 70% were carriers of CNCD; between these and those who had recovered, the majority needed hospital beds in the Intensive Care Unit (ICU)<sup>(4)</sup>. It is worth remembering that, in addition to the association between the prevalence of severe cases of COVID-19 and the presence of CNCD, new complications can occur in individuals without history of these

diseases, since there is still no comprehensive information about the natural history of infection by SARS-CoV-2, nor ideal clinical managements to meet patients in all their clinical characteristics.

One of the actions taken to contain the spread of the disease consists of social isolation, which is dividing opinions by the high impact caused by this measure on society, depriving the people to come and go, and especially on the economy. However, the incidence rates of COVID-19 are maintaining relatively lower than expected, precisely due to the implementation of these measures. Studies suggest that if there was no social isolation, the index of contamination of the world population could reach a range from 60% to 80%, as stated by one of the main epidemiologists from Hong Kong, Dr. Gabriel Leung, in a meeting with the World Health Organization<sup>(5)</sup>. In addition, the non-obedience to such strategies puts at risk not only the life of individuals but also of the entire community around him/her, which affects healthy people, with major impacts on those who have preexisting diseases, a situation which, in its turn, overburdens the health services.

Therefore, discussing the care with the population is necessary in order to prevent the spread and transmission of SARS-CoV-2, especially in patients with chronic pathologies, in view of all the challenges and consequences resulting from this process.

Thus, the objective of this essay is to reflect on the high risk of complications from COVID-19 in people with chronic non-communicable

diseases and their consequences in the general population, with an emphasis on the care.

## Method

This is a narrative review, developed based on articles published in journals and documents of official agencies. This method allows describing the state of the art, in order to synthesize the knowledge already exposed in literature, added to the reflections proposed by the authors. This methodology contributes to the discussion on a topic and is indicated for themes that require greater depths, like COVID-19.

## Results and Discussion

The study allowed reflecting about the vulnerability of people with chronic diseases in the context of the new coronavirus pandemic, as well as the impacts to this population. This scenario substantially impacts health services, which highlights the need for a differentiated attention regarding preventive measures.

### *The vulnerability of chronic disease before the infection by the new coronavirus*

The CNCD cover, in addition to cancer, other diseases that affect the respiratory, cardiovascular, endocrine and renal systems, configuring as one of the main causes of morbidity and mortality in the world. Analyzing the perspective of indices of transmission and worsening of infection by SARS-CoV-2, recent epidemiological studies have shown that people with hypertension, diabetes, chronic obstructive pulmonary disease and renal diseases have a greater probability of developing the most severe forms of COVID-19, resulting in higher rates of morbidity and mortality in this population<sup>(6)</sup>. There is need to understand the physiology, social and economic determinants, in order to create prevention and coping strategies for this population group.

Regarding the pathophysiological mechanism, associated with the worsening of infection by SARS-CoV-2, notably, although there is

no high-level evidence, the participation of angiotensin-converting enzyme-2 (ACE2) has been pointed out in endothelial cells. This enzyme is present in the heart, kidneys and lungs, being the main responsible for the entrance of the new coronavirus in cells of the infected person, upon the activation of glycoproteins and the cleavage of ACE2 by proteases<sup>(7)</sup>. Thus, the positive adjustment of this enzyme occurs in patients with cardiovascular diseases, diabetes and hypertension under treatment with ACE2 inhibitors and type-I angiotensin II receptor blockers, contributing to the exponential growth of infected cells and the rapid evolution of COVID-19 in this population<sup>(7)</sup>. Furthermore, individuals who live with COPD and poorly controlled asthma also have increased possibility of aggravation of infection by the new coronavirus, since this group already shows weaknesses in the respiratory system, which is the main target of attack of SARS-CoV-2 in more severe forms of the disease.

In addition to biological factors, the high rate of CNCD in Brazil is largely related to the lifestyles adopted by the population, and there is interference of social determinants and economic factors. In Brazil, as well as in most developing countries, the high rate of prevalence of CNCD reveals that these diseases strike indiscriminately people belonging to any social class, gender, race/ethnicity and age, affecting more intensely vulnerable groups linked to low education levels, poverty and black race. This fact demonstrates that, in a country marked by social inequality, not only pathophysiologic characteristics influence the worsening of infection by the new coronavirus, but also the social markers. These differences may act as a risk factor for the process, being of fundamental importance the formulation of policies for this group of greater social, economic and health vulnerability.

In this way, health education actions need to be thought, towards life habits and balanced and healthy eating, physical activity and continuous medication use to control chronic diseases. However, this is not the Brazilian reality due to the low level of schooling, work in unhealthy

environments with insufficient remuneration, and difficulty to eat at least three meals a day. This entire scenario of socioeconomic inequality is still aggravated by the difficult access to health services, due to the low coverage of basic care and failures in the organization of the care provision.

In this sense, the health demands of this population cannot be met in a comprehensive, fair and universal way, going against the principles established by the Unified Health System (UHS). With health needs neglected, the quality of life of disadvantaged groups tends not to be the best, leading to a greater prevalence of chronic diseases that weaken the body and the immune system. Thus, in a context of a COVID-19 pandemic, ensuring access to health services and information, providing basic conditions for education, housing, employment and eating result not only in improving the quality of life of this group, but also in the reduction of contamination of individuals and in lower burden to the health care system.

#### *Physical, psychological and social impacts of COVID-19 on bearers of chronic diseases*

Considering the bearers of CNCD as a risk group for the COVID-19, as indicated by the Ministry of Health, one should reflect on the physical, psychological and social impacts on that group when infected by the disease.

The scenario, by itself, brings a mixture of feelings to the population as a whole, but, in the case of the chronically ill, they are increased by uncertainties and potential aggravation. Some symptoms such as depression, anxiety, sleep disorders, among others, may be perceived. Moreover, there may be the somatization of these psychological symptoms, leading to headache, epigastralgy, tachycardia, lack or excess of appetite and other clinical manifestations that make, not just passing through the pandemic, but also the process of isolation even more painful. The emergence of these psychological and physical symptoms form a favorable scenario for the instability of physiological mechanisms

of the organism, bringing consequences, such as increased blood pressure, elevation of blood glucose levels and the greater occurrence of asthma, which aggravates the picture of those who already have chronic diseases.

The fear of being infected by SARS-CoV-2 generates challenges in some patients with chronic diseases, such as the need to leave their homes. Going to work, buying supplies and, especially, acquiring medications of continuous use lead these individuals to fear for their own life and the health of their closest contacts. In the context of a pandemic, the elective consultations had to be suspended, only meeting the cases of urgency and emergency. Since this follow-up is not an emergency, many patients have their consultations and exams canceled, which interferes directly in the supervision and control of the disease, making this population even more vulnerable. In this way, there is an urgent need to reorganize health services before situations of public calamity, such as the one we are facing, providing options for health monitoring and care, appropriate to the reality of each person.

Considering the different impacts for patients with chronic diseases, the Brazilian government outlined some actions in order to minimize the spread of the disease, such as the extension of the expiration date of prescription of drugs of continuous use for six months, decreasing the transit with this purpose. The orientation of the use of masks for the general population has contributed to the protection of vulnerable groups, in addition to the guidance of distancing people with comorbidities from their in-person labor activities and the possibility of denouncing institutions that provide basic working conditions in this context. Despite the already adopted measures, there is need to discuss the challenges of health services in their different care levels to this population segment.

#### *Challenges for health service in their different care levels*

The high prevalence of CNCD in the Brazilian scenario reveals the need for specific measures

focused on this population to protect individuals and prevent the collapse of the health care network. In this context, the Ministry of Health (MOH) published protocols for clinical management of COVID-19 with guidelines for the assistance and monitoring of this risk group. The Primary Health Care (PHC) was inserted in this context with some objectives, such as meeting the cases considered mild and stabilizing and referring the most serious cases of COVID-19. Nevertheless, its power of action can be exercised through the monitoring of patients with chronic diseases living in its registered areas through tele-service or visits in exceptional situations. Thus, several strategies need to be developed for the greater range of health surveillance of these patients with risk, thus configuring as a care focus from the PHC managers.

The articulation necessary to put into practice these strategies will be coordinated mainly by the nurses due to their potential administrative and managerial skills, which place them in the role of leadership and management of activities of community health workers (CHW). In view of the extension of the health unit in the community as the work essence of CHW, actions for monitoring of patients with chronic diseases becomes a priority in relation to the appearance of signs and symptoms of COVID-19, aiming at the rapid intervention of the health team and the consequent reduction of complications caused by delayed care with those patients. Unfortunately, all that power is not available for use, since there are limitations, such as the low coverage of the Family Health Strategy (FHS) and poor dimensioning of teams, in addition to the population segment that is unaware of the diagnosis and, therefore, does not perform the treatment, being even more vulnerable to complications by COVID-19.

In this context of increased demand, in order not to overburden even more the health system and to prioritize the user's call, it is important to perform the Risk-Classifying Embrace (ACCR). The attention should focus on respiratory symptomatic patients at the three care levels, however further extending the view in relation to

risk factors that contribute to the complications of COVID-19.

In this way, it is possible to streamline the care within the unit itself or the referral to a service of greater complexity. Specifically within the secondary care, there is need to rethink a differentiated call flow in emergency care units, to avoid the intersection of patients with respiratory symptoms with others. This organization is of extreme importance for the protection of patients with CNCD that require health care in those units, either by decompensation of clinical signs or any other reason.

The need for specific care in this pandemic can bring us as legacy the possibility of new structural drawings for the health units that facilitate the flow of access and treatment of potentially infected patients, without renouncing to the conquest of the only door in health establishments, originated with the UHS.

Those actions, as well as the implementation of other guidelines recommended by the Ministry of Health, may be hampered by the scarcity of personal protective equipment (PPE) and deficiencies in the physical structure. In this way, the management team of the health unit requires maximum commitment, according to the possibilities, not to allow the health unit to become a focus of contamination. New creative and problem-solving examples of successful experiences should be outlined in both the care with patients with coronavirus as the protection of other patients, with attention to the most vulnerable, in units with service not exclusive to COVID-19.

Not differently from other levels, the specialized care also faces challenges for the assistance to coronavirus patients with comorbidities. There is need for a multidisciplinary team for the comprehensive and individualized care with patients with chronic diseases to evaluate the maintenance of therapy already used by the patient and the possible drug interactions. In addition to the association with comorbidity, which makes patients vulnerable to infection by COVID-19, there is a possibility of exacerbation of CNCD in a cyclical movement, leading to

complications and difficulties in the management of those patients.

New researches should be developed for the clinical management performed in those patients in order to present effectiveness and contributions to the fast and safe clinical stabilization. To minimize the complications for this population group, the MOH advises the continuous monitoring and support measures necessary for the situation presented.

In this sense, nursing is essential in providing care to patients since it monitors them closely and performs the control of vital signs systematically in its work routine. Understanding the early identification of signs and symptoms presented by the patient for a favorable outcome is of utmost importance for a clear and effective communication between the multidisciplinary team.

The study is limited by the own context, which, before incipient studies, does not allow advancing in discussions about all the impacts that may be generated for healthy individuals or patients with comorbidities. In this context, there is a need for new reflections about the association of COVID-19 with the chronic diseases, or even with the development of other diseases arising after the recovery from this infection.

## Conclusion

Before the pandemic scenario and concerns with the worsening of COVID-19 to the bearers of CNCD, there stand out the discussions about the impacts and possible developments. The current scenario presents itself with many challenges for the population, which requires self-care actions and meeting preventive measures aimed at the individual and collective safety. The adoption of such acts contributes to reducing the probability of the disease reaching vulnerable groups and, in turn, decreases the rates of morbidity and mortality, a coping strategy that must be embraced by society.

The collective measures do not only affect the community, but impose responsibilities to government agencies to structure prevention and coping actions. Thus, the public management

is responsible for organizing priorities, giving attention to the public at risk, in order to preserve life, and avoid overburdening public services. Above all, this challenge encompasses the health area, which needs to structure its network to meet the population and promote health. These actions can be potentiated with the qualification of professionals, especially nurses, who have, in essence, the actions of health education.

The reflections proposed in this work are believed to cooperate for the expansion of the gaze to the chronically ill, while risk group, and thereby improve the care actions aimed at this population. In addition, the understanding about the correlation of the new disease with the comorbidities is expected to favor the design of assertive and efficient guidelines for the clinical management of patients with chronic diseases, infected by the virus, or, yet, prevention strategies for the general population.

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