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THE CHALLENGES OF THE PANDEMIC SCENARIO AND HEALTH LITERACY: A BIOPSYCHOSOCIAL APPROACH FOR ANALYSIS OF COVID-19 CONCEPTS IN THE CONTEXT OF THE BIOCEANIC ROUTE

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Abstract: The emergence of the Covid-19 pandemic and all its transmission dynamics elucidated the importance of self-care and the role of each citizen in containing the spread of the disease. In the particular scenario of Covid-19 in Brazil, with strong economic disparities, wear and tear on the health system and political crisis, popular health education was compromised and the level of health literacy of each citizen proves to be decisive for the necessary understanding about of the new coronavirus and the promotion of self-care in the face of this disease. In this sense, this work aims to describe the results of a scientific initiation project, of a qualitative nature and of an exploratory and interpretative nature, which aimed to analyze the level of health literacy and the implications of an approach using multimodal language in questions involving Covid-19 in truck drivers who commonly travel along the Bioceanic Route. With the concept of emergency epistemology, proposed by Margaret Sommerville, interviews were carried out with around 11 truck drivers who travel on the Bioceanic Route, in which it was possible to discuss concepts and analyze the level of health literacy related to Covid-19 in the researched population. With this study, we glimpsed the perceptions of the truck driver population regarding the main topics in relation to Covid-19, even though a portion of those interviewed had few years of study, it was considered that the majority of research participants had a level of literacy in Health appropriate in relation to the dynamics of the disease.

Keywords: Health Literacy; Covid-19; Pandemic.

INTRODUCTION

In December 2019, China announced to other nations the emergence of a new coronavirus with pandemic potential that had triggered numerous cases of a respiratory disease and that was seriously worrying local health authorities in the city of Wuhan. Since then, SARS-CoV-2 (scientific nomenclature of the virus) has reached a high level of contamination and dissemination in various parts of the globe, assuming pandemic characteristics and ravaging health systems and the main world economies (MINISTÉRIO DA SAÚDE, 2020). Therefore, the evident humanitarian, economic and public health crisis at alarming levels that took place on the planet in 2020, found in Brazil a particular scenario and potential for strong economic dichotomies, social inequality, difficulties in accessing public health, standards of behavior favorable to the spread of the virus, political crisis and a harmful and articulated practice of disseminating misinformation and fake news, which left the Brazilian population even more vulnerable to contamination by Covid-19, thus contributing to the country's pioneering role in the scenario global epidemiological analysis (MOREL, 2021). In fact, the set of challenges mentioned above represented a scenario for the Brazilian nation that created doubts and even greater skepticism among citizens. This occurred because the basic instructions for biosafety, hygiene and social isolation, essential to contain the spread of the disease, were passed on to the population, resulting in disagreements between political authorities, false information networks on the main social networks and anti-scientific stances by numerous public authorities. and personalities, which further undermined the conduct and recommendations of scientific entities to contain the disease (CAPONI, 2020). As a result, polarization in various sectors of society and scientific denialism gaining strength in the social fabric solidified a major barrier to popular health education, contributing to neglect, unpreparedness and mistaken knowledge regarding the disease (MOREL, 2021). It is within this particular context of the Covid-19 pandemic in Brazil, that the importance of proper understanding by citizens of the concepts and information that was passed on in relation to Covid-19 was glimpsed, which, from the perspective of epistemological discussions, shows It is fundamental for popular health awareness and appropriate conduct in relation to the coronavirus. In this logic, the importance of health literacy is highlighted for a deep analysis of the relationship between the health-disease binomial with individuals and their communities. In its etymology, health literacy is defined, according to the definition of Cordeiro and Sampaio (2019, p. 2), as:

> (...) set of knowledge, motivations and skills to access, understand, evaluate and apply information in order to judge and make everyday decisions in disease prevention and health care and promotion, maintaining or improving quality of life.

Given this concept, citizens who have a somewhat low level of health literacy may have difficulty accessing, understanding and operationalizing health instructions from professionals, labels, leaflets, prescriptions, informative inserts and other models for health literacy. promoting self-care and disease prevention, which directly impacts your quality of life (BARBOSA AND MACIEL, 2019). This perspective of health literacy gained prominence in the Covid-19 pandemic, as not only the preparation of health systems became necessary, but individual preparation proved to be crucial so that important behavioral changes were adopted immediately to delay the transmission of the virus (PAAKKARI; OKAN, 2020). However, many studies reflect the problem

of low health literacy being underestimated globally, in which, in many regions of the planet, such as Europe, a large proportion of adult's report having serious problems in relation to low health literacy, which makes it impossible to develop full skills for the individual to take care of their own health and that of others (PAAKKARI; OKAN, 2020). Given this, considering communication as a primary health strategy, health literacy carried out through effective, concise and quality information decisively represents a promising artifact to overcome health problems in times of crisis, in order to contribute to people, make decisions for themselves, their families and their community (RUDD, 2020).

As a strategy to promote health literacy and as a way for guidance from professionals to make sense to patients, the use of multimodal language is proposed as an important artifact at the interface of language and health. The concept of multimodality is defined by Adami (2017 apud PEREIRA; MACIEL, 2019, p. 2676) as a way of using different language resources with the aim of constructing meanings, exemplifying with the use of figures, photos, videos, inserts and other means, which may be associated with the speech and gestures of those who are passing on the information. In this sense, the various modalities of language can be an instrument not only to expand the perception of health professionals and researchers in relation to patients, users of the health system and researched public, but also to negotiate concepts and be able to guide them accordingly. the literacy level of each citizen. Based on the above, this study consisted of establishing a transdisciplinary look at the health and language interface to analyze issues involving the degree of health literacy of those surveyed and the impact of the current pandemic scenario, in addition to applying the multimodality of language in order to convey information

solid and quality solutions in order to expand knowledge by individuals so that they have greater autonomy in decision-making. To this end, municipalities on the Latin American Integration Route were chosen as the research location, with the aim of analyzing the aforementioned issues in the truck driving population. The Latin American Integration Route is a bioceanic route that will connect important commercial and industrial centers, adjacent areas, regions that supply food and raw materials, being a major commercial strategy for interconnection between the Atlantic and Pacific oceans (SUNAKOZAWA, 2019). In addition to the commercial scope, the route comprehensively represents a strong social, tourist and educational exchange, being important for the socioeconomic dynamics of Mato Grosso do Sul (SUNAKOZAWA, 2019). Framed from the perspective of the bioceanic route, as it is an important road network under construction, the role of truck drivers in the development of this integration route is elucidated, in addition to constituting the population studied in this research. Analyzing the profile of these drivers, according to the latest survey by the National Transport Confederation, it was observed that the average age of truck drivers was around 45 years old, and in terms of gender, almost all were male, with more than 99% of them being male. according to the study. Regarding the income of these truck drivers, around 68% had an income of up to 5 minimum wages. Regarding education, more than 50% only attended elementary school. (NATIONAL TRANSPORT CONFEDERATION, 2019). Given the above, considering that factors such as low education, socioeconomic vulnerability and advanced age are some of the risk factors for low health literacy (NAVARRO-RÚBIO et al, 2016), it was assumed, a priori, that this population could present any impairment in relation to their level of literacy. Therefore,

this study allowed a valuable understanding of the concepts of Covid-19 that truck drivers have as premises and the use of multimodality as a strategy for negotiating these concepts, providing an expanded understanding of the impact of health literacy on the promotion of self-care involving the issue of the new coronavirus.

OBJECTIVE OF THE STUDY

This study's main objective was to analyze the level of health literacy and the implications of an approach using language multimodality in issues involving Covid-19 in truck drivers who commonly travel along the Bioceanic Route. To achieve this general objective, some goals were specifically listed, such as: analyzing the definitions of Covid-19, coronavirus, social isolation and social distancing by truck drivers; understand truck drivers' perception of the signs and symptoms of Covid-19 and Acute Respiratory Distress Syndrome (ARDS); understand truck drivers' perception of the importance of measures to contain coronavirus transmission; understand the lifestyle habits and risk factors that truck drivers are exposed to when infected with Covid-19; discuss how the use of multimodal language can expand the possibilities of constructing meanings about Covid-19, vaccination against SARS-CoV-2 and prevention measures.

METHODOLOGY

This was a study with multiple methodological characteristics, with the focus being based on a qualitative, interpretative and exploratory perspective. For this, it was based on the concept of emergency epistemology proposed by Sommerville (2007), which aims to guide researchers to observe facts and focus on perception, in order to explain information that researchers did not consider or plan previously, establishing a connection with the future and the unknown. This way, the information and themes were listed as they emerged during the discussion and negotiation of concepts with the participants with the aim of achieving the proposed objectives.

Firstly, the researcher explained to the participants the stages of the research process, its purposes, its objectives, its benefits and harms. After the initial exposures, the participant was invited to sign an Informed Consent Form (ICF) to participate in this study. The participant was then asked to fill out an identification form containing information such as age, sex, education, contact details, known comorbidities, whether they had already been infected by Covid-19 and whether they had already been vaccinated against SARS-CoV. - 2. Subsequently, the research was divided into two stages, the first stage consisting of an individual interview about notions about Covid-19, which will cover the following topics: concept of Covid-19, coronavirus and flu syndrome; individual perceptions about the importance of wearing masks, washing hands, social distancing and social isolation; perceptions about the signs and symptoms of Covid-19 and its serious condition; perceptions about the use of early treatments, prophylactic treatments, self-medication and non-pharmacological measures against Covid-19; perceptions about vaccination against SARS-COV-2 and its importance in preventing the disease and finally, individual perceptions of the role of government spheres and the health system in combating coronavirus. Therefore, the second stage was carried out through a health education strategy using the multimodal language approach in order to help the importance of raising truck drivers' awareness of the basic concepts regarding the pathophysiology of SARS-CoV-2 infection., regarding the transmissibility of the new

coronavirus, regarding the prevention of Covid-19, biosafety and health measures, regarding scientifically proven diagnostic and therapeutic management and the signs and symptoms of the disease.

Furthermore, the inclusion criteria were: being a truck driver for at least 2 years and having signed the Free and Informed Consent Form. In addition, truck drivers aged 18 to 65 will be included. Furthermore, the participant must be literate and different levels of education were included (incomplete primary education, incomplete secondary education, complete secondary education, incomplete higher education and complete higher education).

From the interview with each of the truck drivers, the researchers narrated the participants' perceptions about health literacy with a focus on Covid-19, from concepts about the disease, etiological agent, prevention measures, self-care measures, therapeutic measures and access to health services. Audio recording was carried out with prior authorization from each participant, and these recordings were transcribed according to the emergence of the topics discussed and correlating with the objectives of this research

RESULTS AND DISCUSSION

Among the individuals covered in the research, this work included the participation of 11 truck drivers aged between 35 and 66 years old, 3 living in Campo Grande-MS, 4 living in other cities in Mato Grosso do Sul, 2 from Santa Catarina, 1 from Paraná and 1 from São Paulo. These truck drivers work to transport cargo between the cities that make up Bioceanic route and also carry out routes in other states of the federation. Regarding the education of the truck drivers interviewed, 2 participants did not complete elementary school, 4 did not complete high school and the rest had completed high school

regularly. All participants knew how to read and write adequately. In this report, research participants were named with letters from A to J, as a way of preserving the anonymity of the participating individuals.

Therefore, given the methodology applied in this research, we initially sought to establish a bond with each of the truck drivers interviewed so that they felt comfortable in explaining their opinion, their visions, their fears and even doubts regarding the topic covered by Covid. -19. We knew that due to the sociopolitical and biopsychosocial contours that the pandemic took, addressing the topic could sometimes bring up sensitive issues for the research participant. However, we established a bond with truck drivers and clearly explained the purpose of the research, its objectives, the importance of carrying out research among the truck driving population and the anonymity of this scientific initiation project.

After the initial explanations, the researchers initially approached the concepts of Coronavirus and Covid-19 with the participating individuals, and it was noticeable that the majority of truck drivers knew and knew well how to differentiate the main concepts in relation to these two aforementioned terms, as evidenced in the speech of the truck driver C:

> "Coronavirus would be that type of virus that came from China, a virus that infects our lungs and causes Covid-19, which would be the disease caused by it" (C).

A large portion of the truck drivers interviewed knew how to conceptualize the terms Covid-19 and Coronavirus with due clarification, with the exception of truck driver A who explained that he did not know the difference between the terms and that it was "another type of flu, which only changes the name". The Coronavirus is a zoonotic RNA virus from the Coronaviridae family,

and there are several viruses already known, such as SARS-CoV, which causes Severe Acute Respiratory Syndrome (SARS), and MERS-CoV, which causes the Middle East flu, and now SARS. -CoV-2 that causes Covid-19 (LIMA, 2020).

Furthermore, when addressing issues related to social distancing and social isolation, opinions and speeches were quite diverse and divided. In this sense, individual A addressed the following question in relation to what was discussed:

> "Social distancing and social isolation were very important so that we could be today with the number of sick people well below what it was before…I lost many friends and family who insisted on not staying at home, going out, going to parties and ended up getting infected. I understand that not everyone could stay at home, I myself haven't stopped at any point since 2020, otherwise I would die of hunger, but I think it was important to keep as many people as possible indoors to reduce the circulation of the virus […]" (A).

On the other hand, truck driver B's speech stands out, explaining a different issue in relation to the topic of social distancing and isolation:

> *"This 'stay at home' business has only served to sink our economy and bankrupt the country. I know several of my friends who went hungry during this period. Did a lot of people get infected? Yes! But the number of people who died of hunger, depression, unemployment...no one talks about it. They did have to protect the elderly, increase the number of doctors, hospitals [...] now social isolation was nonsense because at some point everyone was going to get infected" (B).*

With regard to social isolation, it is clear that this measure was ideal, especially at times of greatest peak of disease transmissibility in the country, to reduce the large number of infected people, the number of hospitalizations and the large number of deaths. Especially at

the beginning of the pandemic context, the clinical risk of disease was not fully clarified, with doubts in the international scientific community about transmissibility, infectivity and other parameters in the dynamics of the virus (COUTO et al, 2021). Covid-19 has been registered in more than 180 countries, with social distancing, social isolation and quarantine measures being extremely decisive in containing the spread of the disease and even more catastrophic scenarios, especially with regard to reducing the number of virus mutations. and the emergence of new variants (COUTO et al, 2021).

Furthermore, after initial studies, with an incubation period of around 7 days and a transmissibility period of up to 14 days for the first strain identified, a mandatory isolation period of 14 days was established for people diagnosed with Covid-19 (MINISTRY OF HEALTH, 2020). And this specific issue was a matter of considerable disagreement among the participants, as can be seen in the speech of individual F:

> *"Every hour television says one thing; the internet says another. I thought it was just 7 days of isolation, but some say 10 days, others 14, every time a different change"* (F)

Regarding questions involving the symptoms of Covid-19, the level of health literacy regarding the signs and symptoms of the disease varied according to the source of information and the previous experiences of each participant in the research. During the dialogue, as an example with truck driver I in his speech when asked about the symptoms, the following questions were observed:

> "I know that Covid-19 can only be a mild flu, but if people don't take care of themselves they can develop more serious conditions. In my family, for example, everyone got Covid, but no one got serious. For example, I only had a cough and diarrhea for a few days, but it soon went away. If you take the right precautions, eat well, use medication,

the chance of developing a serious illness and being admitted to the hospital is small [...]" (I).

In a similar way to the statement above, interviewee A addressed this topic by elucidating the main risk factors in relation to the natural history of the disease, demonstrating a good level of literacy:

> "The main symptoms of Covid are coughing, sneezing, headache, diarrhea, fever and even shortness of breath. I think the majority will have mild symptoms when they have Covid, but others may have more severe symptoms and even die, I think people who already have a disease like heart disease or are older. I lost a neighbor who had Covid and smoked for over 40 years, this certainly contributed to her worsening the condition" (A)

In view of the above, it is observed in the statements above that despite small differences regarding the Natural History of Covid, it is clear that among the truck driving population interviewed there is a good understanding of the Covid situation and the risks of worsening the disease. In fact, the clinical spectrum of Covid-19 can vary greatly, from milder symptoms to more serious lung conditions such as pneumonia. According to the work of Brito and collaborators, from 2020, the most prevalent symptoms are fever (43.8% upon admission and 88.7% during hospitalization), cough (67.8%) and fatigue (38.1%), and the literature reveals that there are a large number of oligosymptomatic, pre-symptomatic or asymptomatic people who are not detected or accounted for in the epidemiological statistics of the disease. The incubation period for the virus is around 7 days, where most people actually develop mild symptoms (BRITO et al, 2020). However, some, due to a severe inflammatory response from the body itself to contain the infection by the etiological agent, can pathophysiologically trigger severe pneumonia (BRITO et al, 2020). These theoretical issues regarding diseases

were discussed and dialogued with those researched through figures and videos, in which the researchers showed an illustrated figure of a lung and elucidated how the virus infects the airways and how the body can respond to this invasion. Understanding was adequately satisfactory, as can be seen in the speech of individual G:

> "I thought the virus entered us to destroy our lungs and ate our cells, but in reality, it is our defense cells that go uncontrolled and end up damaging our lungs, right? Wow, I didn't know that, interesting. So that's why you have to get vaccinated, right? For our immune system to get used to the virus." (G).

Regarding the main risk factors for the development of severe forms of Covid-19, such as Respiratory Distress Syndrome, SEPSE and Septic Shock, the Ministry of Health, in its 2020 Clinical Management Protocol in Specialized Care, lists: pregnant women in any gestational age, women who have recently given birth up to two weeks after giving birth (including those who have had miscarriages or fetal loss); adults over 60 years old; children under 5 years old; indigenous or village population; individuals under 19 years of age taking prolonged acetylsalicylic acid (risk of Reye's syndrome); individuals who have lung diseases (including asthma); patients with tuberculosis of all forms (there is evidence of greater complications and possibility of reactivation); cardiovascular diseases (including systemic arterial hypertension – in light of current knowledge about Covid-19); nephropathies; liver diseases; hematological diseases (including sickle cell anemia); metabolic disorders (including diabetes mellitus); neurological and developmental disorders that can compromise respiratory function or increase the risk of aspiration (cognitive dysfunction, spinal cord injury, epilepsy, cerebral palsy, Down syndrome, stroke or neuromuscular diseases); immunosuppression associated with

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medications (corticosteroids, chemotherapy drugs; TNF-alpha inhibitors), neoplasms, HIV/AIDS or others and obesity (especially those with a body mass index (BMI) ≥ 40 in adults).

Based on the above, some risk factors were identified among the research participants, with 4 truck drivers over 60 years old, 7 truck drivers with obesity, 6 truck drivers reported having hypertension, 7 truck drivers reported having diabetes, 2 reported having asthma, 9 did or did tobacco use at some point in life and one reported having already treated pulmonary tuberculosis. It was clarified to them that the aforementioned comorbidities could be risk factors for the development of severe forms of the disease, requiring even greater attention to preventive measures against Covid-19 and encouragement to complete the vaccination schedule according to age.

Furthermore, when addressing the issue of vaccination against Covid-19, opinions regarding the immunization process were almost unanimous in defense of vaccination as an important strategy in containing the pandemic. All participating truck drivers reported having been vaccinated with at least 2 doses of the Covid-19 vaccine at the time of the interview. The importance of the immunization process was highlighted in the speech of individual E, who refers:

> *"I think the vaccine was a very important issue in this pandemic, everyone was waiting too long for this vaccine to be discovered and could be applied to everyone as quickly as possible. I've seen a lot of people saying they're not going to get vaccinated, they've never been vaccinated. This nonsense happens all the time, a lot of it because politicians keep talking bad about the vaccine, I don't think there's anything to do with that" (E).*

Similarly, individual G also highlights vaccination as a public health strategy:

> *"I don't know very well what the vaccine does to the body, I thought it prevents you from getting the disease, but I was seeing on television these days that it can actually reduce the chances of the disease getting worse if you are vaccinated, and that It is very important that everyone gets vaccinated to reduce the virus from circulating" (G).*

In fact, vaccination against Covid-19 in Brazilian territory has gained many facets in public opinion, greatly influenced by the context of political rivalry, important social dichotomies and the dissemination of false news that, at times, generates a lot of doubt and distrust on the part of the population. However, it is noteworthy that vaccination would not act as a form of medicine or serum to cure disease, but a way of presenting inactive forms of SARS-CoV 2 to the human body's immune system, making it more prepared for when the cells defense systems come into contact with an active virus, providing a more effective response against the etiological agent and thus reducing the chance of developing a serious Covid-19 condition (COUTO et al, 2021). This way, vaccination does not prevent contamination by the disease, but it ensures that if a person is infected, especially those with risk factors, the chances of developing severe Covid-19 or dying are greatly reduced (FILHO et al, 2021).

With regard to disease containment and transmissibility measures, a great diversity of opinions, sometimes contradictory, and different levels of literacy regarding basic health measures are elucidated. It was observed that the lifestyle habits and work dynamics of the truck driver population were the main issue that hindered the adoption by individuals participating in this research of basic measures to contain Covid-19. As can be seen in the speech of individual K:

> *"There was a lot of talk at the beginning of the pandemic about wearing a mask, putting alcohol gel on your hands, not sharing things, putting your hand over your mouth to cough. I did all of this but I still ended up getting*

infected twice in the last few years. As we have to be on the road all the time and pass through various places, having contact with various people across the country, it is difficult for us not to become infected. Even wearing a mask, eventually the disease arrives" (K).

When asked about the topic, individual H also addressed the following question:

"I think all these issues that they told us to do are very important: we have to wear a mask, wash our hands, keep our distance from other people in places. But the problem is that during this pandemic, some did their part and others didn't, and that's how we got to where we are. A lot of people dying. And that was very bad, because some say one thing and others say another, the population becomes a bit lost, or even denies reality" (H).

Clearly, the measures adopted by international health authorities are decisive in limiting the transmissibility of Covid-19. Health entities characterize NPI as Non-Pharmacological Interventions, at individual and community levels, which include respiratory etiquette measures, use of preferably surgical masks, frequent hand washing, isolation and social distancing and other measures (GARCIA, 2020). IFNs were and still are necessary in order to mitigate viral spread and, therefore, it was worked through multimodal language with the participating truck drivers to negotiate concepts such as how to use masks, respiratory etiquette, washing hands and other biosafety measures., using videos, images and demonstrations by researchers. From these discussions, it was clear that truck drivers understood the need to adopt such individual protection measures for individual and collective protection in the transmission of the disease.

FINAL CONSIDERATIONS

With this research, based on the methodology adopted, it was possible to elucidate the perceptions of the truck driver population regarding the main topics in relation to Covid-19. Even though a portion of those interviewed had few years of study, it was considered that the majority of research participants had an adequate level of health literacy in relation to the dynamics of the disease, its prevention methods, its risk factors, its clinical spectrum, its forms of transmission and the importance of vaccination against Covid-19. It is extremely important to carry out work with this to understand the different opinions and the level of education regarding the disease in different groups of people, to understand and elucidate how different individuals carry out self-care and understand the importance of different prevention measures. Therefore, even with few studies related to truck drivers, this work contributed to understanding that even with different lifestyle habits from the general population, such as great mobility and contact with a large number of people in different regions, truck drivers understood well the issues that involve Covid-19 infection and the importance of promoting self-care measures.

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