

Information Design and the COVID-19 pandemic: what is the contribution to health and citizenship?

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Abstract

Multiple and various graphic design pieces were created around the world for digital media during the COVID-19 pandemic. These graphic design pieces were meant to disseminate information about the disease caused by the new Corona Virus SARS-CoV-2 to inform people on how to better protect themselves. Information Design uses guidelines and principles that would inform the design of useful graphic pieces to combat the pandemic and help the people to address their health needs for citizenship rights. This research analyzed multiple pieces made available by Fiocruz (a Brazilian health institution). The case study presented in this paper explores the piece with information explaining how soap acts on the virus and proposes a new design to improve its quality.

Keywords: Pandemic; COVID-19; Information Design.

1. Introduction

The COVID-19 disease, caused by the new Coronavirus SARS-CoV-2, brought about big ruptures in all human activities worldwide, such as work, supply chain, leisure, health, education, among other daily activities. In a matter of few months the disease spread globally, and on March 2020 the WHO (World

Health Organization) declared it a pandemic, based on the ever increasing of infection cases and the presence of the virus in more than 114 countries then (OPAS, 2020). Social distancing, quarantine, masks, alcohol, were among the initial measures used to contain a virus whose means of transmission were yet unknown.

Escobar and Spinillo (2016) analyzed health infographics and the authors tell us of the importance of the use of elements that facilitate the understanding and help grab the interest of people for whom the infographics were designed, especially when the subject to be presented is complex:

“Contents related to the health sector (e.g., the acting mechanisms of medications on the body) must be communicated with efficiency, efficacy and accuracy to diverse groups of people. Considering that the health sector is a priority in the development of a country, this communication of information in a clear manner is essential, for example, in the prevention of diseases” (Escobar and Spinillo, 2016. P. 163).

Initially, there wasn't a clear directive regarding the form of transmission, contagion, prevention, treatment and other information necessary to inform how the individual and the society should behave - and most of the time, the existing information was conflicting (Landim and Jorente, 2019). One of the initial recommendations focused on physical distancing, as we can see in some graphic pieces that were created around the world, as shown on figure 1.



Figure 1 - Keep your distance.

Source: <https://twometregraphics.co.uk/Covid-Posters-UK> Accessed 12/04/2021

The pieces on figure 1 were designed during a period when there was a lack of more concrete scientific knowledge regarding the causes, consequences and reasons behind the suggested “physical distancing” that would help people understand and adopt the measures and behaviours suggested (one can imagine the inner thoughts of people: they are telling me to keep my distance, but why should I do that? What distance is safe? What happens if someone gets too close?).

As the pandemic evolved, and new studies came to light, then it became possible to use their findings to inform the design of better graphic pieces to convey a more pertinent, understandable and informative orientation to the population in general. In order for the information to effect actions, it is necessary that it is well presented, using a clear, objective and informative language, geared towards multiple persons, from different backgrounds; otherwise, the designed graphic piece will be of little or no use in aiding people to

follow the recommendations with dire consequences to the full exercise of citizenship (Sørensen et al., 2012).

In the cacophony caused by multiple messages of the many graphic pieces that were created by different sectors (e.g., government health institutes, press, public spaces etc.) with heterogeneous quality (to say the least), one realizes that much of the basic principles of Information Design (ID) are scarcely used in most cases. This research aligns itself with Redig (2004. P. 3) when the author says that “there is no citizenship without information, nor information without design”.

There is still a great demand regarding the information about the pandemic; for example, the world now has a vaccine, but, unfortunately, the vaccine has been met with great objections, mostly due to disinformation campaigns - although important, this research did not analyze the graphic pieces with disinformation or the pieces with incorrect information - a subject of future analyses. Most of the existing graphic pieces out there are at least dated or may be spreading disinformation - a clear call for academia in general, and ID in particular, to exercise its social role creating and validating clearer graphic pieces, which is the goal of this research.

One of the Brazilian institutions that concerned themselves with the creation and dissemination of graphic pieces to be used on digital media by the multiple stakeholders was Fiocruz - Fundação Oswaldo Cruz, whose aims are:

“To promote the health and social development, to create and disseminate scientific and technological knowledge, to be an agent of citizenship. These are the central concepts that inform the work of Fiocruz, linked to the Health Ministry, the most renowned institution of health science and technology of Latin America”. (Fiocruz, 2021).

Fiocruz is an institution for development and technological and scientific research and is expressively active in its role of prevention and control of the COVID-19 disease. It provides guidelines and knowledges regarding the disease via multiple sources, including a series of graphic pieces designed to be used on social media by whoever wants. Unfortunately, some of these graphic pieces need some corrections.

We separate those graphic pieces for use in digital media from posters: “A modern post will be an image, usually in color and containing a single theme, accompanied by a text no longer than 10 or 20 words, in a single argument. It is designed to be posted to be viewed by people passing by” (Moles, 1987. P. 5). Rapid advances in computer tools allowed for a digital revolution in graphic design, followed by public access to the Internet. Nowadays, graphic design is ubiquitous, and it is essential part of information systems, permeating our daily lives. The advances in technology changed the nature of the final product, but not the role of the designer - present content to communicate messages that are clear. The research of the inadequacies of digital graphic pieces created for the pandemic is object of a different research by our group.

This research uses principles of ID to inform the design of graphic pieces related to the pandemic. It aims at analyzing and suggest improvement ideas. It presents a case study of a graphic piece available from Fiocruz that intends to show how the soap acts in combating the virus. The remainder of this article presents some of ID principles; analyses the piece and present an alternative.

2. Methodology

This research is characterized by its exploratory nature, in which the subject has not been widely studied. The case study presented describes and explains the potential problems in light of ID principles to inform an alternative design (Gil, 2017). The graphic piece presented to illustrate the research was chosen due to its importance, and the multiple points of contentions and to show the power of simple alterations to create alternative versions.

3. The pandemic

The COVID-19 pandemic took the world by storm, causing deep and lasting ruptures in all sectors: economy, relations, supply chains, production, work, leisure, education, among others. Information Design has an important role to mitigate some of the impacts by presenting crucial information on how to deal with the virus SARS-CoV-2 that causes the disease by creating graphic pieces that convey such information in a clear, concise, accurate and objective manner.

Van Amstel, Guimarães and Botter (2021) show that information is, partially, aiding the response to the pandemic. People in general became consumers of an insurmountable quantity of analysis, data, graphics, interactions and information that often are confusing, contradictory, wrong, complex to understand etc. These people, for whom the information is directed, are left on their own to give meaning to this plethora of information as the pandemic runs its course - and they need to act, and evaluate the impacts their actions will have in their lives. The choice of a correct course of action is a matter of individual and public matter issue - thus, it is important to provide access to correct and clear information with which people can inform their decisions.

4. Communication in times of the pandemic

The current pandemic is possibly the greatest threat to public health faced by contemporary society, e it is increasingly clearer that the main factor in the prevention of the disease is to provide access to correct information: “the impact of COVID-19 on vulnerable groups depends in part on the quality of the communication regarding the risks and dangers to the public health” (Reddy and Gupta, 2002. P. 3793). According to Lin et al. (2014), during pandemic situations, public health officials should develop communication strategies to educate the population of the existing and potential risks, and instruct them on how to avoid or mitigate such risks; however, social and individual adverse dimensions difficult the access and the capacity of giving meaning to the information in order to take adequate actions. The communication plan must account for such difficulties.

According to the Pan American Health Organization (PAHO, 2021. P.2), during a pandemic, more than any other public health situation, the information systems assume a fundamental role of providing essential evidence for the decision-making process so that the decisions are criteria and informed, and “the emerging technologies and automation have the potential to improve public health in ways never before seen in history”.

Social media are the most used information source in the world, and, during health crisis, require information that are clear, accurate and easily understandable to help convey a sense of order to the population as well as to keep them up to date regarding the necessary and correct actions to take (Bernardino e Nicolau, 2020). This justifies the choice of graphic pieces as subject of the research.

Access to information is a basic need: provenance, transparency, responsibility, accuracy, dissemination, actions against disinformation, among others, are measures that the society should consider preventing the spread of the virus, to avoid contamination, to obtain resources etc. (Pousadela, 2020).

5. Information Design

Information Design is the science (and art) of using visual language aspects to plan and create graphic pieces to convey information to the public (Portugal, 2013). For example, Carlson, Chandler and Sweller (2003) consider that a good composition, that presents diagrammatic information, demand a smaller cognitive effort than those that are exclusively textual. The cognitive effort increases, for example, when the information requires learning something new to execute a prior or new task, such as: the number of choices, lack of clarity, presence of unnecessary elements, etc.

These elements exert an excessive demand on memory and require extra reasoning and meaning creation - therefore, it is important to try to minimize the cognitive effort by judiciously ID of the graphic piece, without underestimating the public (Tarouco, 2006). Humans are quicker to process visual than verbal or textual information. Additionally, our limited memory capacity makes the decoding of visual information a powerful tool (Cleveland, 1994).

Information Design organizes relevant social information - information that aims to facilitate the exercise of citizenship - that have to be accessible, modulated to local needs, easily understandable and capable to elicit response. For example, when it comes to quality, the author says that a graphic piece presents poor quality when it is incorrect or irrelevant; and it is difficult to understand; difficult to read; difficult to create meaning; it is not interesting; presents confusing images and text; has grammatical errors etc. (Petterson, 2019).

In order to meet the information needs of the communicating parties, ID analyses, plans, shapes a message, its content, language and form; and aims at making this message clear, communicative, and that informs a desired behaviour when it is decoded by the public that create meaning from the message - such as the need to use a mask as the more adequate alternative (Petterson, 2019).

6. Variables of Information Design

In ID in general, the art, science and technique of composition combine textual and visual elements, such as images, types, color, illustrations etc. to communicate a message. For example, grouping elements achieved by composition facilitates or difficult the general understanding of the resulting message. The contrast generated by the intensity of visualization of each element in relation to its surroundings may prioritize more important elements.

The visual equilibrium, with symmetries and asymmetries, help in the creation of meaning. Harmony offers legibility, comprehension, clarity. Visual direction, and its multiple possibilities (diagonal, triangular etc.) guide the glaze. Hierarchy shows the relative importance of the elements. The layers of simultaneous and overlapping components of an image convey information. The relation among the elements is important. The physical alignment of the elements creates a visual connection, among many other variables (Cleveland, 1994; Redig, 2004; Lupton and Phillips, 2008; Rawal, 2018).

For example, Redig (2004. P. 61) tells us to consider the receiver of the message; the form of the message and matters of time. About the receiver, the author tells us to focus on them, considering that the communication has an origin and a destination: the reader of the message, “[...] who effectively determines the content of the message [...]”. The author calls “shameful” the official government messages that use public resources to convey messages geared towards the government.

Regarding the form, Redig (2004) tells us that the form of the message is paramount, and that the message’s graphic form should be as analogic as possible. Other characteristics are clarity (“what is the purpose of this information?”); concision, without signs or words or any other superfluous elements that difficult the comprehension; the emphasis on the more important parts of the message that can be obtained via graphical elements; colloquially, in which the words used are part of the vocabulary of the reader to facilitate the easy recognition and understanding; consistency of signs and contexts; cordiality, among others.

It becomes clear that composition, with its principles of color, typography, visual coherence, hierarchy, legibility and organization is an important tool to inform the design of graphic messages. For example, the color should be harmonic in a way that it does not affect reading, stability and aesthetics; typographic fonts must be harmonious; there should be coherence and visual unity; the elements should be presented in a hierarchy of order of reading and or degree of importance; the elements should be legible and organized according to a recognizable order.

As for the time, Redig (2004) calls attention to the sense of opportunity that implies that the graphical piece is presented when there is a need for it, and not at a random time (earlier or later than needed) to avoid confusion. The author also reminds us of the meaning of words that change in time. The author tells us that “When the informative object does not support these characteristics, the communication process will be deficient, and, therefore, the citizen may not see benefits. In this case, Design is useless (harmony among forms, colors, materials and meanings). The relation of form (external) with the structure (internal) of the elements is one of the pillars of Design (be it product design or visual communication), as opposed to what the media think and say, confusing design with appearance, superficiality and frivolity” (Redig, 2004. P. 61).

The research considers the following variables for its analyses:

A - Regarding the public

1 - Focus on the receptor

B - Regarding the form

2 - Analogy

3 - Clarity

- 4 - Concision
- 5 - Emphasis
- 6 - Colloquial text
- 7 - Consistency
- 8 - Cordiality
- C - Regarding time
- 9 - Opportunity
- 10 - Stability

7. Analyses

The case study presents the analyses of the graphic piece shown in figure 2:

Entenda o novo CORONAVÍRUS e por que devemos lavar as mãos com sabão

O que são VÍRUS?

Os vírus são formados basicamente por uma cápsula de proteína que envolve o material genético, que pode ser DNA ou RNA. Alguns vírus possuem uma proteção a mais, uma capa de gordura. Esses são os vírus envelopados, como é o caso do SARS-CoV-2, que causa a COVID-19.

De maneira geral, vírus não são considerados seres vivos, porque só conseguem gerar outros vírus quando estão dentro de células de animais, plantas ou alguns outros microrganismos, dependendo totalmente desses seres.

Os vírus são estruturas muito simples e tão pequenas que alguns deles são menores que as bactérias. Em geral, não podem ser vistos em microscópios mais comuns, os ópticos.

ESTRUTURAS DE VÍRUS MAIS COMUNS

- Icosaedrico
- Icosaedrico envelopado
- Helicoidal
- Helicoidal envelopado
- Bacteriófagos

Como é o novo CORONAVÍRUS

O novo coronavírus pode medir menos de 200 nm

NANÔMETRO (nm)
Unidade de comprimento equivalente à bilionésima parte de um metro

8.848m
MONTE EVEREST
Parícuti, Yucatã

Se um vírus fosse do tamanho de uma bola de tênis, um ser humano teria 800 km de altura ou 100 vezes a altura do Monte Everest, a maior montanha do planeta.

PROTEÍNA S
Permite o encaixe do vírus na célula hospedeira (humanos e animais)

PROTEÍNA E
Atua na montagem do vírus

PROTEÍNA M
Função estrutural na formação do vírus

RNA
Material genético

ENVELOPE
Membrana lipoproteica (gordura) que envolve a capa de proteína N

PROTEÍNA N
Confere estabilidade e proteção ao RNA

Como o sabão destrói o CORONAVÍRUS?

A membrana que envolve e protege o vírus é formada por gordura e proteína

MOLÉCULAS DE SABÃO
Cabeça hidrofílica
Cauda hidrofoba

1 A cauda das moléculas de sabão é atraída quimicamente pelas moléculas das gorduras. Então, o sabão interage com a membrana lipídica (gordura) do vírus e a rompe.

2 As proteínas e outros fragmentos do vírus são arrastados pela água, destruindo o vírus.

COVID-19 DIVULGAÇÃO CIENTÍFICA
coronavirusdc.com.br

Figure 2. Graphic piece of the series divulGAÇÃO.

Source: Fiocruz (2021).

7.1 Regarding the public

7.1.1 Focus on the receptor

Figure 2 has the title: Understand the new CORONAVIRUS e the reason why we should wash our hands with soap. The title indicates that it is going to deal with at least two information: the new coronavirus and the reason to wash the hands; but, the grid gives us three information: The first grid, to the left of the image, has the title What are Viruses?; the second grid, to the right, asks How is the new CORONAVIRUS; the third grid, in the bottom of the piece prompts How the soap destroys the CORONAVIRUS.

As presented, we can identify multiple information: one about viruses in general; one containing an illustration of multiple viruses, none of which is a member of the coronavirus family; a comparison of the size of the virus with a metaphor using the Mount Everest - which is a complication; the new coronavirus and finally the effect of the soap on the virus. This list above is not exhaustive, given that one of the main problems of the graphic piece is visual and information pollution. Each one of these information listed before could stand alone in a separate graphic piece, in a more objective and direct manner, comprising a series of graphic pieces organized for a better sequence of presentation of the total information - as opposed to the crammed piece shown in figure 2.

Overall, there are information that are not well explained nor are associated to other elements, or that are associated by proximity which adds to the cognitive effort the reader has to apply to create meaning; for example, there is the fat/grease, which is a component of the outer layer of the virus, and plays an important role when the soap interacts with it, dissolving it, thus killing the virus - but all of this information requires following the logic of the graphic piece, which does not necessarily reflects that of the person trying to understand the reason why she should wash her hands. So, given the title, the graphic piece does not explain the reason to wash the hands, rather it talks about the mechanism by which the soap kills the virus. There is a big assumption that people use soap every time they wash their hands, for example. And the reader may be left wondering why it is talking about the fat and the soap and she must make that connection herself.

Hierarchy difficulties change the order in which the information is conveyed; it also distracts from what is primary information or secondary information (the size of the Mount Everest, for example). There are images that are not pertinent to the basic information - the reason to wash the hands with soap. Is it the same for any kind of soap? The lack of consistency and size of images makes it difficult to relate them to one another and confuses as to the relevance of each piece of information. There is an excessive use of technical terms and inconsistencies. For example, it is not of general knowledge the meaning of hydrophilic (attracted to water) and hydrophobic (repellent to water) the understanding of which is fundamental to understand how the soap dissolves the fat component, thus killing the virus. And even that mechanism is not fully explained.

7.2 Regarding the form

7.2.1 Analogy

Regarding the multiple analogies used in the graphic piece, there are additional grids with unnecessary themes, such as the illustration of various types of viruses. In addition to presenting such viruses, there isn't in the illustration of a member of the family of the new coronavirus, and there is no old coronavirus for

comparison. What are the differences between the new and the old virus? They don't look at all similar to the ones shown. Why the size of the virus important? What does it mean to compare it to the Mount Everest? What is the Mount Everest?

Additionally, the representation of the coronavirus is done by a drawing that presents the interior and the exterior of the virus at the same time, with only a small variation of color tone, which makes it difficult for those who are not trained in drawing to realize what is happening. These images are technical and repetitive without being constant. They are not scientific to the extent that they do not represent even a good approximation of the look of the actual virus for the average person (Trotta and Spinillo, 2016).

As for the grid where the soap appears, there is an unsuccessful tentative to relate the elements of the virus in the image "moléculas de sabão", with elements named hydrophilic and hydrophobic; however, the reader is left on her own to try to understand where they come from (From the virus? From the soap?), and how they end up inside the soap molecule, and how the mechanism really works. These elements appear on the larger image of the dissolving (?) virus (which is different from the previous image), in different size and shape. Are these elements that dissolve the virus, thus rendering them inactive? Do they kill the virus?

7.2.2 Clarity

Schiver (1996) tells us that the creation of visual groupings is fundamental for the organization of the information and it facilitates the legibility. The groupings may occur via connectors or by exploring the Gestalt principles such as proximity, similarities/differences. In the analyzed graphic piece, the formation of these groups is impaired by the vast number of information that are near one another, without the necessary space to delimit its surroundings, thus eliminating any possible structure of the visual groupings.

The graphic piece divides the grids in an incoherent manner - the piece seems to propose to answer two questions, and appears to be divided into two grids: one above and one below a red line. But this red line has a logo in it, given room for an interpretation of that being a separate grid. In all, the graphic piece seems to answer three main questions: what a virus is and how does the new coronavirus look like on the top grid; and how the soap acts on the virus. So, the top grid is further divided into two grids. And in those two grids there are others that illustrate viruses in general, that compare sizes with other elements and the new virus itself.

The graphic piece uses typographic fonts loosely: it uses bold in texts that should not have been given that emphasis; it uses colors without stabilizing a visual language form them. The grids, especially the bottom one, use background elements that difficult the perception of the images, causing a visual pollution that makes it difficult to understand the function of the piece, as it does not focus on the receptor.

The composition of the graphic piece seems to be truncated by a line in its middle with elements that are similar to the head; and the line has, on its right side, a logo of some sort, making it seem to be that the information on the bottom grid is not related to the information on the top grid. This line, right in the middle section, separating the grids, breaks the hierarchy, causing confusion regarding the proposed meaning, as it appears to disassociate the information. It can be said that there are multiple hierarchies in the composition due to its two heads (one on the top, and the other on the middle).

The grid comparing the size of the virus is between two grids (top left and top right); and it is comprised of irrelevant information in the context of the graphic piece. Additionally, it is dividing the two other grids; and should be removed or placed elsewhere.

As pointed before, the bottom grid is polluted with background elements that are of the same colors as the others elements, making it difficult to understand the illustrations. The color of the typography and the contrast of the background color difficult the reading of the text. Specifically, the typography used on the titles are hard to understand, and are in bold.

7.2.3 Concision

According to the recommendations of Moreira, Nóbrega and Silva (2003) for the production of educational materials for the health sector tell us, there should be included in the communication only the absolute necessary information for the understanding of the message; long texts should be avoided; only 3 to 4 ideas should be presented, and a clear declaration of expected action should be given. In this sense, the text of the graphic piece shows some problems due to the excessive number of different ideas it presents, most of which are of little or no relevance to the desired action (supposedly, to wash the hands with soap to kill the virus); this makes the text unnecessarily long. Due to this extension of the text, the piece uses a small font size in order for the text to fit in the grid, making reading even more difficult. This is important, considering that the digital graphic piece was designed to be used on social media, generally seen on smartphone small screens - this is a subject of a separate research, outside of the scope of this paper.

7.2.4 Emphasis

The hierarchy of information is an important aspect of communication, especially in informational and educational digital graphic pieces. It is fundamental that there be a creation of focal points that capture the attention of the lector, provide clear points of entry to the material and that guide the reading in order to attain success with the message (Eldesouky, 2013). In the analyzed graphic piece, however, the excess of elements with similar emphasis makes it difficult for the receptor to form a clear hierarchic structure to follow.

There is an indiscriminate use of bold: different typography fonts, sizes, colors and other emphasizes render these resources banal, and the design lacks the hierarchy and emphasis that these tools could bring to aid the creation of meaning of the message.

One of the goals stated in the title, that of informing the reason why a person should wash her hands (with soap), is shown out of context, in an image with little information. This image is difficult to visualize due to the background elements, and difficult to make relations to other elements of the illustrations due to different drawings, sizes and colors. There is a loss of opportunity to give emphasis to this information (considered by the authors to be relevant). For example, the authors had to deduce that the fat layer (outside?) the virus is linked to the elements on the soap that make the soap useful to kill (dissolve) the virus.

Additionally, the text on the bottom grid is in bold, indicating that those textual information are more important than the others. There is a blue image that is the category in which Fiocruz arranged all the

graphic pieces; however, it is out of context. The category “divulgaÇÃO” combines two words in Portuguese: disseminate and action. So, clearly, the graphic piece was created to elicit the action of washing the hands with soap from the population.

7.2.5 Colloquial text

The text uses multiple technical terms (e.g., nanometer, hydrophilic, hydrophobic) that are not necessarily known to the general public. There are multiple visual, textual and image languages, that impedes the creation of links between the texts and the images. For example, there are multiple images of the coronavirus, with multiple views, which shows also a lack of consistency (the next variable).

The image “moléculas de sabão” is not connected, and seems displaced, making it difficult to link it to the other elements. Additionally, it seems more like a soap/water bubble, not a molecule. It contains some elements labeled hydrophilic and hydrophobic without, however, inform that these are the astringent elements of the soap that allow it to dissolve the virus. It is the authors’ interpretation that these elements attach themselves to the layer of fat from the virus, and are then washed away by the water, dissolving the virus. There lacks the information that this mechanism requires 20 (twenty) seconds in order to work (information that the authors’ obtained elsewhere from the graphic piece).

7.2.6 Consistency

The multiple grids denote a juxtaposition of different information. The logic connection of these complementary information is left for the receptor to make, causing additional cognitive effort. It doesn’t help that the graphic piece represents the same information (the virus, for example) using different graphic images at each instance where the illustration of the virus appears - such inconsistency makes it difficult for the receptor to make the intended connection.

The top grid is subdivided vertically, and the bottom grid is horizontal. The top grid makes more sense when read from right to left (this is marked by numbers 1 and 2 in front of the texts on the right). This happens despite left to right being the reading order used by the population.

The graphic piece names the “new” coronavirus without presenting the old coronavirus. The convention is to use the name SARS-CoV-2 when referring to the virus that causes COVID-19.

According to the graphic piece, the soap associates with the layer of fat, dissolving it, and thus killing the virus. This layer is referred by different names in different places of the graphic piece: layer, envelope, lipoproteic membrane, lipid membrane. These may be confusing to the receptor.

7.2.7 Cordiality

No instance that broke cordiality conventions was found.

7.3 Regarding time

7.3.1 Opportunity

The graphic piece does not give a date of its creation: in a situation where information is changing drastically and rapidly, the date of the information is relevant, as new information may be available to contradict the previous one. As for the origin, it does indicate that it was designed by Fiocruz, a respected

institution, which gives credibility to the piece. It does not address provenance, however - people with ill-advised intentions may get the piece from Fiocruz, change it and then post on their social media.

It does not consider more new recent information that the virus is transmitted primarily via air, by contact with infected people, especially when they cough or sneeze; and by touching infected surfaces and immediately taking the hands to eyes nose or mouth. The point being that the reason why people should wash the hands with soap is that the soap dissolves the virus; and by touching a contaminated surface, the person may take get contaminated by touching eyes, nose or mouth before washing the hands. The most recent important information is to avoid touching eyes, nose and mouth with the hands without washing it with soap for at least 20 seconds.

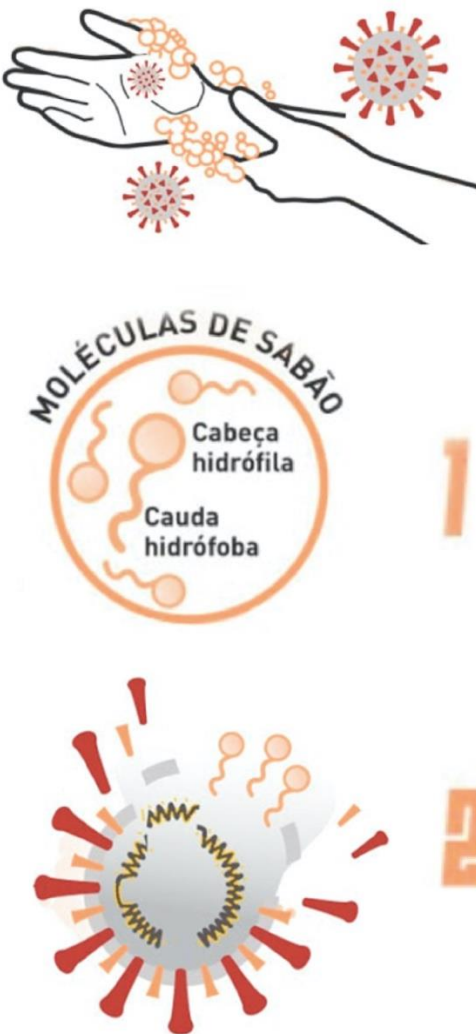
7.3.2 Stability

As stated before, the graphic piece uses multiple terms to name the layer of fat.

8. Re-design

Figure 3 presents an illustration of a possible piece addressing some of the problems and concerns found during the research. Note that some issues such as the series of information, the most recent information, provenance among others are not contemplated in this example.

Como o sabão destrói o CORONAVÍRUS?



A **membrana** que envolve e protege o vírus é formada por gordura e proteína.

1 A cauda das moléculas de sabão é atraída quimicamente pelas moléculas de gordura do vírus, **rompendo sua membrana.**

2 As proteínas e outros fragmentos do vírus são **arrastados pela água**, destruindo o vírus.

covid19
DIVULGAÇÃO
CIENTÍFICA
coronavirusdc.com.br

Figure 3 - Suggestion of a graphic piece about the mechanism of the soap acting on the virus

Source: the authors (2021)

As shown on figure 3, the suggested graphic piece illustrates the correction of some of the main problems identified during the analyses. In order to improve concision, the text was rewritten, the unnecessary information removed, and technical terms were avoided. For clarity, the grid was simplified, and the visual groupings were organized to become more perceptible, with the necessary blank space surrounding each grouping. The hierarchy was better designed, avoiding the excessive use of bold and other emphasis that distract from the main parts.

9. Considerations

This exploratory study showed that some of the digital graphic pieces designed for the dissemination of information may be complex and difficult to understand due to a lack of simple use of ID guides and practices - small details, when not considered, make for a confusing message, preventing the actual meaning attribution for which it was designed.

The efficiency and efficacy of a message can be verified by experts even before using traditional tests with the persons for which the message was designed. A message is more than its content - ID aspects, when judiciously applied, influence the production of graphic pieces that are clearer, more concise among other attributes.

The case study presents one instance of analyses of one of the many pieces analyzed; and it serves as a blueprint to be followed by those who wish to create graphic pieces for the pandemic.

As expected, and pointed out throughout the text, this research raised some questions that are subject of future research:

- What are the differences in ID from the traditional Poster to a digital graphic piece?
- What is the best way to account for the differences among social media platforms?
- How to verify the meaning creation of digital graphic pieces “out in the wild” - that is, once they are widely disseminated to heterogenous groups?
- What are the meanings and actions that the current digital graphical pieces elicit?
- How do the pieces effect behaviour change?

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