Espalhando-se como uma doença: um relato breve sobre a influência de crenças conspiratórias e otimismo nas percepções de informações sobre a SARS-CoV-2

Spreading like a disease: a brief report on the influence of conspiratorial beliefs and optimism on perceptions of information about SARS-CoV-2

DOI:10.34119/bjhrv4n5-374

Recebimento dos originais: 22/09/2021
Aceitação para publicação: 22/10/2021

Carlos Manoel Lopes Rodrigues
Mestre em Psicologia Social, do Trabalho e das Organizações
Centro Universitário de Brasília (UniCEUB), Universidade de Brasília (UnB),
Laboratório de Pesquisa em Avaliação e Medida (LabPam/UnB), Brasília, Brazil
Postal Address: Centro Universitário de Brasília - UniCEUB), SEPN 707/907 - Campus Universitário, SEPN - Asa Norte, Brasília - DF, Brazil, Postal Code: 70790-075
E-mail: prof.carlos.manoel@gmail.com

Jonathan Jones dos Santos Pereira
Mestre em Psicologia Social, do Trabalho e das Organizações
Universidade de Brasília (UnB), Influência/Laboratório de Psicologia Social (Lapsocial/UnB), Brasília, Brazil
E-mail: jjones.sp@gmail.com

Angélica Nascimento de Oliveira
Mestra em Psicologia Social, do Trabalho e das Organizações
Universidade de Brasília (UnB), Influência/Laboratório de Psicologia Social (Lapsocial/UnB), Brasília, Brazil
E-mail: angelicandeoliveira@gmail.com

Juliana Alves Dantas Ferro Bucher
Psicóloga
Centro Universitário de Brasília (UniCEUB), Brasília, Brazil
E-mail: juliana.bucher10@gmail.com

Mariana Martins Pedersoli
Mestranda em Psicologia Social, do Trabalho e das Organizações
Universidade de Brasília (UnB)
E-mail: mariana.pedersoli7@gmail.com

Lucas Heiki Matsunaga
Mestrando em Governança Global e Desenvolvimento Sustentável
Tohoku University, Sendai, Japan
E-mail: lucas.matsunaga@gmail.com
RESUMO

A atual pandemia causada pelo novo coronavírus tornou-se uma crise de saúde mundial. Embora medidas como lavar as mãos e distanciamento social sejam eficazes para retardar a transmissão, a disseminação de desinformação online provou ser um grande obstáculo para a adesão massiva a essas práticas. Neste estudo, investigamos a influência das crenças conspiratórias, do otimismo e no nível de confiança nas instituições nas percepções de informações verdadeiras e falsas sobre o SARS-CoV-2 entre 365 participantes brasileiros (masculino n = 100, feminino n = 265). Os participantes tinham idades entre 18 e 74 anos (M = 33,61 anos, DP = 13,17 anos). O modelo estrutural de informação percebida sobre SARS-CoV-2, otimismo e crenças conspiratórias forneceu ajuste satisfatório para os dados ($\chi^2 [28] = 445,31, p = 0,001; CFI = 0,96; TLI = 0,93; RMSEA = .07 [IC 90% 0,03, 0,09] SRMR = 0,04$). Os resultados revelaram que participantes com maior nível de otimismo tenderam a discordar mais com informações falsas, enquanto pessoas com maior nível de crenças conspiratórias tenderam a aceitá-las mais e a discordar do conteúdo verdadeiro. Os resultados confirmam que os padrões observados na literatura são aplicáveis à atual pandemia. Também sugere que os esforços para fortalecer a credibilidade do governo e combater a desinformação devem ser redobrados.

Palavras-chave: Pandemia; Crenças Conspiratórias; Fake News.

ABSTRACT

The ongoing coronavirus disease pandemic has escalated to a world health crisis. Although measures such as handwashing and social distancing are effective to slow down transmission, the spread of misinformation online has proven to be a major obstacle to the massive adherence to those practices. Here we investigated the influence of conspiratorial beliefs, optimism, and the level of trust in institutions, on the perceptions of true and false information regarding SARS-CoV-2 among 365 Brazilian participants (male n = 100, female n = 265). Respondents ranged in age from 18 to 74 years (M= 33.61 years, SD = 13.17 years). The structural model of perceived information regarding SARS-CoV-2, optimism and conspiratorial beliefs provided satisfactory fit to the data ($\chi^2[28] = 445.31, p = 0.001; CFI = .96; TLI = .93; RMSEA = .07 [90% CI .03, .09] SRMR = .04$). Results revealed that participants with a higher level of optimism tended to disagree more with false information, while people with a higher level of conspiratorial beliefs tended to accept it more and disagree with true content. Findings confirm that patterns observed in the literature are applicable to the current pandemic. It also suggests that efforts to strengthen government credibility and combat misinformation should be redoubled.

Keywords: Pandemic; Conspiratory Beliefs; Fake news.

1 INTRODUCTION

The World Health Organization (WHO) defined the new coronavirus crisis as a pandemic in March, 2020. Based on that, several actions were carried out to stop its progression, with great investment in the diffusion of reliable information about the transmission of SARS-CoV-2, as ways of containing the cases of COVID 19. In this
context, the dissemination of scientifically-based information is paramount for population adherence as protective actions (Jolley, & Douglas, 2014; Medeiros, et al., 2021; Van Bavel et al., 2020). The level of knowledge about the pandemic, personal factors like optimism and trust in governments and institutions are important predictors for appropriate behaviors to prevent contamination of SARS-CoV-2 (Brzezinski et al., 2020; Pennycook et al., 2018).

However, as dangerous as SARS-CoV-2, the spread of fake news poses a general risk to public health policies (Vosoughi et al., 2018). False and alarming information tend to occur due to the lack of critical evaluation of the source (Pennycook, & Rand, 2018) and influence personal factors such as beliefs in conspiracy theories (Darwin et al., 2011) or political beliefs (Modesto et al., 2020), which in turn is related to the level of trust in society and institutions, enhanced by their social networks (Spohr, 2017). Besides, conspiracy beliefs have significant relationships with psychopathological traits (Barron et al., 2014; Brotherton, & Eser, 2015; Oliver, & Wood, 2014; Pennycook, & Rand, 2018) which in a pandemic situation can be accentuated (Brown et al., 2020) generating a situation of psychological distress and risky behaviors for themselves and others in terms of adherence to pandemic containment actions (Galli, & Modesto, 2021; Jolley, & Douglas, 2014).

Thus, the aim of this study was to identify the influence of conspiratorial beliefs, optimism, and the level of trust in institutions, on the perceptions of true and false information regarding SARS-CoV-2.

2 METHODS
Participants
Participants were recruited using opportunistic sampling via social networks. Participants were recruited only if they were 18 years old or older. The final sample was composed of 380 Brazilian participants (male n = 100, female n = 265). Respondents ranged in age from 18 to 74 years old (M= 33.61 years, SD = 13.17 years).

Materials and procedure
Data collection was conducted from 13 to 20 March 2020, covering the first week after the World Health Organization declared SARS-CoV-2 and the disease it causes a global pandemic. The data was collected using an online survey tool. The first part of the form presented the information related to the research, the contacts of the researchers and
the consent form. After accepting the term, participants were redirected to collect demographic data and then to the other instruments described below.

**Perceptions of information regarding SARS-CoV-2** This instrument was developed ad hoc for this study to measure 3 factors: 1) Compliance with true information (CTI, 11 items), 2) Compliance with false news (CFN, 7 items); and 3) Trust in Institutions (TI, 4 items). Construction of CTI items was based on WHO guidelines on SARS-Cov-2 (e.g., "Washing hands before touching mouth, nose, or eyes helps prevent coronavirus infection"); "Infected people can spread the disease." coronavirus by sneezing or coughing "). The items were developed from the compilation of the main false news about the pandemic current at the time to build the items with CFN (e.g. “Drinking hot water or hot teas kills the virus”; “If the person holds their breath for 10 seconds without cough, they're not infected.”) The TI items were composed of statements about credibility of information from official bodies and the press (e.g. "The World Health Organization releases reliable information about the new coronavirus"). For each item, participants answered a Likert agreement scale. The internal consistency in this study proved to be adequate (α = 0.84, λ2 = 0.85).

**Optimism** - The 10-item Brazilian Version of The Revised Life Orientation Test (LOT-R, Bastianello et al., 2014). The LOT-R in this study showed acceptable internal consistency (α = 0.71, λ2 = 0.71)

**Conspiratorial beliefs** - The Brazilian version of the Generic Conspiracist Beliefs Scale (GCBS-Br, Matsunaga et al., 2019), a 15-item scale structured on four factors: 1) illegal government conduct (IGC); 2) global malevolent conspiracies (GMC); 3) extraterrestrial cover-up (EC); 4) personal well-being and information control (PWIC). The internal consistency of the instrument was suitable in this study (α = 0.82, λ2 = 0.83). Although originally separated, the factors personal well-being and information control were grouped together in this study due to the psychometric properties findings of the scale in the Brazilian cultural context (Matsunaga et al., 2019).

**Data analysis**

Structural Equation Modelling (SEM) was used to explore the relationship between conspiratory beliefs, optimism, trust in institutions and agreement with true or false information. To estimate the model, it was used the robust maximum likelihood (MLR) estimator, and to analyze the adequacy structural model multiple goodness-of-fit indices were calculated. These analyzes were performed with software R (The R
Foundation for Statistical Computing; Vienna, Austria), version 3.4.2. Statistical significance was established at $p = 0.05$ and 95% confidence intervals.

3 RESULTS

The measurement model of perceptions regarding SARS-CoV-2's information provided a good fit to the data ($\chi^2[44] = 159.81, \ p < .001; \ CFI = .93; \ TLI = .92; \ RMSEA = .05 \ [90\% \ CI .05 - .06]; \ SRMR = .07$), indicating the appropriateness of using the instrument in this research.

The results did not indicate significant correlations between sociodemographic data and scores on the instruments applied or significant differences between men and women in this study. Except for the age that had a significant correlation with the EC factor scores of the GCBS-Br instrument ($r = 0.17, \ p <0.05, \ [95\% \ CI 0.02 - 0.32]$), however, this correlation can be considered low. The mean scores and standard deviations obtained for each instrument can be seen in Table 1.

Table 1 Means, Confidence Intervals, Standard Deviation and Standard Error to Perceptions of Information Regarding SARS-CoV-2, Optimism and Conspiratorial Beliefs

<table>
<thead>
<tr>
<th>Measures</th>
<th>Mean (95%CI)</th>
<th>SD</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceptions of information regarding SARS-CoV-2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compliance with true information</td>
<td>4.33 (4.22 – 4.43)</td>
<td>0.71</td>
<td>0.06</td>
</tr>
<tr>
<td>Compliance with fake News</td>
<td>1.63 (1.54 – 1.72)</td>
<td>0.71</td>
<td>0.04</td>
</tr>
<tr>
<td>Thrust in Institutions</td>
<td>3.60 (3.47 – 3.72)</td>
<td>0.78</td>
<td>0.06</td>
</tr>
<tr>
<td>Optimism</td>
<td>2.03 (1.95 – 2.10)</td>
<td>0.49</td>
<td>0.04</td>
</tr>
<tr>
<td>Conspiratorial beliefs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illegal government conduct</td>
<td>2.45 (2.30 – 2.61)</td>
<td>1.00</td>
<td>0.08</td>
</tr>
<tr>
<td>Global malevolent conspiracies</td>
<td>2.45 (2.29 – 2.60)</td>
<td>1.01</td>
<td>0.08</td>
</tr>
<tr>
<td>Extraterrestrial cover-up</td>
<td>1.73 (1.60 – 1.86)</td>
<td>0.87</td>
<td>0.07</td>
</tr>
<tr>
<td>Personal well-being and information control</td>
<td>2.34 (2.23 – 2.46)</td>
<td>0.78</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Note: 95% CI = 95% confidence intervals; SD = standard deviation; SE = standard error (SE). The SEM model of perceived information regarding SARS-CoV-2, optimism and conspiratorial beliefs provided satisfactory fit to the data ($\chi^2[28] = 445.31, \ p < .001; \ CFI = .96; \ TLI = .93; \ RMSEA = .07 \ [90\% \ CI .03, .09] \ SRMR = .04$)

The SEM model of perceived information regarding SARS-CoV-2, optimism and conspiratorial beliefs provided satisfactory fit to the data ($\chi^2[28] = 445.31, \ p < .001; \ CFI = .96; \ TLI = .93; \ RMSEA = .07 \ [90\% \ CI .03, .09] \ SRMR = .04$)
4 DISCUSSION

The findings of this study reveal how tendencies to believe in conspiratorial beliefs could predict compliance with fake news and distrust of modern institutions (Jolley, & Douglas, 2014). The negative associations between CB and TI and also, between CB and CTI found are mainly aligned with the BPC, GMC and PWIC dimensions, with the relationships already identified between conspiracy beliefs and paranoid symptoms (Barron et al., 2014; Darwin et al., 2011; Oliver, & Wood, 2014). The characteristics of the pandemic as a global event and with wide participation of international organizations and local governments may have a particular effect on these dimensions due to a potentializing effect of paranoid thoughts typical of the health emergency situation (Brown et al., 2020).

In particular, the effect of PWIC on CB can be enhanced by distrust in relation to the integrality and intentions behind the information provided by health institutions and governments. In addition to the paranoid component, this effect may be associated with the ability to understand the information of a scientific nature and the very functioning of science, knowledge that has an important predictive role in preventive behaviors in the face of the pandemic (Brzezinski et al., 2020; Pennycook et al., 2018).

The positive relationship between OP and TI, as well as with CTI, was expected, since it is assumed that more optimistic people tend to have greater confidence in
institutions and, in this specific context, tend to attribute greater veracity to the CFI. In addition, the relationship between OP and CFN reinforces other results that associated a naive optimism regarding the pandemic and the acceptance of erroneous but optimistic information regarding the epidemic (Pennycook et al., 2018). The fact that data was collected at the beginning of the pandemic in Brazil and information was not yet massively publicized, may underlie the positive relationship, but low between CFI and CFN.

Thus, the results point to the need to combat fake news and to invest in communication processes, transparency, and improving the image of institutions. These actions, in addition to a potentially positive effect on the identification and acceptance of true information (Brzezinski et al., 2020; Spohr, 2017; Van Bavel et al., 2020; Vosoughi et al., 2018), can also help to control negative effects on the mental health of groups with greater susceptibility to fake news and the development of paranoid ideation, which within mental health they are more likely to be affected by this news. (Jolley, & Douglas, 2014, Brown et al., 2020)

Some limitations must be pointed out in this study. The lack of a measure to identify paranoid characteristics of the sample and to evaluate the behavior adopted during the pandemic appears as important limitations. Another limitation relates to the use of a relatively small sample. Notwithstanding, rapid collection was prioritized to avoid the effects of information overexposure during the pandemic. In the face of these findings, this study provides initial information for the development of new studies, particularly in relation to conspiracy beliefs, fake news, behavior during the pandemic and the effects on mental health. We suggest futures studies that could verify the impact of (a) Personal relevance, (b) Peripheral cues, (c) Information quality, (d) Social proof, (e) need for cognition, (f) morality and (g) cultural differences on trust in fake news. Also, fear is another variable that is largely used in public health campaigns that should be analyzed also in the content of Fake News.
REFERENCES


