

## Editorial

# Psychological Roots of Questionable Health Practices

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Questionable health practices, be it non-adhering to official recommendations or resorting to non-evidence based ones, pose a considerable burden to public health. Research in this special issue explores the psychological roots of proneness to this type of health behavior. The authors look into individual differences in personality traits, cognitive styles, but also situational factors such as institutional trust and feeling of economic/health threat as predictors of a broad range of behaviors: non-compliance with COVID health measures/prescribed prophylactic regimen for chronic illnesses, avoiding vaccination, but also endorsing supplements and herbal remedies or alternative psychotherapies. This collection of papers offers valuable insights that could be implemented in tailoring short-term (pandemic-related messages) and long-term (building more trust in institutions or science) guidelines for health communicators.

*Key words:* questionable health practices, recommended health behaviors, COVID-19, psychological roots

Non-adherence to official medical recommendations increases mortality, threatens overall public health, and presents a financial burden to the health system. WHO listed vaccine hesitancy and antibiotic overuse in the top ten global health threats in 2019; the current COVID-19 pandemic further testifies to its importance. Typically viewed as harmless, however, there are complementary/alternative health practices that can also lead to adverse effects, interaction with the official treatments, or avoidance of the official treatments. There are strong reasons to explore the psychological roots of these questionable health practices (QHP), as that can help to tailor public health communications. If we better understand the profile of consumers more prone to resort to practices not supported by evidence, we can target them more specifically; if

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we investigate the reasoning behind poor health choices, we can try to challenge it and support people in making more informed decisions (Lazarević et al., 2021; Šrol et al., 2021; Teovanović et al., 2021; van Mulukom et al., in press). We now know that confronting misinformation with correct information might not be enough, and thus we need more evidential information on how to approach consumers so as not to further alienate them but instead make them potential partners. By QHP we assume both not adhering to official medical advice (be it public health measures to prevent COVID 19 spread, or self-medicating of prescription drugs) and resorting to pseudoscientific practices – PSP (non-evidence-based supplements; dietary regimens – paleo diet, keto diet, alkaline diet; complementary/alternative medicine – CAM practices – homeopathy, acupuncture, reiki).

This special issue comprises a collection of papers examining a wide range of QHP, from not adhering to the prescribed prophylactic treatment, avoiding vaccination or not adhering to public health advice in the pandemic, to embracing non-evidence-based complementary and alternative treatments in general; or specifically for building immunity against viruses, as well as favoring unproven alternative psychotherapeutic treatments, such as NLP or Bach flower remedies over the conventional ones (see Table 1). The content of this special issue suggests that the global pandemic shaped the interests of researchers, as five out of nine papers investigated the psychological roots of COVID-19 related health behaviors.

Table 1 *Overview of research studies in the special issue on Psychological roots of questionable health practices*

Authors	Type of questionable health behavior	Main topic of the study
Kušnírová & Kačmár	Non-compliance with COVID preventive measures	The Big-five traits predicted compliance with preventive measures both directly and indirectly, via concerns over coronavirus and trust in institutions.
Stanković, Lazarević, & Knežević	Non-adherence to recommended health behaviors and adherence to PSP	Conspiracy mentality and attachment anxiety mediated the effects of personality traits on low adherence to recommended health behaviors – RHB, and greater use of pseudoscientific practices – PSP.
Čavojská, Ballová Mikušková, & Šrol	Non-compliance with COVID preventive measures	COVID-pseudoscientific beliefs and feelings of health (but not economic) threat predicted non-complying with preventive measures.

Table 1 continues

Table 1 (continued)

Authors	Type of questionable health behavior	Main topic of the study
Butković, Bago, Preložnik Zupan, Faganel Kotnik, Prga Borojević, Bačić Vrca, & Zupančić Šalek	Non-adherence to hemophilia prophylaxis therapy (clotting factor replacement)	Depressive symptoms predicted medication adherence levels.
Miguel, Valentim, Carugati, & Selleri	Parental hesitancy towards pediatric vaccination	Parental vaccine hesitancy was related to higher individualism values, preference for natural immunity, and conspiratorial thinking.
Mijatović, Šljivić, Tošić, Conić, Petrović, & Žeželj	Willingness to try and recommend non-evidence-based supplements and herbal treatments	Portraying the CAM industry as profitable and unregulated (Big Suppla) decreased endorsement of its products.
Vujić & Dinić	Endorsement of COVID-related pseudoscientific practices and frequency of CAM use in general	Cyberchondria predicted more COVID-related pseudoscientific practices and more general CAM endorsement both directly and via conspiracy mentality.
Budžak & Branković	Willingness to try and recommend non-evidence-based alternative psychotherapies (Bach flower remedy and Neuro-Linguistic Programming) and preference for an alternative over conventional psychotherapy	CAM health beliefs and high self-esteem predicted preference for alternative psychotherapies, while rational thinking style had the opposite effect; intuitive thinking style had indirect effect via an increase in CAM health beliefs.
Zelič, Berič, & Kobal Grum	Non-compliance with COVID preventive measures, COVID vaccine hesitancy	COVID-19 conspiracy beliefs predicted all three health-related outcomes when sociodemographic variables were controlled for; this relationship was mediated by perceived coronavirus threat.

The psychological roots of QHP in this issue encompass basic dispositions such as personality traits, proneness to depression or cyberchondria, global thinking styles, avoidance and anxiety attachment styles; various types of irrational beliefs such as conspiratorial, personal irrational beliefs; and more specific content-relevant beliefs such as attitudes toward CAM health behaviors. Several groups of authors investigated personality determinants of health behaviors. **Kušnírová & Kačmár** (this issue) studied the role of Big five traits in non-compliance with prescribed COVID measures. **Čavojević et al.** (this issue) were also interested in non-compliance with prescribed COVID measures, but in addition to personality study, they explored the predictive power of feelings of threat. **Butković et al.** (this issue) explored the role of depression

in adhering to prescribed medical treatment in patients with hemophilia. **Stanković et al.** (this issue) investigated the mediating role of irrational thinking and beliefs (broadly defined to encompass REBT irrational beliefs, anxiety and avoidance attachment, and conspiratorial thinking) in the relationship between the HEXACO (Ashton & Lee, 2007) and Disintegration trait (Knežević et al., 2017) and higher inclination towards endorsing questionable health practices. Irrational beliefs as mediators were also the topic of a paper by **Vujić & Dinić** (this issue), who studied the role of conspiracy in mediating the relationship between cyberchondria and COVID-19 health behaviors, and **Miguel et al.** (this issue) who took a socio-cognitive perspective and its implications on the dynamics organizing representation of vaccines and pediatric vaccination behavior. Conspiracy beliefs and their role in non-compliance with preventive measures and COVID-19 vaccine hesitancy were the topics of interest of **Zelić et al.** (this issue).

The contributions to this special issue differed in their design: there were experimental studies evaluating the effectiveness of interventions (for example, the effects of reading fictitious news pieces portraying the CAM industry as either powerless and non-profit oriented (Big Suppla) or powerful and profit-oriented (Baby Suppla) (**Mijatović et al.**, this issue), or the effects of exposing participants to vignettes promoting two non-evidence-based psychotherapy modules (**Budžak & Branković**, this issue). Other studies used a cross-sectional design, but some on impressively large cross-cultural samples (e.g., **Kušnírová & Kačmár** who report results from a combined sample of more than seven thousand participants from so-called Visegrád Four countries – Czech Republic, Hungary, Poland, and Slovakia).

Although it was not obligatory but mainly encouraged, the editors were also glad to witness that eight out of nine papers endorsed open science practices, so they made data, materials, and analytical scripts available to the public.

Finally, this special issue was conceived with a potential application in mind. The majority of the selected papers do offer concrete policy recommendations aimed at discouraging QHB. Some of the recommendations are short-term and refer to public health messaging, such as how to tailor them to specific audiences (personality studies), how to address irrational, especially conspiratorial beliefs, and how to make audiences aware of the limits of CAM and unfounded beliefs of its benevolence. In addition, a portion of the results points to the importance of long-term policies, such as building (rebuilding) institutional trust and trust in science.

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