

The potential effects of Zamzam water on mental health

Los posibles efectos del agua de Zamzam en la salud mental

Hüseyin Çaksen ^{1,a}

¹ Necmettin Erbakan University, Faculty of Medicine. Konya, Türkiye.

^a Pediatric Neurologist and Geneticist, Developmental- Behavioral Pediatrician, MD, PhD.

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Corresponding author

Prof. Hüseyin Çaksen, MD, PhD.
Address: Divisions of Pediatric Neurology and Genetics and Behavioral-Developmental Pediatrics, Department of Pediatrics, Faculty of Medicine Necmettin Erbakan University, 42090 Meram, Konya, Türkiye.
Email: huseyincaksen@hotmail.com
Telephone: +90 332 223 66 84; Facsimile: +90 332 223 61 81 and +90 332 223 61 82

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Dear Editor:

Mental health is a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. It has intrinsic and instrumental value and is integral to our well-being ^[1]. There has been an increasing emphasis on the role of dietary habits in supporting optimal mental health ^[2]. The concept of psychobiotics has emerged, describing exogenous factors that influence the microbiota (e.g., via probiotics, prebiotics, diet) with bacterially mediated positive effects on mental health ^[2]. Numerous studies showed that some foods and beverages have positive effects on mental health. For example, the green tea amino acid, L-theanine, frequently consumed, is associated with several health benefits, including improvements in mood, cognition and a reduction of stress and anxiety-like symptoms ^[3].

Zamzam water (ZW), which comes from an underground spring in Mecca, Kingdom of Saudi Arabia, has been considered a blessing for Muslims throughout history. ZW has unique properties in terms of its mineral profile, isotopic composition, optical profile, physico-chemical, radiological and crystallographic properties. It is unique in nature because of these natural characteristics and “hard carbonated type water” ^[4]. The unique composition of ZW may ensure several nutraceutical and functional benefits that work in synergism with other agents to impart beneficial effects, or to thwart harmful effects ^[4]. Furthermore, several studies showed that ZW has antioxidant, anti-inflammatory, antimicrobial, immune modulatory, and oncolytic properties ^[4]. Herein, we discuss the potential effects of ZW on mental health to draw attention to the therapeutic feature of ZW.

Although ZW is widely consumed by people for protection and/or healing from physical, mental, social and spiritual disorders for more than 1,440 years, there are scarce studies about the effects of ZW on mental health in the literature. Najam and Riaz ^[5] reported that ZW posed anxiolytic and antidepressant effects, and increased learning and memory in mice. ZW has also positive effects on anxiety and depression in diabetic rats ^[6]. Co-treatment with ZW and methadone significantly prevented the downregulation of mu-opioid receptor by promoting the endocytosis of mu-opioid receptor as compared to methadone and ZW treatment alone in morphine-dependent rats ^[7]. Combination of ZW and methadone also significantly prevented the overshoot production of cAMP level in human primary glioblastoma cell line (U-87 MG) ^[8]. These findings suggest that ZW may be useful in the treatment of anxiety, depression and opioid use disorder in humans.

Recently, Trisna ^[9] noted that ZW was perceived in people performing the Hajj not only as a regular water but also as a spiritual symbol of healing, believed to bring peace, relieve minor illnesses, and strengthen spirituality. The use of language filled with religious metaphors reinforced the performative meaning within the subjects' narratives ^[9]. Cita and Mizan ^[10] reported the average score of quality of life on physical,



psychological, social, environmental dimensions and general quality of life increased with mind-body-spirit therapy including drinking ZW in patients with chronic kidney failure.

In conclusion, limited animal and clinical studies have shown some beneficial effects of ZW on mental health. We hypothesize that ZW may affect mental health by influencing the microbiota-gut-brain axis or the hypothalamus-pituitary-adrenal axis due to its antioxidant, anti-inflammatory, antimicrobial and immunomodulatory properties. We recommend that randomized-controlled, observational and qualitative studies should be performed to determine the potential effects of ZW on mental health. These studies will fill the gap in the literature and may guide to health professionals in clinical practice.

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