Current Global Trends in Behavioral Medicine

Maria Danai Vichou[1], Georgios Pilafas[2], Penelope Louka[3]

[1]Psychology student, University of Derby (UK) at Mediterranean College campus, Athens, Greece
[2]Programme Leader 'MSc Applied Psychology', University of Derby (UK) at Mediterranean College campus, Athens, Greece
[3]Associate Provost (Research), Mediterranean College, Greece

Corresponding Author: Maria Danai Vichou

ABSTRACT

Behavioral medicine is a multidisciplinary field that draws upon behavioral and psychological principles in order to address and manage physical health conditions following George Engel's biopsychosocial model. This critical review examines the latest trends of the field, focusing on advancements that have deepened scientists' understanding about health and disease. These trends include the incorporation of digital health technologies, such as mobile apps and wearable sensors, to enhance the monitoring of health behaviors. In addition, precision medicine that takes into account the genetic and lifestyle factors, along with mind-body interventions such as yoga, meditation, and hypnosis, have been found to improve treatment outcomes and to promote the overall well-being of individuals. Social determinants of health and the implementation of health coaching and personalised health communication strategies may also contribute to achieving health equity and patient engagement. Lastly, health behavior-change techniques such as goal setting and self-monitoring have been found to significantly influence individuals by promoting healthier behaviors. The emergence of these trends emphasizes the positive outcomes that behavioral medicine may have on health outcomes while highlighting the need for additional research to ensure successful implementation.

Keywords: Behavioral Medicine, Current Trends, Health Management

INTRODUCTION

Behavioral medicine is a multidisciplinary field that focuses on the application of behavioral and psychological principles to the prevention and treatment of physical health problems (Theofilou, 2023). By employing George Engel's biopsychosocial model, this approach aims to comprehend the interplay of lifestyle, behavior, and environmental factors with biological processes, which ultimately affect health outcomes (Engel, 1981; Johnston & Johnston, 2017). Over the years, behavioral medicine has rapidly evolved, with emerging trends that contribute to a better understanding of health and disease (Okifuji & Neikrug, 2019). This article seeks to provide a critical analysis of the latest trends in behavioral medicine, specifically focusing on significant advancements in the field. It begins by providing an overview of behavioral medicine, followed by an examination of the new trends.

OVERVIEW OF BEHAVIORAL MEDICINE

Behavioral medicine is an interdisciplinary field that integrates various disciplines, including psychology, medicine, nursing,

social work, and public health (Alfaifi et al., 2018). It focuses on the impact of behavior, lifestyle, and environmental factors on the manifestation and regulation of health issues. Bevavioural medicine attempts to enhance health and prevent diseases by addressing and modifying unhealthy behaviors such as smoking, lack of physical exercise, and poor eating habits (Nigg et al., 2016).

The field of behavioral medicine is based on the biopsychosocial model of health. This model recognizes the importance of biological, psychological, and social factors in the development and treatment of health issues (Engel, 1981; Wilson, 2023). This model supports that health is not merely the absence of disease but also a holistic state encompassing physical, mental, and social well-being (Engel, 1981; Wilson, 2023). Furthermore, it acknowledges that health may not be solely an individual phenomenon but rather one that is shaped by social and environmental factors (Engel, 1981; Wilson, 2023).

Digital Health
Recent research in behavioral medicine has highlighted the potential of integrating digital technology to promote health behavior (Dallery, 2015). This encompasses the employment of mobile devices, wearable sensors, and available therapeutic assistance to evaluate and adjust risk factors. The adoption of cutting-edge technological methods in assessment and intervention has also been emphasized, particularly focusing on digital phenotyping and technology-enabled approaches (Nugent et al., 2023). Furthermore, the importance of digital platforms in accelerating scientific research, facilitating collaboration, and improving public health has been underscored, with a call to follow established guidelines during this digital transformation (Hesse, 2020).

More precisely, McKay et al. (2018) found that the use of mobile health apps improved medication adherence and reduced hospitalization rates among patients with chronic conditions. Additionally, Wisniewski (2019) reported that mobile apps have helped identify clinically relevant behavior trends in individuals with psychosis. Furthermore, Gualtieri et al. (2016) coined that wearing an activity tracker can lead to improved health outcomes. Specifically, she found that older adults with chronic conditions who used trackers experienced increased physical activity and improved overall health. Similarly, O'Brien et al. (2015) reported that older adults who used wristband activity trackers showed a decrease in waist circumference. While Brickwood et al. (2019) and Franssen et al. (2020) both found that the use of consumer-based wearable activity trackers led to improved cardiometabolic health in various populations, including those with chronic diseases. Nonetheless, the adoption and perceived efficacy of digital technology tools can be influenced by several factors, such as education, age, and self-efficacy (Bhuyan et al., 2016). Young individuals, in particular, show more interest in apps that support health behavior change, with a focus on accuracy, security, and the ability to record and track behavior and goals, compared to older individuals (Dennison, 2013).

Precision Medicine
Precision medicine is an emerging field that seeks to tailor medical treatments to individual patients based on their genetic, environmental, and lifestyle factors (Scala, 2022). It aims to improve health outcomes by identifying the most effective treatments for individual patients, reducing the likelihood of adverse reactions to medications, and reducing healthcare costs (Jamenos & Longo, 2015). Behavioral medicine can contribute to precision medicine by identifying behavioral and lifestyle factors that can influence treatment outcomes (Roche, 2020). However, difficulties with evidence generation, data sharing, and infrastructure limit the full

potential of precision medicine (Dzau, 2016).

Utilizing genetic testing to guide treatment decisions is a promising application of precision medicine in behavioral health. Specifically, Lerman et al. (2014) discovered that when smokers were given genetic information about their susceptibility to nicotine addiction and received personalised behavioral counseling, their likelihood of successfully quitting increased significantly (Colijn et al., 2017). This highlights how precision medicine might be able to make behavioral interventions more effective by taking into account differences between people's genetic predispositions and other important factors (Colijn et al., 2017). Moreover, another application of precicion medicine involves exploring the use of biomarkers to customize treatment plans for individuals with mental health conditions (Wolpert, 2016). The identification of particular biomarkers that are present in behavioral disorders can help physicians create tailored therapies that target the mechanisms behind the manifestation of these conditions (Wolpert, 2016). Furthermore, farmacogenomics research has the potential to improve precision medicine in mental health by increasing current understanding of how genetic variants affect an individual's reaction to psychiatric drugs (Adams et al., 2018). Clinicians can enhance treatment results by utilizing genetic indicators to anticipate pharmaceutical response and probable side effects, hence optimizing drug selection and dose (Adams et al., 2018).

Mind-Body Interventions
Mind-body interventions have become more popular nowadays due to their ability to alleviate stress and improve both mental health and physical well-being (Shonin et al., 2013). These interventions include meditation, yoga, and hypnosis, and they have been found to enhance relaxation, reduce anxiety and depression, and strengthen the immune system (Sliwinski et

al., 2014). Furthermore, these techniques may assist in pain management, insomnia, and overall cognitive function (Su et al., 2016).

In their study, Su et al. (2016) developed a mindfulness program focused on the alleviation of stress for patients who suffered from chronic pain. More precisely, they found that the patients exhibited better life quality and well-being as well as reduced symptoms of anxiety and depression. Similarly, Zhang et al. (2019) provided evidence to support the notion that mindfulness and meditation may have a substantial impact on reducing pain, anxiety, and depression while also improving attention, cognitive function, and overall psychological well-being. Furthermore, literature suggests that meditation is not only an excellent technique to improve an individual's sleep quality and relaxation but also a beneficial tool for the immune system, indicating its potential advantages in enhancing immunity against diseases (Black et al., 2015; Black & Slavich, 2018).

By their turn, yoga and hypnosis also play a crucial role in an individual's mental and physical well-being. The former, which has gained popularity in the Western world, combines the mental and physical factors to treat stress, anxiety, depression, and, in some cases, various mood disorders (Büssing et al., 2012; Schulze et al., 2021; Yadla et al., 2024). The latter has demonstrated positive outcomes in managing chronic pain by decreasing the intensity and discomfort of pain, as well as improvement in the duration and quality of sleep for individuals who suffer from insomnia and sleep abnormalities (Jensen & Patterson, 2014; Lam et al., 2018). This highlights the potential employment of hypnosis as a non-pharmacological treatment for sleep disorders.

Social Determinants of Health
The social determinants of health refer to the socioeconomic and environmental factors that impact the health outcomes of

both individuals and populations (Short & Mollborn, 2015). These factors include income, education, housing, and access to healthcare and significantly influence health behavior and the overall well-being of individuals (Short & Mollborn, 2015). Over the years, behavioral medicine was mostly concentrated on individual-level factors that might impact health. Nevertheless, nowadays, there is an increasing trend to acknowledge and care for the socioeconomic factors that are responsible for health inequalities and that affect the overall health of a society (Short & Mollborn, 2015).

According to Thornton et al. (2016), behavioral medicine can address social determinants through interventions and programs that provide support for employment, housing, education, and access to healthcare services. This can be done with the collaboration of community organizations and public health authorities in creating and implementing a plan focused on these essential fields (Thornton et al., 2016). Furthermore, behavioral medicine practitioners may advocate for health equity by proposing policy changes (Arista et al., 2014). Specifically, these may include affordable housing initiatives, equal access to educational opportunities, and healthcare reformation in order to guarantee fair and equal access to services for everyone (Arista et al., 2014). Nonetheless, it is important to note that this multifaceted approach to changing the health disparities cannot be accomplished without the proper education and training of healthcare providers to interact with and treat patients in a manner that promotes health outcomes for all individuals in society (Nigg et al., 2016).

Health Coaching
Health coaching has become a prominent trend in the field of behavioral medicine, providing an innovative approach to patient treatment and health management. This entails the close collaboration between a health coach and a patient to establish health objectives, create customized strategies, and

offer continuous support. (Bolton et al., 2019). Health coaches play a crucial role in their patients' lives, significantly impacting them by assisting in making permanent lifestyle changes, successfully managing chronic conditions, and helping them navigate the intricate healthcare system (Spring et al., 2013).

According to Yang et al. (2020), health coaching has been found to increase patients' self-efficacy and satisfaction, improving their overall healthcare experience. It is considered that individuals who engage in health coaching exhibit higher levels of self-efficacy in managing their own health due to their active participation in their healthcare, which in turn has been associated with improved health outcomes (Adams et al., 2013; Park et al., 2017). Furthermore, the active participation in ones own healthcare has been found to increase the locus of ones control, enabling patients to understand that they can be responsible for their own health outcomes, enriching their experience, and making them take charge for themselves (Ammentorp et al., 2013; Pourhoseinzadeh et al., 2017).

Personalised Health Communication
Personalised health communication involves tailoring health messages according to the patient's specific attributes, which include their demographics, health literacy levels, and health behaviors. This approach can potentially increase patient engagement, enhance treatment adherence, and ultimately result in improved health outcomes (D'Agostino et al., 2017). Personalised health communication in medicine is a crucial strategy for optimizing healthcare systems because it requires categorizing individuals into subpopulations based on differences in disease etiology, development, prognosis, susceptibility, and treatment response (Evers et al., 2012).

According to Sharkiya (2023), a great strategy could be personalised messages that provide customised suggestions to the patients depending on their eating habits,

exercise routine, and medical background. Morever, mobile health apps could be employed, offering recommendations tailored to the user's health data and profile (Ghose et al., 2021; Tong et al., 2021). These apps could provide personalised reminders for medication intake, propose physical activities based on the user's fitness levels, and offer dietary tips to meet one's nutritional requirements (Ghose et al., 2021; Tong et al., 2021). Furthermore, Cui and Zhang (2021) suggested that an e-mail campaign created by a health provider could further assist in personalised health communication. This could be feasible by encompassing tailored information and resources that align with an individual's health literacy levels, preferences, and past engagements with the healthcare system (Cui & Zhang, 2021). Through these communication strategies, healthcare providers might offer better support for individuals, leading to more profound and sustainable health behavior changes.

Health Behavior Change Techniques
Health behavior change techniques are evidence-based strategies that can be used to promote health behavior change (Paul et al., 2022). These techniques include goal setting, self-monitoring, social support, feedback, and reinforcement and have been extensively researched in the field of behavioral medicine (Xiao, 2019). According to Mohr et al. (2014), health behavior change techniques can be used to promote healthy behaviors, such as physical activity, healthy eating, and smoking cessation. The ability to monitor one's own progress and receive immediate feedback can serve as a strong source of motivation, enabling individuals to observe the effects of their actions and make any necessary adjustments (Laitner et al., 2016). Furthermore, in turn, behavioral medicine can contribute to the development and implementation of effective health behavior change techniques by conducting research on their effectiveness, providing training and support to healthcare professionals, and

developing guidelines for their use (Michie et al., 2011).

CONCLUSION
Behavioral medicine is a rapidly evolving field that seeks to improve health outcomes by applying behavioral and psychological principles to the prevention and treatment of physical health problems. The new trends in behavioral medicine, such as digital health, precision medicine, mind-body interventions, social determinants of health, health coaching, personalized health communication, and health behavior change techniques, have contributed to a better understanding of health and disease. These trends have the potential to improve health outcomes by providing patients with access to health information, promoting behavior change, and addressing social and environmental factors that influence health. Further research is needed to evaluate the effectiveness of these trends and to develop strategies for their implementation in healthcare settings.

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