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WPA Position Statement on Global Digitalization in Mental Health and Care/ GA23.10.18

1. Introduction

Digitalization in Mental Health and Care is the process of implementing and using digital health technologies in supporting and transforming mental health systems and services to ensure availability and access to universal quality health coverage. Overall, Digitalization in Mental Health and Care represents an “umbrella” concept and term that includes a wide range of technologies and technology-aided approaches that can enhance health and healthcare service delivery.

The COVID-19 pandemic has accelerated the digital progression in mental health services over the last years, intensifying the delivery of mental health and care by digital tools and platforms (Dave et al., 2020; Mucic et al., 2021), especially for young people (Rosič et al., 2020). Indeed, one of the most remarkable impacts of the COVID-19 outbreak on psychiatry is that it precipitated a global adoption of digital tools, also including low- and middle-income countries (LMICs) (Gaebel and Stricker, 2020; Ramalho et al., 2020a; Orsolini et al., 2021).

The World Psychiatric Association (WPA), in its 2017 Position Statement (Wise et al., 2017), focused on a narrower concept of e-Mental Health. Since then, also due to the Covid-19 pandemic and its associated public health restrictions, the use of digital tools in mental health and care has dramatically expanded worldwide, requiring a repositioning of WPA and its future action plans.

2. Digital health technologies and interventions

Digital health technologies comprise all current digitally driven tools and interventions aimed at care delivering, care (self-)monitoring, diagnostic and therapeutic processes. The list of digital tools and interventions in psychiatry is continuously growing and currently includes the following:

- *Telemental Health Care* is the use of real-time and interactive synchronous video- and/or audio-conferencing as well as asynchronous technology modalities (often referred to as ‘store-and-forward’) (Hilty et al., 2013). Telemental health may significantly improve patients’ and mental health providers’ access to healthcare, reduce the costs of mental health care, and help ensure continuity of care, particularly among rural areas and remote geographic locations with limited access (Langarizadeh et al., 2017; Tahir et al., 2021). Telemental health care has demonstrated to be cost effective, by providing efficient and adaptable solutions in the treatment of several mental disorders, including mood, anxiety and psychotic spectrum disorder (Hilty et al., 2013).

- *Internet-based interventions (IBIS), stand-alone (guided or unguided) or blended care* include interventions based on or supported by Internet or digital technologies (i.e., web and mobile-based), with varying degrees of human support. IBIS can help patients with symptomatology self-management and -monitoring, facilitating precision interventions and preventive strategies and treatments, with blended approaches being even more effective than no treatment controls (Erbe et al., 2017). IBIS appears to be slightly more effective compared to usual care in terms of quality-adjusted life years gain, with cost-effectiveness comparable to traditional usual care (Rohrbach et al., 2023).

- *Digital Therapeutics* (DTx) are digital technologies offering therapeutic interventions to alleviate a disease through a specific software or algorithm (Torous et al, 2021), often embedded into smartphone applications (“apps”) and/or integrated digital platforms. Many DTx have been developed for stress reduction or induction of mental wellbeing as well as for specific mental disorders (i.e., affective disorders, psychotic disorders, post-traumatic stress disorder, attention-deficit hyperactivity disorder, suicide and self-harm) (Koh et al, 2022). However, to date, there are yet few efficacy data in the long-term period, and their use and reimbursement vary significantly from country to country (Philippe et al., 2022). DTx, especially when registered officially as “software as a medical device” should be supported by evidence-based randomized controlled trials (Espie et al, 2022).

- *Mobile applications* are a type of application software designed to run on a mobile device, widely used as a platform to deliver digital treatments to users with mental health problems or disorders, also allowing the tracking of behavioral, physiological and environmental variables, both actively and passively (Torous et al, 2021). Mobile applications (or “apps”) are also widely used as alternative tools for delivering treatments to those individuals who have difficulties participating in traditional face-to-face therapy and for engaging at-risk individuals for early intervention at the very prodromal illness phase (Melbye et al., 2020).

- *Wearable sensors* are devices allowing the tracking of physiological (e.g., heart rate, breathing patterns, etc.) and behavioral parameters (e.g., sleep quality, physical activity, social interactions, etc.) (Torous et al, 2021). They may provide real-time feedbacks to individuals about their mental health, help them to identify clinical patterns and trends, to indicate the need for prompt interventions, and, collecting real-time data helping clinicians in treatment decisions, by supporting contemporary mental health interventions (Gomes et al., 2023).

- *Digital phenotyping* refers to the moment-by-moment in situ assessment of passive and active data retrieved from wearable sensors or smartphone keyboard interaction and/or subjects’ voice and/or speech (Torous et al., 2021). Digital phenotyping could help tracking patient’s symptomatology and lifestyle changes, by potentially predicting clinical outcomes or early identifying a crisis and/or relapse risk and, hence, facilitating the delivery of personalized and targeted ‘just-in-time’ interventions. However, there is still the need to clearly identify diagnosis- and symptomatology-specific digital patterns (Orsolini et al., 2020).

- *Extended Reality* (XR) is an emerging “umbrella term” comprising all immersive technologies (i.e., virtual reality, augmented reality, and mixed reality), in which an ecological setting is simulated through a digital human-machine interface in real time, creating a controlled digital environment, that may provide relevant alternative approaches for mental health assessment and treatment of several psychiatric disorders (Kim and Kim, 2020). Several XR approaches have emerged to deliver exposure-based behavioral treatments for anxiety and post-traumatic disorders, while more recently also XR programs for depression, eating disorders and schizophrenia have been developed. To date, however, technical inhomogeneity and high costs may limit their universal use in routine practice (Torous et al, 2021).

- *Serious gaming* refers to digital games that have as a primary purpose education rather than entertainment, that is also provided (Kagohara, 2013). Two key areas of serious gaming in the field of health care are serious games for health professionals, for training purposes, and for patients, for treatment or rehabilitation purposes. However, serious gaming has been increasingly developed for the improvement of cognitive, emotional and behavioral problems, particularly for children and adolescents affected with neurodevelopmental disorders (Vacca et al., 2023). Future studies should focus on demonstrating the clinical effectiveness of serious gaming also in other fields of mental health.

- *Social media* are online environments (websites and apps) where users can produce and consume content, mostly generated by other users (McGowan et al., 2012). Social media can help providing real-time symptom monitoring, spreading mental health correct information, provide social support, and tracking patient's symptomatology and lifestyle changes in various mental disorders (Moorhead et al., 2013). To date, despite the growing attention for the use of social media for mental health and care, current research is still suboptimal and further studies should be implemented to evaluate ethical and validity issues connected to their use (Torous et al., 2021).

- *Artificial Intelligence (AI)* refers to a specific information technology section involved in designing intelligent computer systems capable of imitating and/or reproducing some aspects of the functioning of human mind and/or behavior. AI could help clinicians perform personalized medical diagnosis, identify the severity of a mental illness, monitor treatment adherence, early detecting illness onset, and variations in clinical course (Graham et al., 2019). Although AI has already been considerably developed in many fields of medicine, there is the need to develop further evidence-based studies also in mental health treatment and care (Verma et al., 2022).

- *Machine Learning* is a specific application of AI in the creation of predictive models and algorithms, which could help clinicians with differential diagnosis, early identification of prodromal signs and/or symptoms of a mental disorder, as well as in creating predictive models of clinical risk conditions or response to treatment (Rebala et al, 2019). However, these patterns/models are virtually verified and then developed to predict the course/pattern of a specific variable over time. They should be tested to modify possible mistakes/errors and improve the performance/sensibility of the same algorithm (Graham et al., 2019).

- *Chatbots* are a specific form of software that can simulate human conversations, allowing users to interact with digital devices as if they were communicating with a real person (Pham et al., 2022; Neog et al., 2022). Although chatbots have already been widely used in everyday life (for instance, voice assistants on smartphones or smart speakers), their applications in the field of mental health are still limited. However, chatbots remain a focus of interest in digital psychiatry as they may represent a first step toward a process of greater "automation" of the mental health care process also in psychiatry (Torous et al, 2021).

3. Towards digitally transformed mental health and care systems

Overall, one of the most compelling reasons for the digitalization of mental health care systems is its potential to address unmet needs in mental health and help reduce mental health inequities globally. A study from WHO found that 52.6% of persons with depression in low-income countries did not receive any treatment in the past 12 months, and only 20.5% of persons with depressive disorder received minimally adequate treatment (Thorncroft et al, 2017). Similarly, another WHO study reported that severe mental disorders go untreated at a global level (including developed countries) in 35.5-50% of the cases (Demyttenaere et al, 2004). Beyond the problem of geographic inequalities, serious mental disorders are still affected by significant gaps in mental health and care worldwide, and digitally supported mental health care systems could help to overcome these gaps (Ramalho et al., 2020b).

Digital mental health and care may significantly increase mental health access and care, facilitate mental health promotion, provide screening and early recognition of clinically relevant symptomatology, prompt detection of psychopathological relapse, and ensure treatment adherence for patients with mental disorders, with significant impact on successful relapse prevention and psychiatric rehabilitation. Digital tools can play an important role in the treatment of various mental

health conditions and provide effective outputs in terms of screening and symptom alleviation (Donker et al., 2013; Fu et al., 2020; Sin et al., 2020). For the treatment of depression, digital tools are used for both data collection and analysis, and the use of these methods has promising results in terms of both treatment and prevention of depression (Van Assche et al., 2022). The European Psychiatric Association (EPA) has provided evidence-based guidance on the usefulness of digital interventions in the treatment of psychotic disorders (Gaebel et al., 2016) and PTSD (Gaebel et al., 2017). The eMEN initiative also recently provided a policy reference to upscale mental health services in North-West Europe (Gaebel et al., 2021). Internet tools/programs can be used for early recognition and diagnosis of mental disorders, especially in anticipating potential relapse (Torous et al., 2016). Reduction of relapse rates are of crucial importance in most psychiatric disorders (Kishi et al., 2021) and digital interventions and techniques can provide effective prevention strategies via risk detection, digital phenotyping, and close monitoring for many psychiatric disorders such as schizophrenia spectrum disorders, depression, and alcohol use disorder (Van Assche et al., 2022).

Additionally, internet-based psychoeducational programs have been found to be effective in improving caregivers' mental health and emotional well-being (Yu et al., 2023). Overall, digital mental health and care can favor a more equitable access to mental health care and services, at times and places of patients' choosing and anonymity if wished, and by ensuring lower-cost care. It can also increase treatment engagement and adherence, limiting the detrimental effects of untreated mental disorder, and guaranteeing a faster recovery.

However, besides the few innovative digital psychiatric services in more developed countries (usually linked to individual experts), mental health services across the world have yet remained largely based on traditional workflow, with paper-based documentation or ineffective electronic record systems. In order to achieve the objective of transforming mental health services into digital care services, more personalized and more responsive to patients and healthcare needs, a technological (including restructuration of computing platforms, connectivity, software, and sensors for health care and related uses), legal and administrative update at a global level is needed, as well as an adaptation policy program to match local needs at the national/regional level. To fully exploit the great potential of digital innovations in every day clinical psychiatric practice psychiatry should move from digitization to global digital transformation of mental health care services (Adler-Milstein, 2022).

4. Current global status of digitalization in mental health and care

Despite the increasing recognition of the added value of digitally transforming mental health services, there are still tangible barriers to its full integration. In fact, despite the drive to digitalization in several fields of economy, politics, industry and health (including mental health), a variety of digital disparities are emerging worldwide. Key limiting factors of digitalization in mental health and care are related to priming the recipients (both patients and mental health professionals/clinicians, in terms of acceptability of digital delivery, attitude and opinions, as well as level of technology readiness and literacy) and the context of mental health care delivery (in terms of mental health care infrastructures, regulatory, ethical and medico-legal issues). Another limiting factor to the universal implementation of digital mental health and care is the heterogeneity between and within countries, which may be influenced by country income, resources for digital supply, training resources for mental health professionals, as well as levels of digital literacy, trust and readiness.

There are few exhaustive reports on the state-of-the-art in each WHO region and its countries regarding the level, barriers and facilitators of digitalization especially in the field of mental

health and care, including unmet needs and potential solutions for digital transition and upgrading (WHO, 2010; WHO, 2021a; WHO, 2021b; WHO, 2022). To fill this gap, the World Psychiatric Association (WPA) Working Group on Digitalisation in Mental Health and Care (chaired by W. Gaebel, U. Volpe, R. Ramalho), supported by the WPA Action Plan, reached out to all WPA National Psychiatric Member Societies by means of an Internet-based survey to develop a broad baseline profile of the current status of digitalisation in health and mental health care across WPA member countries. Informed by the available findings of this survey, the WPA Working Group is taking several actions and is being developing a strategic plan on supporting WPA's efforts to promote the global development and implementation of digital mental health and care with targeted priorities and actionable next steps (Volpe et al, 2023).

5. WPA Action Plan for Global Digitalization in Mental Health and Care

Despite their potential and the encouraging findings in the field of digital psychiatry, the dissemination and use of digital tools and interventions in psychiatric clinical practice is still quite heterogeneous worldwide. Firstly, among the different digital mental health solutions there is still considerable disparity in terms of the scientific evidence base supporting them. Secondly, beyond the albeit necessary scientific support, development and use of many of these tools and interventions suffer from often still 'embryonic' legal, administrative and health regulations and need international high-quality guidance (e.g., Gaebel et al., 2020), to date not available for each digital tool/disorder. Thirdly, despite the increasing diffusion of digital solutions in everyday life, the skilled use of these approaches in clinical settings necessarily involves a process of adaptation from traditional settings and the acquisition of specific knowledge and skills that is not yet an integral part of the training of mental health professionals (Volpe et al., 2012; Orsolini et al., 2022; Ruiz-Cosignani et al., 2022).

The WPA is reinforcing its commitment to contribute globally and in selected countries to digitally supplement, support and improve mental health and care, referring to the expertise and impact of the WPA Working Group on Digitalization in Mental Health and Care. Through capacity building in professional education and training, knowledge acquisition and research, adequate creation and skilled use of new health technologies and programs, (public) mental health and care shall be up-scaled. Digital mental health and care literacy, acceptance, and accessibility across WPA member countries shall be improved both on the public, governmental, provider and professional level. This is a prerequisite for successful promotion and implementation of best quality digital tools and programs for self-management, prevention, early recognition and intervention, treatment and care - helping to close gaps of routine care, and providing universal health coverage. At the same time, this initiative will be serving to strengthen the role of psychiatry and its workforce in a diverse field of mental health and care by improving professional collaboration in the best interest of people being at risk for or with a manifestation of mental illness, developing their empowerment and contributing to reducing stigma and discrimination.

To achieve these goals, a set of ten high-priority recommendations identified by the WPA Working Group on Digitalisation in Mental Health and Care (see also: Gaebel et al., 2020 and 2021 for the European Region), addressed towards policymakers and stakeholders likewise at global, national, regional, zonal, institutional and personal level, is being established by the World Psychiatric Association (WPA) as part of the WPA Position Statement on Global Digitalisation in Mental Health and Care to enhance the worldwide digitalization process of Mental Health and Care:

1. Promote and advocate strong political commitment, governance, and leadership for the development, dissemination, implementation, adoption, and integration of digital mental health and care within routine clinical practice.
2. Develop adequate financing strategies to supply technological equipment, Internet access, and wireless connectivity to guarantee the financial viability of digital mental health interventions also in the long term.
3. Ensure equitable access to digital mental health care, by overcoming the digital literacy and digital readiness gaps and cultural and linguistic barriers, by increasing digital engagement, acceptability and adherence, and by implementing more scalable and affordable solutions to digital mental health care access and patients' retention.
4. Promote an adaptable integrated model of mental health care comprising in-person and digital delivery of mental health interventions, by developing also digital interventions for mental health at the workplace and in schools.
5. Ensure that only high-quality digital mental health interventions and integrated digital services are implemented in the (mental) health care sector.
6. Promote and facilitate digitalization development based on the highest possible standards of usability, ideally in co-creation with the users, as well as feasibility, country-based adaptability and interoperability.
7. Initiate and encourage international, multi-center and multi-country research in the field of digital psychiatry, by specifically targeting effectiveness, feasibility, acceptability, and strategies for digital implementation.
8. Increase awareness and acceptance of digital mental health interventions, foster trust in digital tools in mental health care and prevention efforts, and enhance digital health literacy and skills in the public and the (mental) health workforce.
9. Implement and improve formal professional training curricula in digital mental health care and interventions embedded into mental health training programs. The development of a curriculum addressing core digital competencies expected from undergraduates and postgraduates in the field of mental health should be one of the key priorities.
10. Ensure legal and regulatory clarity, ethical correctness, human rights, privacy, confidentiality and security of personal and other sensitive data in delivering digital interventions in the digital age.

The global situation is quite heterogeneous, as several countries are in different stages of implementing digital tools and interventions in mental health and care. The presented recommendations, based on the review and statements of this WPA Position Documents, should therefore be adapted and revised according to the changing needs.

Steering Group

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