

## The use case of emerging technologies to prevent teens' mental health crises as a family

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According to WHO 1 in 7 teenagers experience mental health difficulties globally in Germany, 1 in 4 children experiences mental health difficulties. Research has shown that 50% of the mental illness occurs by the age of fourteen and almost 70% of adolescents don't get the treatment needed to combat the illness. In addition, the suicide rate is on the rise. Adolescent mental illnesses are affecting not only the person who is going through the illness but also their family members as well as society. For example, the productivity of parents with kids diagnosed with mental illness is reduced by 55%, resulting in a loss of income.

In 2015, German public health insurance spent nearly 44 billion euros on the treatment of mental illnesses in Germany. The expenditure on mental health treatment and services in the USA in 2019 reached \$225 billion. A recent report shows that 420,000 children a month in England are treated for mental health problems. It is expected the overall spending on mental illness will be rising year on year. However, study shows that prevention, as well as increasing awareness, is a way to reduce the prevalence of depression by 21% .

Given that the mental health crisis among teenagers is at its peak, it is inevitable to look for ways to decrease the prevalence, in particular mental health promotion and universal prevention intervention which are important for lifelong health and success.

Over the last couple of years, Digital mental health interventions (DMHI) have attracted interests of researchers, practitioners and insurance providers, etc., as a way to help with the prevention, early intervention and treatment, and management of mental illness.

The effectiveness of Digital mental health interventions (DMHI) based on web-based programs, mobile applications (apps), virtual reality (VR), and digital assessment methods has been investigated by researchers and it has shown promising outcomes, for example refer to a recent study suggests that "digital psychoeducation interventions have the potential as a scalable and cost-effective approach to targeting anxiety sensitivity in emerging adults". Given that DMHI can help with great outreach and helps with de-stigmatisation of mental health in particular in low-income and middle-income countries, it is important to create a solutions based on emerging technologies to reach more people in an effective, engaging and affordable way.

In this session we would like to introduce KRATOSapp, a companion digital solution to prevent teens' mental crises as a family. KRATOSapp aims to bring preventive measures, including skill-building and the development in format of digital programs for teenagers and their caregivers. KRATOSapp aims to improve the quality of life of teenagers and to promote optimal functioning of mental health wellness with preventative, affordable, and

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accessible support. A support system that aims to increase self-awareness, reduction in antisocial behaviour, alcohol and substance abuse, increase school attendance and stronger academic outcome, decrease mental health referral, increase connectivity and happiness amongst family settings,

We highlight why we need to have a solution that is geared toward both adolescents and caregivers. The solution we are proposing is based on science-based content and is under development in collaboration between behavioural scientists, neuroscientists, psychologists, therapists, adolescents, caregivers, software developers, game designers, data scientists, AI experts, etc. This project is a multidisciplinary effort that may foster high engagement which promotes mental wellness in long term. We will outline how emerging technologies such as Artificial intelligence and immersive learning environments can foster prevention and increase awareness.

Our solution includes creating customized psychoeducation for teenagers on topics like (overcoming anxiety, social-emotional skills learning, dealing with peers and academic pressure, etc.) and their parents to provide parenting skills training and building, as well as develop insight into the mental health difficulties that are common among teenagers and how they can support their adolescents to go through the challenges.

### **Biography**

Azadeh Dindarian, is social impact entrepreneur, she is the founder for KRATOSapp, an app to prevent mental illness crises in teens. She holds PhD, in Electrical and Electronic Engineering from the University of Manchester and worked in Research and Development, innovation and digitalisation in Green technology, sustainability, smart city and project management. Using her expertise in innovation and digitalisation, she is building KRATOSapp with help of interdisciplinary team to streamline the access to mental health resource for teens and families.

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