

Navigating through complexity

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CHAPTER EIGHT

Valorization

Valorization has been defined as “the process of value creation from knowledge, by making it applicable and available for economic or societal utilization, and by translating it in the form of new business, products, services, or processes” (p.8) [1]. In this chapter we will elaborate on how work done in this thesis may be valuable for, and eventually affect, society and economy.

The total costs for healthcare in the Netherlands have been rising in recent years. Together with cardiovascular diseases, mental disorders are among the most costly complaints for healthcare services [2]. When turning to Europe as a whole, the costs for mood disorders have recently been estimated at 113.4 billion euro, 74.4 billion euro for anxiety disorders, and 93.9 billion euro for psychotic disorders [3]. These costs are the combination of direct healthcare costs, non-medical costs (e.g., costs for extra resources for social service and education), and indirect costs (e.g., costs due to work absence or early retirement). In patients with psychotic disorders, these indirect costs form with 64.9 billion euro the largest proportion [3]. These indirect costs may emerge from impairments, disability, premature death, and legal problems which are frequently linked to loss of productivity [4]. While these numbers provide a concise overview of societal costs linked to psychotic disorders, they fail to express the personal burden and suffering, which patients and their relatives may be experiencing. Patients suffering from psychosis are frequently confronted with some degree of stigmatization and discrimination [5-7]. This makes that a majority of patients and their families chose not to speak about their condition to others, which may increase their feeling of isolation from society even further. Although prevalence rates for developing a full-blown psychotic disorder are relatively low with 3-4% [8], it can be concluded that these disorders may be of substantial burden to the affected individual, his/her social circle, as well as for society as a whole.

Research of recent years points towards a heterogeneity in the course and outcome of psychosis, and contrasting to what has long been believed, remission and recovery likewise are considered realistic endeavors. As introduced in chapter one of this thesis, there is accumulating evidence of the continuum notion of psychosis, of severity and persistence of experiences. It has been suggested that treatment early on in the course of psychosis, during a first episode, improves chances of transition greatly, with remission rates of around 80% [9]. Knowledge of mechanisms and psychological processes involved in the complex etiology of experiences along this continuum may prove valuable for setting up interventions and prevention strategies early in order to minimize the personal and societal burden of psychosis.

The current thesis investigated processes and mechanisms underlying the development of psychosis. In particular, we focused on the role of stress and its dynamic interplay with psychological processes and psychotic experiences in daily life. We found new evidence that emotional reactivity may play an important role as a putative mechanism through which stress impacts on the formation of psychotic experiences. Although some work done in this thesis may seem rather fundamental in nature, on the long run, insights into the underlying dynamics may improve prevention and treatment options for patients and thereby reduce societal, economic, and personal burden linked to psychosis.

Better insights into processes underlying the occurrence and persistence of psychotic experiences are valuable to gain understanding of when and how to intervene best to reduce the intensity of psychosis. Our findings stress the importance of complex micro-level dynamics in daily life underlying the development of psychosis and underline the importance of studying it in daily life. This knowledge is especially relevant for interventions provided in daily life of patients – Ecological Momentary Interventions. With these real-life interventions, leveraged by mobile devices, such as smartphones, treatment can be delivered at any time, and in almost any location – there where patients experience complaints. In chapter six of this thesis we provided an overview of currently available interventions provided in daily life of patients. Available interventions do seem promising, however, it is crucial that processes these interventions are targeting are properly investigated before treatments are provided to patients. Furthermore, randomized controlled trials are needed to reliably investigate the effectiveness of these treatments.

Ecological Momentary Interventions may not only be valuable as add-on and stand-alone delivery of treatment, they open up new endeavors for personalized medicine, as interventions taking inter-individual differences into account can be provided more easily. As a further step, these interventions may not be only tailored to the individual needs of patients, but can even provide exercises in real-time and real-life, depending on specific experiences or symptoms at that very moment. Personalized treatment that targets symptoms or symptom clusters central to a person at a particular moment may increase the efficacy and efficiency. This, in turn, may possibly be linked to reductions in healthcare costs and may maximize the quality of life of patients.

In sum, through the chapters of this thesis, it became apparent that micro-level dynamics in general, and emotional reactivity to minor daily stress in particular, may play an

important role in the formation of psychotic experiences. Interventions targeting these processes in daily life may therefore prove valuable for the prevention and treatment of psychotic experiences. In order to eventually create value from research findings of this thesis, it is essential to bridge the gap between science and clinical practice and to reach out to people that have the capacity to directly impact healthcare – policymakers and healthcare professionals. All findings of this thesis are therefore published in peer-reviewed journals and presented at national and international conferences. Conference contributions and publications in peer-reviewed papers, furthermore, aid the communication with fellow researchers. This communication is essential to constantly keep on challenging currently established ideas of processes underlying mental illness. Especially research lines studying micro-level processes in daily life are benefitting greatly from recent and ongoing technological advances. These, in turn, make it increasingly feasible to track and monitor data of various modalities throughout everyday life of individuals, resulting in datasets of increasing complexity.

In order to create something meaningful to patients, their friends and relatives and society as a whole, it is essential that researchers, clinicians, and policymakers work together closely. Involvement of patients in scientific research is essential not only to receive input on, and gain insights into challenges they are facing, but also to obtain feedback on interventions, and possibly, on the usability of proposed technological tools. Involving clinicians as sounding boards in research projects can further provide valuable information on flaws of current treatment options and the feasibility of proposed solutions. In turn, together, scientists and clinicians may then create great impact on patients' prognoses, by improving current treatment strategies and their implementation in the clinic.

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