The mental health of young adults in times of the COVID-19 pandemic in the

Netherlands and its relation to resilience

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Abstract

Objective. This study aimed to assess the impact of COVID-19 restrictions sanctioned by the Dutch government on mental health and mental illness in young adults aged 18-30. The association between resilience and the restrictions on positive mental health and mental illness was also tested. **Method.** An explorative longitudinal trend study, based on ROM data, was analysed if there were differences in positive mental health, mental illness, and resilience during multiple stadia of the pandemic (pre-COVID-19, mild restrictions, or (partial) lockdown). The measures included the MHC-SF-P, the GSAAS, the OQ-45, and the BSI-18. Statistical analyses were performed in SPSS, version 27, using independent sample t-tests, one-way ANOVA, and one-way MANOVA. PROCESS 4.1 was consulted for moderation analyses with covariates. **Results.** Partial evidence revealed that mental illness was higher for clients seeking mental health treatment during a (partial)lockdown than during mild restrictions or pre-COVID-19. Symptoms of depression and anxiety were significantly higher during a (partial) lockdown than during mild restrictions. Anxiety symptoms and ensuing psychosomatic complaints were higher prior to the pandemic than during a (partial) lockdown. Overall positive mental health did not differ during multiple stadia of the pandemic, although, social communal well-being was significantly higher for clients seeking mental health treatment during a (partial) lockdown compared to clients prior to COVID-19. Resilience was a significant predictor of positive mental health and mental illness. Although, as a moderator for the relationship between the severity of restrictions and mental illness, it only remained significant at low and moderate levels, and as a moderator for positive mental health it was not significant. All effect sizes are small or negligible. **Conclusion.** It is recommended to facilitate clients with and develop interventions to buffer resilience to protect mental health and diminish mental illness.

Keywords: positive mental health, mental illness, resilience, COVID-19, pandemic

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Over the last two years, the coronavirus SARS-CoV-2 that causes COVID-19 has significantly impacted public health. The coronavirus dominated scientific research in various domains, such as its physical effects and its effects on mental health and mental illness (e.g., Trimbos Institute for Mental Health, 2020; Ammar et al., 2021; Santomauro et al., 2021). Nevertheless, limited research is available on the effects of governmental sanctions and ensuing (partial) lockdowns on mental health. Internal and external factors regularly threaten mental health. Think about changes in life, heightened stress and setbacks, which can disrupt one's balance. To a greater or lesser extent, every individual experienced changes in their lives due to the pandemic. How severe one's balance disrupts and how much one suffers from stress, changes, and setbacks depend on how resilient a person is at one point in time. Next to the limited research on the effects of the restrictions and lockdowns on mental health, fewer studies investigated its relation with resilience, while resilience is essential for preventing and buffering mental health. A better understanding of resilience, mental health and mental illness during multiple stadia of the pandemic may promote awareness, more suitable interventions, and prevention in case of future pandemics.

The COVID-19 pandemic and its governmental restrictions in the Netherlands

On March 11 2020, the WHO declared the global COVID-19 pandemic. Since then, the lives of many have changed unquestionably. The Netherlands accounted for 2.001.207 infections and 18.170 deaths at that time (Johns Hopkins University, 2021). Since there was no cure or prevention for the virus yet, the leading strategy of the Netherlands to protect society from the virus has focused on community-based, non-pharmaceutical interventions (NPIs). These NPIs generally include mitigation and suppression measures (e.g., case-based isolation, shielding of vulnerable groups, school closures, and lockdowns) through social

distancing to lessen virus transmissions (Chowdhury et al., 2020). The Netherlands named its NPI policy a so-called 'intelligent lockdown', a lighter version of a total lockdown (de Haas et al., 2020). The first lockdown lasted from March 23 until early June 2020. Figure 1 gives an overview of the most critical restrictions until September 2021.

Figure 1

Global overview of the restrictions during the COVID-19 pandemic in the Netherlands
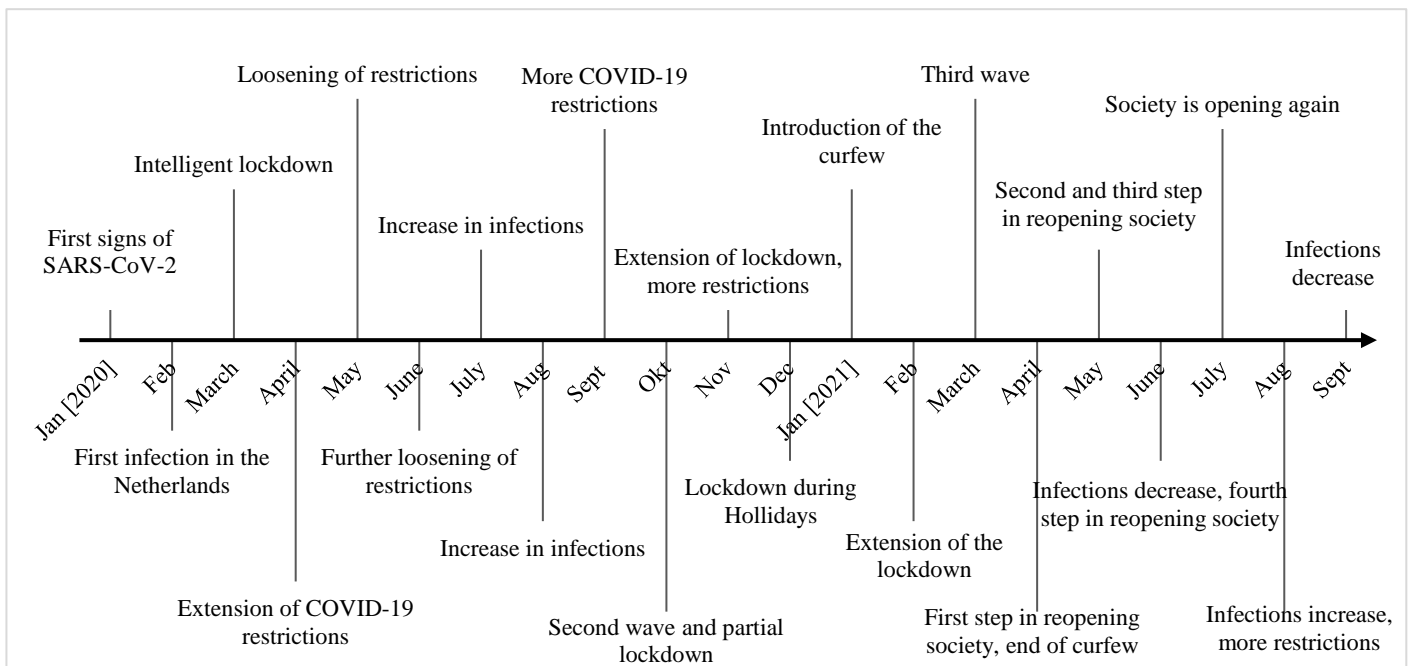
Civilians were requested to stay home, although they were still allowed to move around freely, as long as they kept the 1.5-meter distance. Bars, restaurants, schools, gyms, and 'contact professions' (e.g., hairdressers) were closed, and visits to nursing homes were forbidden (de Haas et al., 2020). After the intelligent lockdown, there remained restrictions, on and off. On January 9 2021, the first vaccine was administered. As of September 25 2021, 73.5% of the Dutch population had at least one dose of a vaccine, and 66.1% were fully vaccinated (Ritchie et al., 2021). With the coming of the vaccines, the virus could be fought, and society could be reopened again, step by step. However, the effects of the pandemic on mental health could remain even after reopening society.

Positive mental health

The definition of mental health is multi-faceted. The WHO (2005, p. 2) defined

mental health as a state of well-being in which the individual realises his or her own abilities,

can cope with the normal stresses of life, can work productively and fruitfully, and is able to

make a contribution to his or her community. Westerhof and Keyes (2010) specified three

core components of mental health, namely a) well-being, b) effective functioning of an

individual, and c) effective functioning in community life. These core components of mental

health build on the research on well-being and a well-lived life: the hedonic and eudaimonic

traditions (Lamers et al., 2011). According to Ryan and Deci (2001), the hedonic approach

focuses on happiness, defining well-being in terms of pleasure attainment and pain

avoidance. Fully expanding well-being has been viewed as maximising feelings of happiness.

The eudaimonic approach originates from Aristotle, for whom realising one's potential was

the essential element to living well (Westerhof & Keyes, 2010). In this view, well-being is

not seen as an outcome or 'end state' since it is a process of fulfilling or realizing true nature.

In other words, fulfilling one's virtuous potential and living as one was inherently intended to

live (Deci & Ryan, 2008).

Corey L. Keyes (2002) brought the approaches of hedonia and eudaimonia together in

the concept of 'positive mental health'. A combination of emotional, social, and

psychological well-being is needed to be mentally healthy and can be seen as subjective

evaluations of the core components of the WHO's definition of positive mental health

(Westerhof & Keyes, 2010). Hedonia is integrated into Emotional Well-Being (EWB), while

Social Well-Being (SWB) and Psychological Well-Being (PWB) together represent

eudaimonia (Keyes, 2014). EWB evaluates the degree of life satisfaction and positive

emotions. SWB is divided into five dimensions: social acceptance, social growth, social

contribution, social coherence, and social integration. PWB is divided into six dimensions:

self-acceptance, personal growth, purpose in life, environmental mastery, autonomy, and positive relations (Ryff, 1989). Going back to the three core components mental health encompasses, a) well-being can be seen as EWB, b) effective functioning of an individual as PWB, and c) effective functioning in community life as SWB. Together, they make up for the definition of positive mental health (Keyes & Westerhof, 2010), and this definition is thence used in the present study.

Consequences of the COVID-19 pandemic on positive mental health

Despite earlier infectious diseases, such as SARS, Zika, and Ebola, the current understanding of how an outbreak influences positive mental health is limited. Research has predominantly focused on the presence or absence of mental illness (symptoms), often overlooking aspects of positive mental health (Oswald et al., 2021). Nevertheless, some studies focused on mental health concepts (e.g. Yang & Ma, 2020). They studied factors that worsened and protected EWB during the pandemic in adults. Individuals who perceived themselves as more knowledgeable of the coronavirus experienced more happiness during the outbreak, regardless of whether they possessed more knowledge than others. Additionally, EWB diminishes by relational issues, the likelihood of contracting the virus, and potential harm (e.g., poorer physical health). Cowie and Meyers (2020) also reported decreased EWB in young adults. Similarly, research by Zacher and Rudolph (2021) showed that positive and negative affect and life satisfaction (EWB) diminished over the pandemic in the general German population. Visser and Law-van Wyk (2021) found that EWB was impaired for 65.2% of South-African students, whereas it grew for 7.6%. SWB decreased during the lockdown since students doubted society and did not feel they belonged or could contribute.

The time spent with an electronic device increased due to the sanctions on leaving home. Spending more time in front of an electronic device lowers adolescents' EWB, SWB

and PWB (Sikorska et al., 2021). Similarly, Ammar et al. (2021) found that a 15% higher use of electronic devices during home confinement negatively impacts EWB in adults.

Mental illness

Besides the direct impact of the virus and the effect of COVID-19 on positive mental health, increasing evidence shows the adverse effects of mental illness. Mental illness is a clinically significant disturbance in an individual's cognition, emotional regulation, or behaviour. It is usually associated with distress or impairment in important areas of functioning (WHO, 2022). Psychopathology is a synonym for mental illness, and these terms are used interchangeably within this study. Mental illness and positive mental health are related yet distinct concepts described by the dual continua model of mental illness and mental health. The model holds that both are related but distinct dimensions (Westerhof & Keyes, 2010). The former indicates the presence or absence of mental illness, while the latter indicates the presence or absence of mental health. It means, for instance, that an increase in mental health does not necessarily lead to a decrease in mental illness. The dual continua model can be found in Appendix A.

Consequences of the COVID-19 pandemic on mental illness

As a result of these everyday disruptions, anxiety, frustration, panic attacks, loss or sudden increase of appetite, insomnia, depression, mood swings, delusions, fear, sleep disorders, and suicidal/domestic violence have become more common amid the early months of COVID-19 (Ammar et al., 2021). Schafer et al. (2022) found that symptoms of mental illness significantly increased worldwide compared to before the pandemic. The global prevalence and burden of depressive and anxiety disorders rose consecutively by 27.6% and 25.6% (Santomauro et al., 2021). Symptoms of depression increased from 8.7% to 18.3% and from 8.9% to 22.6% for anxiety symptoms (Schafer et al., 2022). Pan et al. (2021) also found increased depression and anxiety symptoms, next to worries and loneliness, in people without

mental illness. These results contrast with groups with severe and chronic mental illnesses since they showed no change or a modest decrease in depressive and anxiety symptoms and feelings of worry and loneliness (Kok et al., 2022; Pan et al., 2021). Heightened anxiety levels make the risks of contamination with the virus more likely as a consequence, as anxiety makes one's body's immune system weaker (WHO, 2020). Although the risk of getting contaminated is equal for women and men, men are more at risk for severe outcomes and death (i.e., 2.4 times more likely), regardless of age (Jin et al., 2020). In short, many experienced (symptoms of) mental illness to a greater extent than before the pandemic.

Resilience

An important concept related to positive mental health is resilience. Resilience is the process of adapting well in the face of adversity, trauma, tragedy, threats, or significant sources of stress (American Psychological Association [APA], 2020). Furthermore, it is a defence mechanism against developing mental illness (Davydov et al., 2010). The broaden-and-build theory of positive emotion by Barbara Fredrickson (2001) explained the function of positive emotions and, in addition to that, how mental health and resilience interact. Positive emotions have two valuable short- and long-term functions. In the short term, they ensure the broadening of our attention, cognition, and action (i.e., the broadening effect), which then leads to enduring physical, intellectual, social, and psychological resources (i.e., the build effect), such as resilience. Thus, besides the pleasant feelings they bring, positive emotions build resilience to cope with adversities (Fredrickson & Joiner, 2002). Interestingly, it works the other way around as well: resilience predicts the experiences of positive emotions, while resilience does not predict negative emotions, such as anxiety (Fredrickson, 2004). In addition, resilience is a defence mechanism to protect mental health (Davydov et al., 2010). Readjusting to the consequences of stressful life events is necessary to maintain mental health and sustain well-being (Hjemdal et al., 2006; Schuffelen et al., 2021; Southwick et al., 2014).

Resilience tends to have two orientations, thereby, different meanings. On the one hand, resilience can mean the ability to resist being damaged or deformed by traumas or destructive forces (Harms et al., 2018). On the other, resilience can mean readily "bouncing back" or recovering from traumas or destructive forces (Harms et al., 2018). The first definition perceives resilience as a trait an individual needs to survive. The second definition emphasizes resilience as a means of thriving, and here lies the focus of the current study.

Resilience during the COVID-19 pandemic

Individuals with high levels of resilience are generally less affected by the pandemic than others. For example, individuals with already existing mental illness exhibited low levels of resilience (Castelein et al., 2021) or lower levels than community controls (Verdolini et al., 2021), which could make them at a heightened risk for a decreased positive mental health during the pandemic. The study of Martinelli and Ruggeri (2020) indicated the contrary; however: severely mentally ill people exhibited high resilience during a lockdown. Pan and colleagues (2021) reported that specifically, this group experienced better well-being than individuals without pre-existing disorders. Besides, resilience moderated a negative outcome from perceived stress during the COVID-19 pandemic in depression (Havnen et al., 2020; Verdolini et al., 2021) and anxiety symptoms (Havnen et al., 2020). Quintiliani and colleagues (2021) found that heightened stress within the COVID-19 period negatively affected one's PWB, which, in turn, could be positively altered by one's resilience skills. Additionally, resilience is a protective factor in overcoming learning difficulties (e.g., decreased attention span) for students during the pandemic (Dopmeijer et al., 2021; Quintiliani et al., 2021). These studies indicate that resilience could be important in overcoming difficulties (un)related to the pandemic.

Consequences of the COVID-19 pandemic for young adults

It emerged that some groups were more vulnerable to the psychosocial effects of the

pandemic than others. Most feared the health impact and social isolation of the elderly (Kasar & Karaman, 2021), while the mental health of adolescents, young adults and students have explicitly been affected by the pandemic (e.g., Dopmeijer et al., 2021; Manchia et al., 2022; O'Connor et al., 2021). Young adults experienced the highest levels of psychological distress compared to other age groups before the pandemic (APA, 2013; Slade et al., 2009) and during the pandemic (Harris & Sandal, 2020; Oswald et al., 2021). Drastic measures are being taken to slow the infection rate. Schools and universities, workplaces, colleges, movie theatres, restaurants, and bars closed. Sports matches, festivals, graduations, and proms were cancelled (Efuribe et al., 2020). Still, mixed results are published about the impact of the pandemic on the mental health of young adults and (university) students. On the one hand, several studies reported no changes in mental health during the pandemic. Werner et al. (2021) found that the mental health of university students in Germany did not significantly change, and there was no significant increase in anxiety and somatic symptoms. During the first wave, Lee and colleagues (2020) found no significant change in anxiety symptoms in students. Van Zyl et al. (2021) found that the mental health of master students in the Netherlands was moderate and stable during that same period.

On the other hand, collaborative research by Trimbos, the Dutch National Institute for Public Health and the Environment (RIVM), and Municipal and Community Health Service (GGD) among students during the third wave in the Netherlands showed that 51% of students experienced psychological complaints, with 12% to a critical degree. Problems such as exhaustion, loneliness, and pressure to perform emerged (Dopmeijer et al., 2021). Compared to younger or older age groups, students aged 26-29 showed the highest internalising psychological complaints by 60.2% (i.e., anxiety, depressive, and somatic symptoms) (Dopmeijer et al., 2021). During the lockdown, heightened overall mental illness is reported in US students, especially first-year students (Olson et al., 2021). Depression symptoms

significantly increased during the first wave among individuals aged 22-29 (Lee et al., 2020). Werner et al. (2021) found a slight increase in depressive symptoms in university students. Furthermore, in the early weeks of the pandemic, suicidal ideation increased, mainly in individuals aged 18-29 years (O'Connor et al., 2021). In the Netherlands, 26% of students sometimes thought they would rather be dead, most noticeable in 26-29-year-olds (Dopmeijer et al., 2021). Visser and Law-van Wyk (2021) found that 45.6% of university students had experienced anxiety, and 35% had elevated levels of depression. Fu et al. (2021) found that 41.1% of college students reported anxiety symptoms, most prevalent in students aged 26-30. Cowie and Meyers (2020) also reported heightened anxiety symptoms in young adults. As a resemblance, the pre-pandemic prevalence rates of anxiety, depression, and stress symptoms among students were 27.1-33% for mild to extremely severe amounts of depression, 40-47.1% for anxiety, and 27%-37% for heightened stress (Bayram & Bilgel, 2008; Beiter et al., 2015). Hence, higher prevalence rates showed during the pandemic.

Next to these different outcomes, not all studies define 'students', 'adolescents,' or 'young(er) adults' in terms of age. The terms are not mutually exclusive and herewith represent a variety of ages. As an illustration, Erikson's stages of psychosocial development (Erikson, 1950) define 'young adults' as 19-40 years old, whereas others describe it as 24-35 (Volk et al., 2021), 18-45 (Steinberg, 2020), or 18-30 (Glowacz & Schmits, 2020), making it complicated to segregate the outcomes of multiple studies.

Topics of interest in the present study

The current study investigates the association between the severity of the lockdowns, mental health, mental illness, and resilience in individuals seeking mental health treatment in the Netherlands. There are growing concerns about the burden of lockdowns on mental health and mental illness. Nevertheless, the understanding of a possible relation between mental health and resilience received has scarcely been studied. Secondly, some studies investigated

these relations for adolescents, students, or (young) adults; however, these terms are not mutually exclusive. In addition, individuals aged 25-30 are often left out of studies, while they manifest as vulnerable. Thirdly, there is a lack of focus on individuals who apply for treatment during lockdowns. Investigating this group can provide treatment implications and provide information for upcoming pandemics. In the fourth place, previous studies were primarily based on the first wave of the pandemic, leaving out the course of mental health and mental illness during the pandemic. Therefore, the current study investigates the association with the severity of governmental restrictions (i.e., (partial) lockdown, mild restrictions, or no restrictions) on mental health for young adults aged 18-30 applying for treatment at various moments of lockdown restrictions during the COVID-19 pandemic in the Netherlands. It is expected that resilience functions as a moderator in the relationship between the severity of restrictions and the experiences of mental illness and positive mental health. Figure 2 provides an overview of these models.

Figure 2

Simple moderation models with resilience as moderating variable.
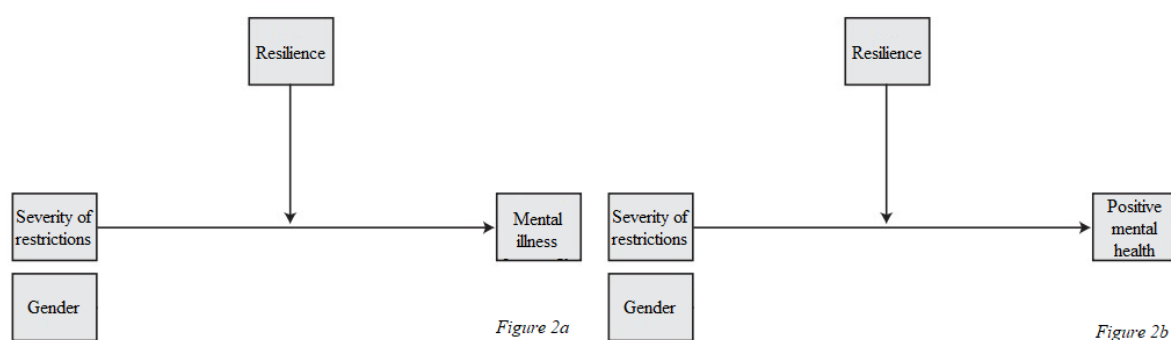
Specifically, it was hypothesized that in help-seeking individuals:

H_{1a} The severity of psychopathology would be higher during a (partial) lockdown period than during mild or pre-COVID-19 and lower during mild restrictions than pre-COVID-19.

H_{1b} Complaints of depression and anxiety would be higher than somatic complaints during a (partial) lockdown period than during mild restrictions.

H_{1c} The severity of psychopathology between levels of restrictions is smaller when resilience is greater.

H_{2a} Positive mental health is lower during a (partial) lockdown than during mild restrictions or pre-COVID-19 and lower during mild restrictions than pre-COVID-19.

H_{2b} The impact of the restrictions would be more significant for EWB than SWB and PWB.

H_{2c} The impact of the restrictions on positive mental health is associated with resilience.

H_3 The severity of government restrictions has a more substantial effect on mental health than on mental illness.

Methods

Design

The current research was an explorative longitudinal trend study, aiming better to understand the effects of lockdowns on mental health in individuals who applied for treatment at Mindfit. A trend study samples different groups of people at different points in time but in the same situation and from the same population (Graf et al., 2017). The longitudinal nature of this study could have an advantage over other types of studies since it described certain information over time instead of at one moment in time (Babbie, 2018).
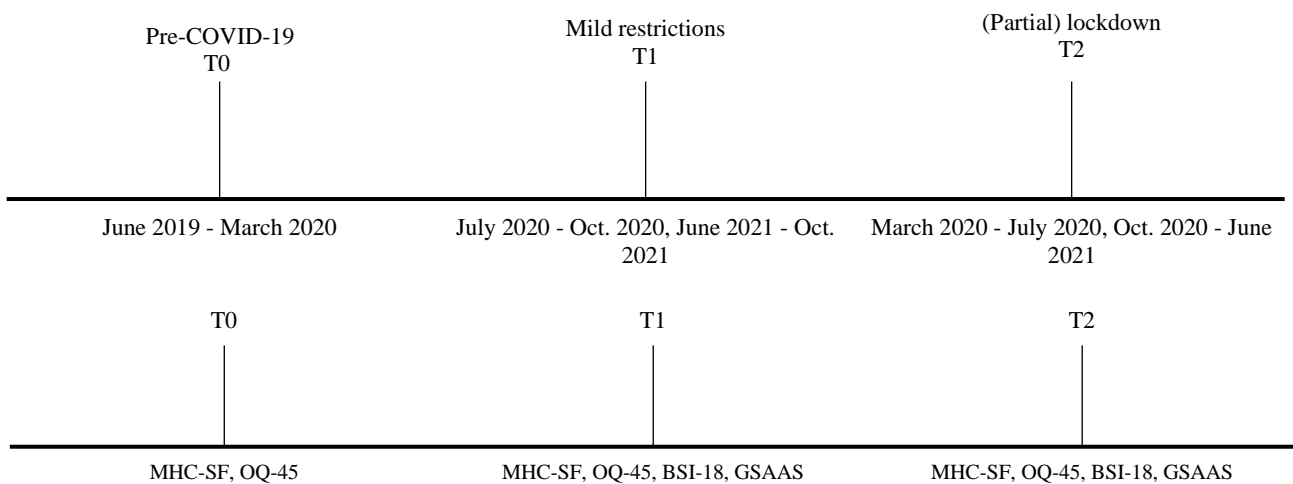
The Ethics Committee of the faculty Behavioural, Management and Social Sciences (BMS) at the University of Twente approved the current research under registration number 220213. Further, the Commission of Scientific Research of the Dimence Group also approved this research. A senior operator computerisation employee at Mindfit was appointed to transfer clients' data originating from Routine Outcome Monitoring (ROM) to a secured SPSS data file. As a result, the clients' anonymity was ensured in this study, as the researchers could not track the clients' identities.

The severity of restrictions

The frequently changing approach and sanctions opposed by the Dutch government included the NPIs, the 'intelligent lockdown', partial lockdowns, and up-and-off loosening and restricting restrictions. It made classifying all the pandemic stages in severity and duration difficult. However, the government created a timeline that broadly describes the developments in tackling the coronavirus in the Netherlands (Rijksoverheid, 2021). The researcher combined their definition of partial and complete lockdowns within this study. The period prior to COVID-19 is labelled as 'T0', the period of mild restrictions as 'T1'. Lastly, partial and total lockdowns are referred to as (partial) lockdowns and labelled as 'T2'. Figure 2 provides the study's design, with a timeline and the questionnaires assessed.

Figure 3

Measurement moments and measures

Pre-COVID-19 T0	Mild restrictions T1	(Partial) lockdown T2
June 2019 - March 2020	July 2020 - Oct. 2020, June 2021 - Oct. 2021	March 2020 - July 2020, Oct. 2020 - June 2021
T0	T1	T2
MHC-SF, OQ-45	MHC-SF, OQ-45, BSI-18, GSAAS	MHC-SF, OQ-45, BSI-18, GSAAS

Participants

All participants were clients who applied for mental health care from June 2019 to September 2021 at Mindfit. Mindfit is a Generalistic Basic Mental Health Care (BGGZ) provider in the Netherlands and works from the positive psychology principle. They aim to increase one's resilience to successfully manage setbacks and challenges in life (Mindfit,

n.d.). Most clients suffer from mild to moderately severe mental health problems, such as anxiety, depressive feelings, and elevated feelings of stress. Before starting treatment, individuals filled in several questionnaires about their mental health via ROM. The ROM refers to regular measurements of clients' progress in clinical practice, aiming to evaluate and, if necessary, adapt treatment (van Sonsbeek et al., 2014). Some demographic characteristics of the participants were also assessed, such as age, gender, education, and marital status.

The following eligibility criteria were fulfilled for inclusion in this study: a) the clients were aged 18 – 30, and b) the clients filled in the MHC-SF questionnaire. Furthermore, sufficient knowledge of the Dutch language was mandatory, considering that clients needed to understand the questionnaires they filled in. The population of Mindfit with chronic mental health issues was excluded from this study.

Measures

Mental illness symptoms – BSI-18

The Brief Symptom Inventory-18 (BSI-18; Derogatis, 2001) questionnaire assesses and screens psychopathology. The questionnaire was derived from the more extended, original Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983), which is a shortened version of the Symptom Checklist-90-Revised. The BSI-18 items describe symptoms, and one should rate how much they were bothered by the symptom in the previous week. The questionnaire consists of the three subscales Somatization (SOM), Depression (DEP) and Anxiety (ANX), and together form the total score. The BSI-18 starts with the sentence: *'How much trouble did you have with this problem during the past week, including today'*. Clients rate their distress along a five-point Likert scale, ranging from *not at all* (1) to *a lot* (5). Items that follow are, for example: *'faintness or dizziness'* (SOM), *'Feeling hopeless about the future'* (DEP) and *'Feeling tense or keyed up'* (ANX). All scores summarised determine the Global Severity Index, which helps quantify the severity of

psychopathology. The higher the score, the higher the severity of complaints. The BSI-18 is a reliable instrument for assessing psychological distress in the general population. The internal consistency is sufficient: Somatization α = .82, Depression α = .87, Anxiety α = .84 and GSI α = .93 as measured by a representative German sample (Franke et al., 2017), and confirmatory factor analyses underpinned the three scales (Franke et al., 2017). The BSI-18 is displayed in Appendix B.

Mental illness symptoms – OQ-45

The Outcome Questionnaire-45 (OQ-45) also measures mental illness symptoms (Lambert et al., 2004). This self-assessment questionnaire measures adults' general functioning, physical complaints, and therapeutic progress. The OQ-45 is divided into three subscales, namely Symptom Distress (SD; 25 items), Social Role (SR; 9 items) and Interpersonal Relations (IR; 11 items). The OQ-45 is measured on a five-point Likert scale, ranging from *never* (0) to *almost always* (5). Items of subscale SD are associated with the most common mental health disorders, such as depression, addiction and anxiety, and the subscale SR measures functioning at work, school, or leisure. Lastly, IR measures one's functioning concerning a partner, friends, and family. Altogether, the 45 items form the complete questionnaire. The higher the total score, the more it reflects one's distress related to many symptoms, decreased satisfaction and quality of life, and interpersonal difficulties.

De Jong et al. (2007) investigated the validity of the OQ-45 in Dutch samples. The three-factor solution of SD, SR and IR were not satisfactory. A varimax rotation yielded a component with an eigenvalue greater than 1, which explained some variance. These items were mainly from the SD subscale and appeared to be related to somatic (e.g., *'My heart is beating too fast'*) and cognitive (e.g., *'I am anxious'*) characteristics of anxiety. As a result, the Anxiety and Somatic Distress subscale (ASD) was distinguished and added in the Dutch version. It examines whether there were complaints of anxiety and physical manifestations of

anxiety. The internal consistency of the OQ-45 in a Dutch clinical sample is sufficient for all subscales: SD α = .91, ASD α =.84, IR α = .80, SR a = .69, as well as for the total score (a = .93). Test-retest for Dutch communal and clinical samples is good: SD r_{tt} = .95, ASD r_{tt} =.89, IR r_{tt} = .84, SR r_{tt} = .72, along with a very good test-retest of the total score (r_{tt} = .96) (De Jong et al., 2007). The OQ-45 can be found in Appendix C.

Positive mental health symptoms - MHC-SF-P

The participants completed 14 items for emotional, social, and psychological well-being on the Mental Health Continuum - Short Form (MHC-SF) questionnaire to assess positive mental health. The clients at Mindfit filled in the MHC-SF-P: the adapted version of the Mental Health Continuum – Short Form (MHC-SF; Lamers et al., 2011) for use in practice. The MHC-SF measures the three well-being scales (i.e., EWB, SWB and PWB) and slightly differs from the adapted MHC-SF-P. The subscale 'social-relational well-being' (S-RWB) was added, along with a more straightforward formulation of all original questions. The subscale SWB of the original MHC-SF is renamed in the MHC-SF-P as S-CWB and stands for Social-Communal Well-being [Dutch: sociaal maatschappelijk welbevinden]. On behalf of this simplification, it was meant to be easy to use in practice for all clients. All four scales were accessed within this study. The questionnaire starts with: *"During the past month, how often did you feel..."*. Example items for emotional-, social-, and psychological well-being are, respectively: *"...interested in life","...that the way our society works makes sense to you?", "... that your life has a sense of direction or meaning to it?"*. Participants could rate their answer from *never* (0) to *every day* (5). A higher score indicated a higher subjective experience of well-being. The original MHC-SF consisted of high internal and moderate test-retest reliability (Lamers et al., 2011). There were no psychometric properties of the MHC-SF-P yet since they are currently under investigation (Schuffelen et al., in press). However, the present study examined the MHC-SF-P and it showed a good internal consistency for the

subscales EWB ($a = 0.874$), S-RWB ($a = 0.850$) and PWB ($a = 0.803$). Subscale S-CWB was questionable ($a = 0.635$). The total MHC-SF-P had excellent internal consistency ($\alpha = 0.921$). The questionnaire is displayed in Appendix D.

Resilience – GSAAS

Resilience was measured by the Generic Sense of Ability to Adapt Scale (GSAAS; Schuffelen et al., 2021). This questionnaire measures the extent to which an individual feels able to readjust and actively deal with the psychosocial consequences of personally challenging events (e.g., life events or daily hassles) while maintaining life satisfaction. It is a practical and quick instrument for measuring a competence relevant to maintaining mentally healthy. The GSAAS consists of ten items rated by a five-point Likert scale, ranging from *not at all* (0) to *always* (5). An example item is *'I feel empowered'*. The higher the score, the higher the generic sense of adaptation ability. The questionnaire appeared to be a reliable and valid tool to assess resilience. The internal consistency of the GSAAS was excellent ($\alpha = 0.907$) (Schuffelen et al., 2021). The full questionnaire is presented in Appendix E.

Data analysis

The Statistical Package for Social Sciences (IBM SPSS Statistics), version 27, analysed the data. The data were screened to include the necessary questionnaires per person to establish the final dataset. For limiting extreme values to reduce the effect of potential spurious outliers, the data were transformed by winsorizing. Frequency and descriptive analyses were carried out to establish the descriptive characteristics of clients. The descriptive statistics of the clients' socio-demographics were their age, gender, educational level, and marital status. The Shapiro-Wilk test was consulted, as well as visually checking the histograms and Q-Q plots to check for normality. In the case of non-normality (not resulting from outliers), the Central Limit Theorem (CLT) was assessed to achieve normality. CLT comprises that the sampling distribution of any mean becomes (more) nearly normal as

the sample size increases, regardless of the shape of the distribution (De Veaux et al., 2016).

Further, the alpha level (α) was fixed to <0.05. In case of significant effects, post hoc

Bonferroni comparisons were calculated. Changes (in subscales) in well-being and mental

illness at T0, T1, and T2 were analysed to interact with resilience and mental illness. The

effect sizes are calculated in partial eta squared ($\eta_p{}^2$), Cohen's *d*, and R^2. Cohen (1988)

suggested 0.01, 0.06, and 0.14 to indicate small, medium or large effects for the proportion of

explained variance of partial eta squared. Further, Cohen (1988) gave a rule of thumb to

classify Cohen's *d* effect sizes: 0.00 – 0.20 are negligible, 0.20 – 0.50 are small, 0.50 – 0.80

are medium, and ≥ 0.80 are large. Lastly, for R^2, values of 0.02 are considered small, 0.13

medium, and 0.26 as large (Cohen, 1988).

To test the first hypothesis, if mental illness would be more affected during a strict

lockdown period – compared to no strict lockdown period, an Independent Samples T-Test

for the BSI-18 questionnaire was used, with the total score as the dependent variable (DV),

and T1 and T2 as independent variables (IV). Furthermore, a one-way ANOVA was

performed for the OQ-45 questionnaire, whereby the severity of restrictions (T0, T1 and T2)

were the IVs, and the total score was the DV. To test if the impact of the restrictions would

be more significant for complaints of depression and anxiety than for somatic complaints, a

one-way MANOVA was used for the BSI-18 subscales Anxiety, Depression and Somatic

complaints. The subscales functioned as DVs and the severity of restrictions (T1 and T2) as

IV. The OQ-45 was used to test the same hypothesis, albeit with a one-way MANOVA. The

subscales SD, SR, IR and ASD function as DVs, and the severity of restrictions (T0, T1 and

T2) as IVs. For testing if the impact of the restrictions on mental illness depends on one's

level of resilience, the PROCESS matrix extension for SPSS, version 4.1 (Hayes, 2017) was

used to perform a simple linear regression moderation analysis (model 1). The severity of

restrictions was the IV (T1 and T2), the total BSI-18 score the DV, the GSAAS functioned as

the moderator (M), and gender accounted as a covariate.

A one-way ANOVA was performed to test the second hypothesis if mental health is lower during a (partial) lockdown than during mild restrictions or no restrictions and lower during mild restrictions compared to no restrictions. The total MHC-SF score functioned as DV and T0, T1 and T2 as IV. To test if the impact of the restrictions would be more significant on EWB than on SWB and PWB, a one-way MANOVA was performed for the MHC-SF-P subscales EWB, PWB, S-CWB and S-RWB. The subscales functioned as DVs, T0, T1 and T2 as IV. For testing if the impact of the restrictions on mental health depends on one's level of resilience, the PROCESS matrix extension for SPSS, version 4.1 (Hayes, 2017) anew was used to perform a simple linear regression moderation analysis (model 1). The severity of restrictions was the IV (T1 and T2), the total MHC-SF score functioned as DV, the GSAAS as moderator, and gender served as a covariate.

To test the third hypothesis, if the severity of government restrictions has a more substantial effect on mental health than on mental illness, a one-way MANOVA was performed. The severity of restrictions functioned as IV, and MHC-SF and OQ-45 as DV. Another MANOVA is used for the MHC-SF and the BSI-18. Running an analysis for all three questionnaires would give poor results since the OQ-45 and BSI-18 overlapped for 17 clients, making the sample too small for proper outcomes.

Data analysis in PROCESS

The PROCESS 4.1 extension macro for SPSS tested the moderations ($H1_c$ and $H2_c$) by multiple regression analyses, using bootstrapping that uses unstandardized coefficients. Such a bootstrapping method resamples the original data by drawing random samples from the original data to create simulated samples. As a result, the bootstrapping method does not make assumptions about the sample distribution, whereas traditional methods make assumptions about the distribution in general (Hayes, 2012). Before the analyses by

PROCESS, gender and the severity of restrictions were dummy coded for use in regression analyses. For running a robust analysis against violations of homoscedasticity of the residuals, option HC4 is used. Further, the predictor (GSAAS score) was mean centred on easing interpretation of the regression. For probing the interactions, the Johnson-Neyman technique was used to avoid arbitrarily selecting the moderator's values to estimate the conditional effects of the independent variable (Hayes, 2012).

Results

Of the 5567 clients who applied for treatment, 318 individuals were omitted from this study since they were over 30 years old, leaving the final sample of 5249 respondents. 69.3% of the sample is female ($n = 3640$). The mean age is 23.75 years ($SD = 3.68$). More details about the sample's demographic characteristics are displayed in Table 1.

Table 1

Descriptions of the participants (N = 5249)

Characteristic		Count/mean	Percentage
Age (M±SD)		23.75±3.68	
Gender	Female	3640	69.3
	Male	1607	30.6
	Unknown	2	0.01
Marital Status	Married	195	3.7
	Registered partnership	59	1.1
	Divorced	26	0.5
	Unmarried	1464	27.9
	Unmarried, living together with a partner	340	6.5
	Widowed	2	0.01
	Unknown	2539	48.8
	De facto separation	1	0.01
Education	Kindergarten	7	0.1
	Primary school	86	1.6

Secondary education, first phase - high	552	10.5
Secondary education, second phase - middle	1995	38
Secondary education, second phase - high	228	4.3
University of applied sciences	647	12.3
University	192	3.7
Unknown	1542	29.4

Mental illness

The one-way ANOVA showed that there was no statistically significant difference in OQ-45 score between individuals who applied prior to COVID-19 (T0), during mild restrictions (T1), and amid a (partial) lockdown (T2) as determined by ANOVA ($F(2, 2984) = 0.827$, $p = .438$). There was, however, a statistically significant difference in total BSI-18 mean scores as determined by an independent samples t-test ($t (2246) = -2.72$, $p = .007$, $d = .125$). The BSI-18 total scores of clients who applied during a (partial) lockdown (T2) were significantly higher (25.76±12.16) than for the group that applied during mild restrictions (T1) (24.25±12.04). For the BSI-18, a one-way MANOVA showed a significant difference at the subscale DEP ($F(1, 2246) = 11.346$, $p = .001$). As shown in Table 2, clients who applied during a (partial) lockdown scored significantly higher on the depression scale. Furthermore, clients who applied during a (partial) lockdown scored significantly higher on the anxiety sub-scale than those at T1 ($F(1, 2246) = 4.009$, $p = .045$). There were no differences for SOM ($F(1, 2246) = 0.591$, $p = .442$).

Table 2

BSI-18 mean subscale scores and between-group effect sizes

	Pre-COVID-19 (T0)	Mild restrictions (T1) $n = 676$	(Partial) lockdown (T2) $n = 1572$	
	M (SD)	*M (SD)*	*M (SD)*	η_p^2
DEP	.	1.506 (0.88)*	1.644 (0.90)*	.005
ANX	.	1.602 (0.87)*	1.684 (0.90)*	.002

SOM .	0.935 (0.72)	0.960 (0.69)	.000
M (SD)	*M (SD)*	*M (SD)*	*d*
Total .	24.25 (12.04)*	25.76 (12.16)*	.125

Note: * is significant with $p < .05$. Effect sizes are partial eta squared and Cohens *d*.

A one-way MANOVA was performed for the OQ-45 subscales (i.e., SD, SR, IR, ASD). Wilks's Lambda showed a significant difference between applications for treatment and severity of restrictions in OQ-45 subscales ($\Lambda = 0.993$, $F(8, 5962) = 2.435$, $p = .013$, $\eta_p^2 = .003$). Univariate tests show that there is a significant difference on the subscale ASD ($F(2, 2984) = 3.517$, $p = .030$, $\eta_p^2 = .002$). A Bonferroni post hoc analysis shows that the ASD scores at T0 (26.64±7.70) were statistically significantly higher than for clients who applied for treatment at T2 (25.79±8.18, $p = .027$). Table 3 shows all subscales' mean scores, standard deviations, and between-group effect sizes.

Table 3

OQ-45 mean subscale scores and between-group effect sizes

	Pre-COVID-19 (T0) $n = 1470$	Mild restrictions (T1) $n = 515$	(Partial) lockdown (T2) $n = 1002$	
Subscale	*M (SD)*	*M (SD)*	*M (SD)*	η_p^2
SD [a]	49.40 (13.34)	48.83 (13.61)	48.24 (13.78)	.001
SR	13.53 (4.70)	13.23 (4.76)	13.49 (4.73)	.001
IR	13.81 (6.03)	14.35 (6.16)	13.93 (6.09)	.001
ASD	26.64 (7.70)*	26.12 (8.13)	25.79 (8.18)*	.002
	M (SD)	*M (SD)*	*M (SD)*	η_p^2
Total	76.71 (20.82)	76.36 (21.44)	75.61 (21.46)	.001

Note: * is significant with $p < .05$. Effect sizes are Partial eta-squared (η_p^2).

[a] Subscale Symptom Distress

Mental illness and resilience

PROCESS 4.1 investigated whether the association between the levels of restrictions

on the severity of psychopathology is smaller when resilience is greater. Figure 2a represents the model (pp. 12). The bootstrapped moderation analyses revealed that the overall model accounted for 19.20% of the explained variance ($R^2 = .192$, $p < .001$). The model indicated that lower levels of resilience ($B = -.7317$, $SE_{(HC4)} = .0686$, $p < .001$) were associated with higher severity of mental illness. Furthermore, the severity of restrictions were associated with symptoms of mental illness ($B = -.7317$, $SE_{(HC4)} = .5073$, $p = .0313$). However, the overall interaction between resilience and the severity of restrictions was not statistically significant ($B = -.1520$, $SE_{(HC4)} = .0818$, $p = .063$), indicating that resilience does not moderate the relationship between the severity of restrictions and the severity of mental illness. Thus, there was a significant main effect between the severity of restrictions and the severity of psychopathology. All the interrelationships moderation analyses for mental illness are displayed in Table 4.

Table 4

Interrelationship moderation analysis with restriction severity as the predictor ($n = 2251$)

	Severity of psychopathology			
	b	$SE_{B(HC4)}$	t	p
Severity of restrictions	1.0932	.5073	2.1548	.0313
Resilience	-.7317	.0686	-10.6726	<.0001
Interaction effect[a]	-.1520	.0818	-1.8575	.0634
Gender	.6407	.5148	1.2446	.2134

Note. Overall model summary: $F(4, 2246) = 128.6871$, $p < 0.001$.

[a] Severity of restrictions x resilience.

However, the Johnson-Neyman plot (Figure 4) indicated a region of significance where the Confidence Interval (CI) does not cross zero. The CI crosses zero at 17.6, indicating that at lower and medium levels of resilience, the severity of restrictions on mental illness is significantly moderated by resilience. Figure 5 shows that at greater levels of

resilience, the difference in psychopathology between levels of restrictions is smaller.

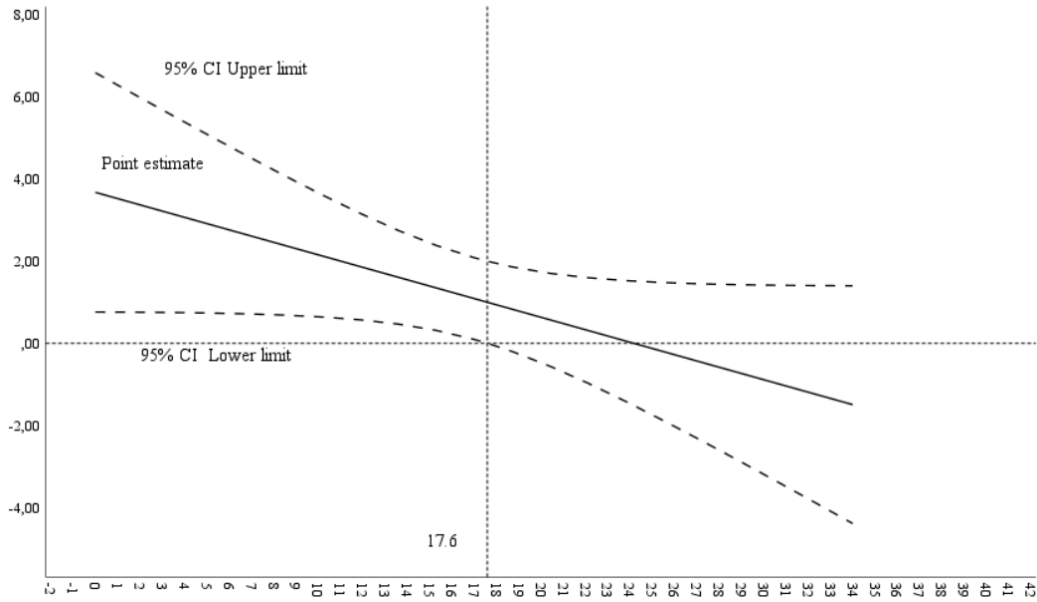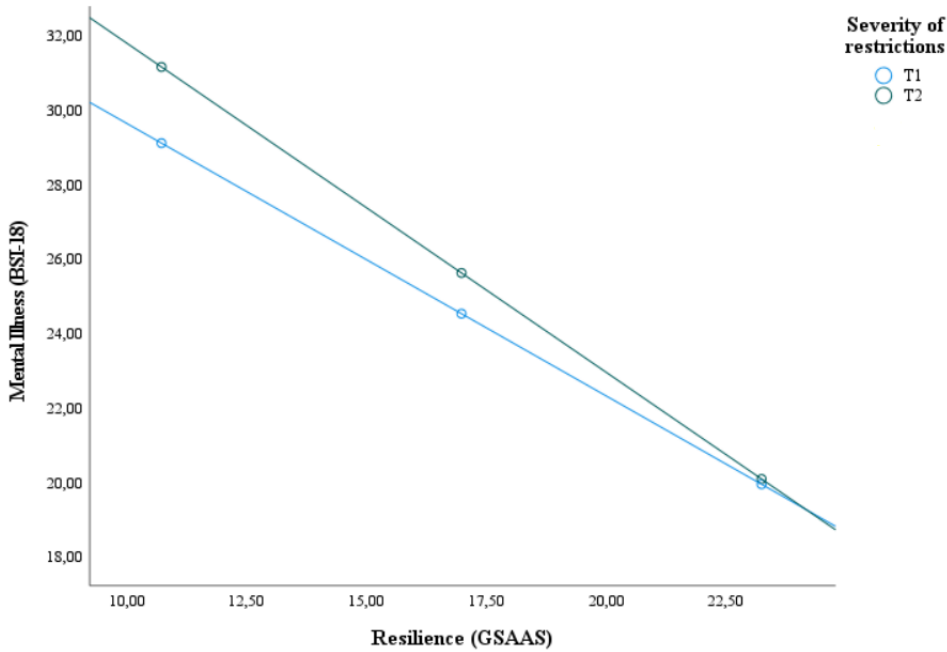**Figure 4**

Johnson-Neyman interaction plot

Figure 5

Interaction plot H_{1c}

Positive mental health

A one-way ANOVA showed that there was no statistically significant difference in

MHC-SF-P score between individuals who applied prior to COVID-19 (T0), during mild restrictions (T1), and amid a (partial)lockdown (T2) as determined by ANOVA ($F(2, 5111)$ = 2.913, p = .054). A one-way MANOVA was performed for the subscales of the MHC-SF-P. Wilks's Lambda showed no significant difference between applications for treatment and severity of restrictions in MHC-SF-P subscales (Λ = 0.079, $F(8, 10216)$ = 2.362, p = .089, η_p^2 = .001). Still, univariate tests show that there is a significant difference for the subscale S-CWB ($F(2, 5111)$ = 4.621, p = .010, η_p^2 = .002). Bonferroni post hoc analyses indicate that clients who applied at T0 (2.801 ±0.82) scored significantly lower at S-CWB than clients who applied at T2 (2.883 ±0.80, p = .001). Table 5 gives an overview of all outcomes.

Table 5

MHC-SF mean total- and subscale scores and between-group effect sizes (n = 5114)

	Pre-COVID-19 (T0)	Mild restrictions (T1)	(Partial) Lockdown (T2)	
	$n = 1401$	$n = 1168$	$n = 2525$	
Subscale	*M (SD)*	*M (SD)*	*M (SD)*	η_p^2
EWB	2.472 (1.08)	2.547 (1.05)	2.538 (1.06)	.001
S-RWB	3.064 (1.08)	3.082 (1.02)	3.108 (1.05)	.000
S-CWB	2.801 (0.82)*	2.862 (0.83)	2.883 (0.80)*	.002
PWB	2.605 (0.92)	2.675 (0.91)	2.662 (0.91)	.001
Total	2.741 (0.83)	2.797 (0.81)	2.804 (0.82)	.002

Note. * is significant with $p < .05$. Effect sizes are Partial eta-squared (η_p^2).

Positive mental health and resilience

PROCESS 4.1 investigated whether the association between the levels of restrictions on mental health (well-being) depends on one's level of resilience. Figure 2b visually presents the model (pp. 14). Bootstrapped moderation analyses showed a highly significant overall effect, indicating that the overall model accounted for 41.35% of explained variance (R^2 = .4135, $p <.001$). Nevertheless, the analyses revealed that the interaction effect was insignificant (p = .8721). Still, within this model, resilience can be seen as a significant

moderator ($p <.001$). Gender significantly influences the MHC-SF-P score since there is a difference in the means for females and males on the total score after covarying out the severity of restriction ($p <.001$). All interrelationships moderation analyses performed for mental health (well-being) are displayed in Table 6. The following figure, Figure 6, shows that at greater levels of resilience, experiences of positive mental health are larger.

Table 6

*Interrelationship moderation analysis with the severity of restrictions as a predictor*

$n = 2232$	Positive mental health			
	b	$SE_{B(HC4)}$	t	p
Severity of restrictions	.0136	.0280	.4855	.6273
Resilience	.0827	.0037	22.2397	<.0001
Interaction effect [a]	-.0007	.0044	-.1610	.8721
Gender	.1244	.0289	4.3111	<.0001

Note. Overall model summary: $F(4, 2227) = 421.2322, p < 0.001$.

[a] Severity of restrictions x resilience.

Figure 6

Interaction plot H_{2c}
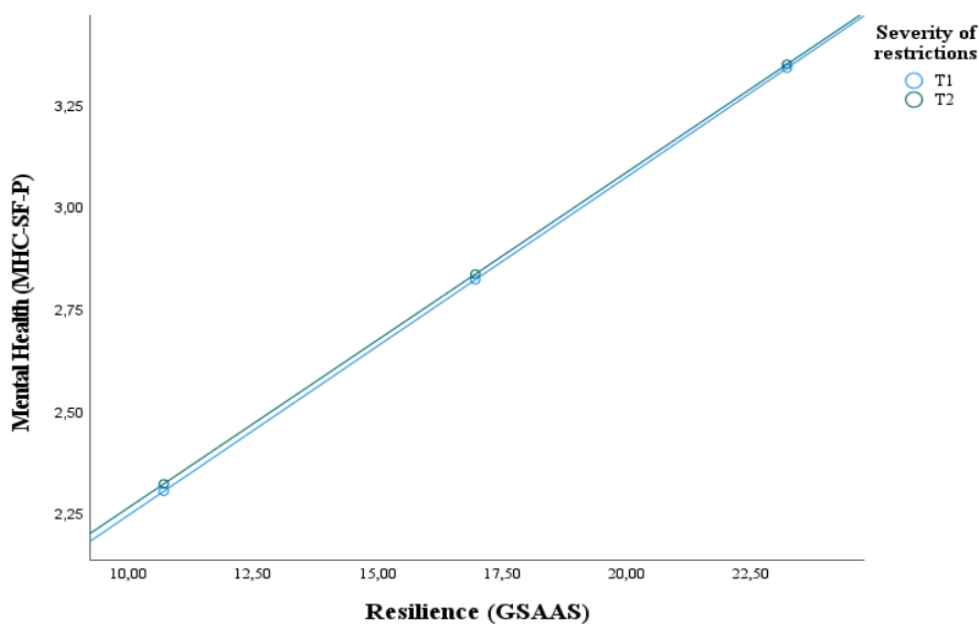
The effect difference between mental illness and positive mental health

A one-way MANOVA was performed for the OQ-45 and MHC-SF total scores. Wilks's Lambda showed no significant difference between applications for treatment and severity of restrictions in the total MHC-SF and OQ-45 scores ($\Lambda = 1.000$, $F(4, 5814) = .319$, $p = .865$). Another MAVOVA was carried out to compare the total scores of the MHC-SF and the BSI-18. Wilks's Lambda showed a statistically significant difference for individuals applying during mild restrictions (T1) and a (partial) lockdown (T2) for in the total scores ($\Lambda = 0.997$, $F(2, 2213) = 3.664$, $p = .026$, $\eta_p^2 = .003$). The analysis shows a difference in the total scores of the BSI-18. Clients who applied at T1 (24.367 ± 12.07) had a significantly lower total score than clients who applied at T2 (25.807 ± 12.14, $p = .011$, $\eta_p^2 = .003$). There was no significant difference at total MHC-SF scores ($F(1, 2214) = 0.188$, $p = .665$).

Discussion

Public health crises, of which the COVID-19 pandemic, are linked with significant physical and mental health risks, heightened stress and fear, a decreased sense of control, and overall uncertainty. This study aimed to investigate the effect of the intensity of COVID-19 governmental sanctions (i.e., (partial) lockdown, mild restrictions, or pre-COVID 19) on the positive mental health of young adults aged 18-30 applying for treatment at various moments of sanctions during the COVID-19 pandemic in the Netherlands. Additionally, the effects of resilience on mental health and mental illness were investigated.

The findings of the current study revealed partial evidence that overall psychopathology was higher for clients applying during a (partial)lockdown than mild restrictions or pre-COVID-19. Resulting from the BSI-18 questionnaire, there is a significant difference in total scores at various moments of application. Clients who applied during a (partial) lockdown scored significantly higher on mental illness than clients who applied

during mild restrictions. As measured by the OQ-45, there was no significant difference in the severity of mental illness pre-COVID-19, during mild restrictions, or a (partial) lockdown. On the subscale level, based on the results of the BSI-18, symptoms of depression and anxiety were significantly higher at a (partial) lockdown than midst mild restrictions. As expected, there were no statistically significant differences found for somatic complaints. In contrast, based on the results of the OQ-45, overall psychopathology did not significantly differ at T0, T1 or T2. However, there was a significant difference in anxiety and anxiety-associated somatic complaints (sub-scale ASD). These complaints were significantly higher for clients who applied prior to the pandemic than those who applied during a (partial) lockdown, indicating higher experiences of these complaints before the pandemic.

There was no evidence of a difference in positive mental health for individuals applying prior to the pandemic, amid mild restrictions or during a (partial) lockdown. Still, there was one significant difference at the sub-scale level found. Clients who applied before the pandemic scored significantly lower at social communal well-being (S-CWB) than clients who applied during a (partial) lockdown. There were no moderating roles of resilience identified. The results suggest that the interaction effects of resilience are not significant for mental illness nor mental health. However, the moderation is significant for mental illness at lower and middle levels of resilience. Apart from the interaction effects, resilience accounted for 19.2% of the variance in mental illness scores and 41.4% in positive mental health scores.

Findings for mental illness

The results of the BSI-18 of the current study are similar to Dalkner and colleagues (2021). They found higher scores during a lockdown in the BSI-18 subscales of depression, anxiety, and the total score in bipolar patients than post-lockdown (T1 in the current study). The findings on the BSI-18 are opposed to the results of the OQ-45. Overall psychopathology did not significantly differ, and anxiety-associated somatic complaints were higher at T0 than

at T2. Combined, there are mixed results since one questionnaire revealed significant differences in the total score, and the other explains there are not. There are a few possible explanations for this discrepancy in outcomes. First, in ROM, measurement instruments are divided into generic or diagnosis-specific instruments. Within this study, the OQ-45 and BSI-18 are generic instruments used to measure mental illness. These generic instruments measure non-diagnostic psychiatric symptoms and one's quality of life, while diagnosis-specific instruments measure the severity and presence of psychopathology symptoms. Van der Mheen et al. (2018) found that the BSI performed better in ROM than the OQ-45 for correctly measuring anxiety symptoms. An explanation could be that the BSI is more focused on symptoms at the item level, making it a little less 'generic' and a bit more 'diagnosis-specific' than the OQ-45. In sum, the BSI is more prone to capture anxiety symptoms and perhaps other symptoms of mental illness, while the OQ-45 covers more items on general functioning.

Second, there were positive consequences of the pandemic for some. For instance, Castelein and colleagues (2021) found these consequences had to do with perceiving the world as more uncluttered and straightforward since they had more time for themselves and fewer stimuli than pre-pandemic. Another positive consequence was a lower frequency of contact with others, leading to fewer obligations and eventually relieving pressure concerning social relationships. Moreover, working from home also caused less stress. Another study found that more severe home confinement measures were associated with decreased social anxiety symptoms (Hawes et al., 2021). Compared to pre-pandemic levels, these findings could clarify why there was a significant decrease in anxiety and subsequent anxiety-associated somatic complaints in a (partial) lockdown.

Findings for positive mental health

The current study's findings revealed no evidence of a difference in positive mental health for individuals applying prior to the pandemic, amid mild restrictions, or during a (partial) lockdown. As noted before, this research found a single significant difference at the sub-scale level regarding S-CWB. At first glance, the results of this study differ from other studies. For instance, Visser and Law-van Wyk (2021) found that social well-being decreased during a lockdown because participants doubted society and did not feel they belonged or could contribute to society. Riva et al. (2020) also mentioned a decrease in social well-being. However, the corresponding effect sizes of the current study are considered negligible and minor (Cohen, 1988), which means that the found differences do not have clinical meaningfulness, although they keep their meaningfulness for research purposes. Still, despite these contrasting findings, there could be an explanation for higher social communal well-being during a (partial) lockdown within this study. Feng and Tong (2022) described that the degree to which people connect with others might influence their perceived social support. For instance, by interacting with friends through social media, which provides people with access to peer connections, people can regain a sense of social inclusion, belonging, and social support. Some of these factors are core components of social well-being. It is possible that, due to the increased interactions with others via telephone or internet, individuals felt more connected during a (partial) lockdown than before a lockdown.

Findings for resilience

Interestingly, resilience as a moderator was not statistically significant for both mental health and mental illness. These findings indicate that mental illness or positive mental health derived from the severity of restrictions does not depend on the level of resilience. However, for mental illness, the Johnson-Neyman plot showed that at lower and middle levels of resilience, the moderation is significant. Thus, when resilience is high, a significant

moderation effect does not occur to conclude whether the difference between the severity of psychopathology within mild restrictions or a (partial) lockdown is different. This moderation is significant at low and moderate levels of resilience, and the mental illness derived from mild restrictions or (partial) lockdown depends on one's level of resilience. It does make sense that, as mild restrictions and (partial) lockdowns were associated with mental illness, an improvement in resilience decreases the damaging effect of restrictions, which increases mental illness. Also, lower levels of resilience were associated with higher levels of mental illness, which, combined with the moderation, suggests that treatment focussing on improving resilience in individuals with low resilience during mild restrictions and (partial) lockdowns could decrease (symptoms of) mental illness.

Strengths

The present study has several strengths. First, it captured the prevalence of positive mental health in individuals aged 18-30 years: the presence of emotional well-being, psychological well-being, and social (relational) well-being. Furthermore, this study captured the prevalence of mental illness, namely symptoms of anxiety, depression, and somatic complaints during multiple stadia of the pandemic. These results indicate how different groups of help-seeking individuals experienced the different stages of the pandemic.

Second, much-needed longitudinal data on the impact of the restrictions and (partial) lockdowns on young adults who apply for BGGZ health care is provided. Various studies have already evaluated the burden of mental health problems during the COVID-19 pandemic among (mental) healthcare providers (e.g., De Kock et al., 2021; Hossain et al., 2020; Wald et al., 2020). Some studies even considered their level of resilience during the pandemic at the same time (e.g., Cheng et al., 2022). The evaluated burden for psychiatric patients during COVID-19 was also frequently studied, albeit to a lesser extent (e.g., Kok et al., 2022; Pan et al., 2021; Sergeant et al., 2020). However, to the author's knowledge, no studies evaluate the

burden for individuals who apply for treatment at a mental health care provider and, in most cases, were not diagnosed with a mental disorder earlier.

Third, this study is one of the few that measured the association of the lockdown severity on mental health and mental illness. Most studies solely focus on mental illness and do not consider positive mental health. By studying both factors, a more complete and possibly more accurate picture of the experiences of individuals applying for mental help is drawn.

Fourth, the relationship between resilience with positive mental health and mental illness is investigated during this period. The outcomes of the current study contribute to the robustness of the dual continua model by validating the relevance of resilience. Individuals with higher levels of resilience experienced a lower severity of psychopathology and higher levels of mental health. The relationship between resilience and mental illness explained more variance than the relationship between resilience and positive mental health. This variance indicates an even greater importance of strengthening resilience to protect individuals from mental illness, as mentioned in earlier research (Davydov et al., 2010; Fredrickson, 2001).

Fifthly, this study used Bonferroni post hoc tests in the analysis. Bonferroni produces the most narrow confidence intervals, which indicates it has the best ability to detect an actual difference between groups compared to other commonly used post hoc tests (Bobbitt, 2020), which decreases the risk of making a type I error. In the case of a type 1 error, the null hypothesis is falsely rejected when the hypothesis is true. Thus, making the findings of this study likely genuinely accurate.

Another strength was the availability of pre-pandemic data compared to many other studies, which often hold no measures from that time. This data availability made it possible to compare the experiences of help-seeking individuals prior to the pandemic, mild

restrictions and (partial) lockdown(s).

Lastly, within this study, there is a reduced chance of bias. There is no selection or non-response bias since every client who applied for help needed to fill in several questionnaires, and they all were included in the sample. Besides, there is no interviewer bias since all questions were administered via ROM.

Limitations

While a strength of this study was the quantitative approach that included well-validated psychometrically measures for capturing positive mental health, mental illness and resilience, and it is limited in that it was unable to explore the 'lived' experience of young individuals through the pandemic since it is beyond the scope of this study to incorporate the qualitative approach. The quantitative approach could have given a narrower or black-and-white view of their experiences than was legitimate. A complementary qualitative study could further scrutinize the experiences of (young) adults, in other words, their experiences during the various moments of restrictions and (partial) lockdowns.

Secondly, not all questionnaires are measured throughout the whole period of ROM data. It concerns the measures for resilience (GSAAS), the BSI-18 and the OQ-45. The GSAAS was recently developed and thereby not available at the start of collecting ROM data. The BSI-18 can be seen as replacing the OQ-45, making these questionnaires overlap at some point. Still, the OQ-45 measures a broader range of symptoms, and the BSI-18 is more specific to capturing symptoms of anxiety, depression and somatic complaints. As a result, solely the MHC-SF was administered during the whole study. As a result, it was impossible to capture resilience or depression and anxiety symptoms prior to the pandemic, viz., this study was unable to investigate possible differences in the level of resilience, anxiety, and depression for the entire research period.

Thirdly, the study's findings imply that higher severity of restrictions significantly

predicts mental illness. However, several additional factors may have also occurred that could have influenced these differences, as the study is not a controlled experiment. Any impairment of mental illness could be caused by other things, such as the death of a loved one or being fired.

Furthermore, it is questionable if this study's findings are generalizable for (young) adults aged 18-30 since the sample consists solely of individuals who reached out for BGGZ mental healthcare. Mindfit is mainly based at several locations in the east and northeast of the Netherlands. It is uncertain that the results can be generalized to the whole BGGZ population aged 18-30 in the Netherlands. Additionally, 69.3% of the sample is female, which means that gender across the sample is not equally divided and, perhaps, cannot be generalized. On the other hand, women are more likely to have mood and anxiety disorders (lifetime prevalence) (Knispel et al., 2015), which are commonly seen within BGGZ, making generalizability a subject of debate.

Recommendations

A minority of individuals with mental health problems received treatment before the pandemic (WHO, 2022). An umbrella review by the WHO (2022) revealed that the pandemic widened this mental health treatment gap, and outpatient mental health services have been disrupted the most. The WHO (2022) reported positive evaluations of a complete shift to e-mental health care during COVID-19 in terms of (cost) effectiveness, acceptability and convenience, especially for the more common mental illnesses and outpatient care. Further, Ivbijaro and colleagues (2020) questioned what help individuals would like to see made available in possible future pandemics. Participants mentioned, for instance, a need for personalized professional telephone consultations or virtual peer-support sessions. During the pandemic, more online social support (its form does not matter) was characterized by higher levels of positive mental health (Canale et al., 2022). Therefore, it is advised to provide

proper alternative care methods for future pandemics, such as therapy via telephone or internet support (i.e., video calls).

The outcomes of this study showed the relevance of resilience in general and during a pandemic, especially to sustain positive mental health. As mentioned, lower levels of resilience were associated with higher levels of mental illness, which, combined with the moderation, suggests that treatment focussing on improving resilience in individuals with low resilience during mild restrictions and (partial) lockdowns could decrease (symptoms of) mental illness. Additionally, research by Kuntz (2021) concerning resilience during a global pandemic pointed out that about half of the interviewed participants marked peer support as a crucial resource to cope with pandemic stressors. Peer support is also seen as a factor in promoting resilience (Ivbijaro et al., 2020; Canale et al., 2022). Further, it is routinely linked to developing one's positive mental health and recovery from mental illness. Intriguingly, the participants noted that peer support was insufficient to impact these pandemic-related stressors, although they rated these relationships as supportive (Kuntz, 2021).

It is recommended to focus (even more on) clients' resilience in treatment, for instance, by using Minddistrict. Minddistrict is a user-friendly eHealth platform with an extensive catalogue of online modules, diaries and questionnaires which healthcare organizations can use to treat or guide their clients (Minddistrict, n.d.). Mindfit already uses the platform. Therefore it would be easily accessible and directly applicable to their therapists. The intervention' ACT: by Complaint to Resilience module in Minddistrict' [Dutch: ACT: van klacht naar Veerkracht] can be used to strengthen one's resilience.

The following recommendation would be to set up a qualitative study. It could also help capture detailed experiences through the COVID-19 restrictions and subsequent (partial) lockdowns. In this way, it is possible to capture more detailed experiences of multiple stadia

of the pandemic. These detailed experiences can complement the current research and could, for example, give more detailed recommendations for support for future pandemics.

Conclusion

Partial evidence revealed that mental illness was higher for clients applying during a (partial)lockdown than mild or pre-COVID-19. Symptoms of depression and anxiety were significantly higher at a (partial) lockdown than midst mild restrictions. Anxiety symptoms and ensuing psychosomatic complaints were higher pre-COVID-19 than during a (partial) lockdown. Overall positive mental health did not significantly differ during multiple stadia of the pandemic, although social communal well-being significantly increased for clients who applied during a (partial) lockdown compared to clients who applied before COVID-19. Resilience was a significant predictor of positive mental health and mental illness. However, as a moderator for mental illness, it only remained significant at low and moderate levels of resilience, and the severity of restrictions was not significant for positive mental health.

It is recommended to facilitate clients with and develop interventions to buffer resilience to protect mental health and diminish or prevent mental illness. Peer-to-peer support remains an important factor since it promotes resilience. Additionally, this support is routinely linked to developing one's well-being and recovery from mental illness. Providing a platform for peer-to-peer support is recommended. Additionally, future qualitative studies could give a more detailed experience of the experience of help-seeking young adults.

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Appendix A

The dual continua model of mental health and mental illness
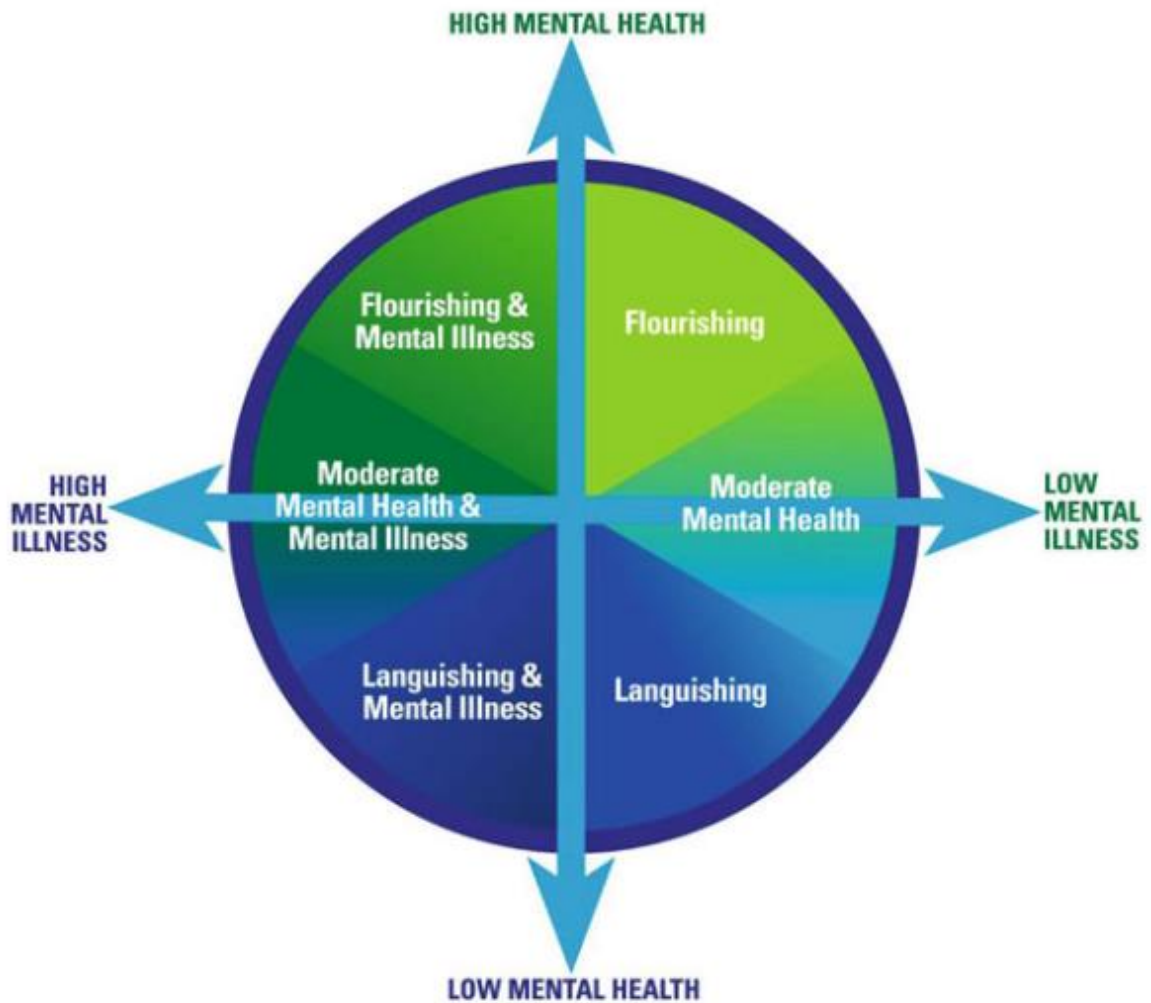
Note. Adapted from Mental health as a complete state: How the salutogenic perspective completes the picture, by C. L. M. Keyes, 2014, pp. 182. Copyright 2014 by Springer Science + Business Media.

Appendix B

Brief Symptom Inventory - 18

Brief Symptom Inventory-18

Nu volgt een lijst met problemen die mensen kunnen hebben. Lees ieder problem zorgvuldig door en kies het antwoord dat het beste weergeeft: **In hoeverre u last had van dit probleem gedurende de afgelopen week inclusief vandaag.**

Hoeveel last had u van dit probleem gedurende de afgelopen week, inclusief vandaag:	Helemaal geen	Een beetje	nogal	Tamelijk veel	Heel veel
1. Duizeligheid of moeite je evenwicht te bewaren	0	1	2	3	4
2. Geen interesse kunnen opbrengen voor dingen	0	1	2	3	4
3. Zenuwachtigheid of beverigheid	0	1	2	3	4
4. Pijn op de borst of het hart	0	1	2	3	4
5. Je eenzaam voelen	0	1	2	3	4
6. Gespannen en opgefokt voelen	0	1	2	3	4
7. Misselijkheid of dat je maag van streek was	0	1	2	3	4
8. Je somber voelen	0	1	2	3	4
9. Zomaar plotseling bang worden	0	1	2	3	4
10. Benauwdheid, moeite met ademhalen	0	1	2	3	4
11. Het gevoel dat je niets waard bent	0	1	2	3	4
12. Aanvallen van angst of paniek	0	1	2	3	4
13. Gevoelloosheid of tintelingen in bepaalde lichaamsdelen	0	1	2	3	4
14. Je hopeloos voelen over de toekomst	0	1	2	3	4
15. Je zo rusteloos voelen dat je niet stil kan blijven zitten	0	1	2	3	4
16. Je slap of zwak voelen ergens in je lichaam	0	1	2	3	4
17. Gedachten aan zelfmoord	0	1	2	3	4
18. Bang zijn	0	1	2	3	4

Appendix C

Outcome Questionnaire - 45

OQ-45

Naam patiënt:	Datum: ....
Nummer:	Geboortedatum: ....

Instructies:
Help ons begrijpen hoe u zich de afgelopen week, tot en met vandaag, hebt gevoeld.
Lees elke vraag goed door en omcirkel het getal dat uw huidige situatie het best beschrijft.
In deze vragenlijst wordt "werk" gedefinieerd als baan, school, huishoudelijk werk, vrijwilligerswerk, enz.

De cijfers betekenen: 0 = Nooit;
1 = Zelden;
2 = Soms;
3 = Regelmatig;
4 = Bijna altijd

		Nooit	Zelden	Soms	Regelmatig	Bijna altijd
1.	Ik kan goed overweg met anderen.	0	1	2	3	4
2.	Ik word gauw moe.	0	1	2	3	4
3.	Ik ben nergens in geïnteresseerd.	0	1	2	3	4
4.	Ik sta onder stress op het werk/op school.	0	1	2	3	4
5.	Ik geef mezelf overal de schuld van.	0	1	2	3	4
6.	Ik ben geïrriteerd.	0	1	2	3	4
7.	Ik ben ongelukkig in mijn huwelijk/relatie.	0	1	2	3	4
8.	Ik denk erover om een einde aan mijn leven te maken.	0	1	2	3	4
9.	Ik voel me zwak.	0	1	2	3	4
10.	Ik ben angstig.	0	1	2	3	4
11.	Na zwaar gedronken te hebben, moet ik de volgende morgen weer drinken om op gang te komen (Als u niet drinkt, "Nooit" omcirkelen).	0	1	2	3	4
12.	Ik vind bevrediging in mijn school/werk.	0	1	2	3	4
13.	Ik ben een tevreden mens.	0	1	2	3	4
14.	Ik werk/studeer te veel.	0	1	2	3	4
15.	Ik heb het gevoel dat ik waardeloos ben.	0	1	2	3	4
16.	Ik maak me zorgen over problemen in mijn familie.	0	1	2	3	4
17.	Ik heb een onbevredigend seksleven.	0	1	2	3	4
18.	Ik voel me eenzaam.	0	1	2	3	4
19.	Ik heb vaak ruzie.	0	1	2	3	4
20.	Ik voel me bemind en welkom.	0	1	2	3	4
21.	Ik geniet van mijn vrije tijd.	0	1	2	3	4
22.	Ik vind het moeilijk om me te concentreren.	0	1	2	3	4
23.	Ik voel me hopeloos over de toekomst.	0	1	2	3	4
24.	. Ik waardeer mezelf.	0	1	2	3	4
25.	Er komen verontrustende gedachten in mij op die ik niet kwijt kan raken.	0	1	2	3	4

OQ vervolg

		Nooit	Zelden	Soms	Regelmatig	Bijna altijd
26.	Ik erger me aan mensen die kritiek hebben op mijn drinken (of drugsgebruik) (Indien niet van toepassing, "Nooit" omcirkelen.)	0	1	2	3	4
27.	Ik heb last van mijn maag.	0	1	2	3	4
28.	Ik werk/studeer niet zo hard als vroeger.	0	1	2	3	4
29.	Mijn hart bonst te veel.	0	1	2	3	4
30.	Ik vind het moeilijk om met vrienden en goede kennissen om te gaan.	0	1	2	3	4
31.	Ik ben tevreden met mijn leven.	0	1	2	3	4
32.	Ik heb moeilijkheden op het werk/op school door mijn drinken of drugsgebruik (Indien niet van toepassing, "Nooit" omcirkelen.)	0	1	2	3	4
33.	Ik heb het gevoel dat er iets ergs gaat gebeuren.	0	1	2	3	4
34.	Ik heb spierpijn.	0	1	2	3	4
35.	Ik ben bang voor open ruimten, autorijden, of in de bus, trein enz.rijden.	0	1	2	3	4
36.	Ik ben nerveus.	0	1	2	3	4
37.	Ik vind dat de relatie met mijn naasten (bijv. ouders, partner, kinderen, vrienden) goed is.	0	1	2	3	4
38.	Ik heb het gevoel dat het niet goed gaat met mijn school / werk.	0	1	2	3	4
39.	Ik heb te veel meningsverschillen op het werk/op school.	0	1	2	3	4
40.	Ik heb het gevoel dat er iets mis is met mijn verstand/geest.	0	1	2	3	4
41.	Ik kan moeilijk in slaap vallen of doorslapen.	0	1	2	3	4
42.	Ik voel me neerslachtig.	0	1	2	3	4
43.	Ik ben tevreden met mijn relaties met anderen.	0	1	2	3	4
44.	Ik ben zo kwaad op het werk/op school dat ik iets kan doen waarvan ik spijt zou kunnen krijgen.	0	1	2	3	4
45.	Ik lijd aan hoofdpijn.	0	1	2	3	4

Appendix D

Mental Health Continuum – Short Form - Practise

De MHC-SF-R

De volgende vragen beschrijven gevoelens die mensen kunnen hebben. Lees iedere uitspraak zorgvuldig door en omcirkel het cijfer dat het best weergeeft hoe vaak u dat gevoel had gedurende DE AFGELOPEN WEEK.

	Nooit	Zelden	Soms	Regelmatig	Vaak	(Bijna)Altijd
Ik ben gelukkig.	0	1	2	3	4	5
Ik ben geïnteresseerd in het leven.	0	1	2	3	4	5
Ik ben tevreden met mijn leven.	0	1	2	3	4	5
Ik doe iets waardevols voor onze samenleving.	0	1	2	3	4	5
Ik denk dat ons land zich goed ontwikkelt.	0	1	2	3	4	5
Ik accepteer anderen zoals ze zijn.	0	1	2	3	4	5
Ik hoor bij een groep mensen, mijn buurt of stad.	0	1	2	3	4	5
Ik begrijp hoe onze samenleving werkt.	0	1	2	3	4	5
Ik accepteer mezelf zoals ik ben.	0	1	2	3	4	5
Ik heb grip op mijn leven.	0	1	2	3	4	5
Ik deel lief en leed met enkele mensen.	0	1	2	3	4	5
Ik word uitgedaagd om te groeien.	0	1	2	3	4	5
Ik durf mijn ideeën te uiten.	0	1	2	3	4	5
Ik heb het gevoel dat mijn leven zin heeft.	0	1	2	3	4	5
Ik kan iets betekenen voor anderen.	0	1	2	3	4	5
Ik ben tevreden met mijn sociale contacten.	0	1	2	3	4	5
Ik voel me verbonden met andere mensen.	0	1	2	3	4	5
Ik kan bij andere mensen terecht.	0	1	2	3	4	5
Ik vind mijn plek wel in deze maatschappij.	0	1	2	3	4	5

Appendix E

Generic Sense of Ability to Adapt subscale

Generic sense of ability to adapt scale (GSAAS)

Hieronder volgt een aantal uitspraken over uw huidige leefomstandigheden. In welke mate zijn deze uitspraken op u van toepassing?

1. Ik kan goed met tegenslagen omgaan.
   - o Helemaal niet
   - o Enigszins
   - o Redelijk
   - o Grotendeels
   - o Helemaal

2. Ik voel me daadkrachtig
   - o Helemaal niet
   - o Enigszins
   - o Redelijk
   - o Grotendeels
   - o Helemaal

3. Ik zie volop interessante uitdagingen
   - o Helemaal niet
   - o Enigszins
   - o Redelijk
   - o Grotendeels
   - o Helemaal

4. Ik kan goed omgaan met de stress in mijn leven
   - o Helemaal niet
   - o Enigszins
   - o Redelijk
   - o Grotendeels
   - o Helemaal

5. Ik heb invloed op mijn leefomstandigheden
   - o Helemaal niet
   - o Enigszins
   - o Redelijk
   - o Grotendeels
   - o Helemaal

6. Tegenslagen krijgen mij niet klein.
   - o Helemaal niet
   - o Enigszins
   - o Redelijk
   - o Grotendeels
   - o Helemaal

7. Als er iets onverwachts gebeurt, pas ik me gemakkelijk aan.
   - o Helemaal niet
   - o Enigszins
   - o Redelijk
   - o Grotendeels
   - o Helemaal

8. Ik kan mijn dagelijks leven goed aan.
   - o Helemaal niet
   - o Enigszins
   - o Redelijk
   - o Grotendeels
   - o Helemaal

9. Als ik iets moeilijks meemaak, weet ik altijd wel een oplossing te vinden.
   - o Helemaal niet
   - o Enigszins
   - o Redelijk
   - o Grotendeels
   - o Helemaal

10. Als ik iets wil, bereik ik dat ook.
    - o Helemaal niet
    - o Enigszins
    - o Redelijk
    - o Grotendeels
    - o Helemaal