universität wien

MASTERARBEIT / MASTER'S THESIS

Titel der Masterarbeit / Title of the Master's Thesis

The Influence of Mental Illness Stigma and Motivation as Part of the Self-Determination Theory on the Process of Help-Seeking

verfasst von / submitted by

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angestrebter akademischer Grad / in partial fulfilment of the requirements for the degree of

Master of Science (MSc)

Wien, 2021 / Vienna 2021

Studienkennzahl lt. Studienblatt / degree programme code as it appears on the student record sheet:	UA 066 840
Studienrichtung lt. Studienblatt / degree programme as it appears on the student record sheet:	Masterstudium Psychologie UG2002
Betreut von / Supervisor:	Univ.-Prof. Dr. Frank Scharnowski
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Abstract

Mental illness stigma is a well-known barrier to seeking help. The awareness of stereotypes as well as the agreement with stereotypes of mental illness hinder help-seeking. Different emotional reactions are involved in stigmatization attitudes and self-identification as mentally ill has been shown to be an important step towards help-seeking. Although there are many studies on stigma in relation to help-seeking, there are few that shed light on the motivations individuals have for seeking help. I use the motivational constructs of the Self-Determination Theory (SDT) to get more to the bottom of this question. SDT has been widely used in the work context, but not as much in the mental health context. I investigate whether stigma measurement or motivation measurements can predict attitudes towards seeking help. This is achieved by applying a machine learning model (Elastic-Net). Additionally, well-being and socio-demographics are incorporated. For assessing the feature importance permutation-based and model-based analysis was conducted. Machine learning is sufficient in large datasets with multiple input variables. N = 1751 participants were analysed. With a R^2 value of .55 a considerable part of the variance was explained. Most important predictors were self-stigmatization of help-seeking and autonomous motivation. The results help to gain better understanding of how autonomous motivation can contribute to change attitudes towards seeking help. Considering the consequences of mental illness stigma and to balance mental illness stigma, it is important to find factors that favour help-seeking.

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Introduction

Seeking Professional Help

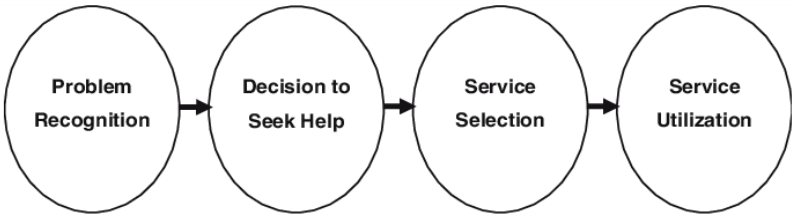
A lot of studies in the area of mental health highlight the gap between mental illness and the rates at which people are seeking help (Schomerus et al., 2019). Only one quarter of adults with severe mental distress seek professional help (Oliver et al., 2005). The Robert Koch-Institute (RKI) states that in Germany 11,3% of women and only 8,1% of men report seeking-help within one year (Rommel, 2017). For the case of depression only two thirds of the people with symptoms are looking for professional help. Rickwood and Thomas (2012) differentiate help into *formal* and *informal*. Formal or professional help includes general practitioners and other workers associated with the health system, informal help can be derived through a friend, or a family or community member (Pattyn et al., 2014). Unhandled mental problems are associated with lower quality of life in the long term and contribute to the global problems of disease (Brenes, 2007). Leaving this issue untreated causes costs for the individual up to adverse mental health effects, as well as extra costs for the work context (Evans-Lacko & Knapp, 2016). Access to primary care has fewer structural barriers in the Global North compared to the Global South, yet the gap can be found in both regions, making structural causes as only explanation unlikely (Schomerus et al., 2019). To close the gap between mental illness and help-seeking, the identification of barriers is as crucial for the global healthcare system as finding factors that favour help-seeking.

The Path to Healthcare

To find out more it is worth taking a closer look at help-seeking first. In general, help-seeking can be defined as a pathway (Rogler & Cortes, 1993) Individuals often start searching for help the first time with a considerable delay of years (Wang et al., 2005). For mood disorders, such as depression, the average delay for seeking help is eight years, simliar anxiety disorders. People with substance abuse disorders fail to seek help even more. As help-seeking is not straightforward, Eiraldi et al. (2006) define help-seeking into the following four stages (Figure 1).

Figure 1:

Stages of Help-Seeking Behaviour



Note. Eiraldi, R. B., Mazzuca, L. B., Clarke, A. T., & Power, T. J. (2006). Service utilization among ethnic minority children with ADHD: A model of help-seeking behavior. *Administration and Policy in Mental Health and Mental Health Services Research*, *33*(5), 607-622.

Since problem recognition is at the beginning of the process, it is worthwhile to look at how people perceive their symptoms and then how they translate attitudes into action. Horsfield et al. (2020) state that it does make a difference if a person identify as physically ill or mentally ill for help-seeking. Self-identification as having a mental illness is the process of a person recognizing the appraising symptoms as constituting part of a mental disorder (Stolzenburg et al., 2017). It has been shown that this is a crucial step for the help-seeking process itself (Stolzenburg et al., 2017). Self-identification is directly connected with perceived needs and help-seeking intensions (Schomerus et al., 2019). Interestingly, self-concealment - the opposite, has been shown to negatively predict attitudes towards seeking help (Kelly & Achter, 1995). People tend to have problems translating their intentions into actions. Data is suggesting that not even 50 % of the intended behaviour is realized (Faries, 2016). Sleeping, eating, and sports are common proposals for a balanced life, still human's fail to implement healthy structures in their lives even if they have positive intentions. This phenomenon is called the intention-behaviour gap (Sheeran & Webb, 2016).

Why does a person hesitate to identify with having a mental disorder? And why is it hard to overcome the intention-behaviour gap? Schomerus et al. (2019) argue that stigmatizing attitudes interfere with the process of self-identifying with being mentally ill. Stigma is defined as a mark of disgrace, pushing the individual into being a part of a stereotyped group (Schomerus et al. 2019). Consequently, Schomerus et al. (2019) argue that perceived stigma can hinder the help-seeking process. Individuals avoid the consequences that stigma brings with it by simply avoiding self-identifying as mentally ill. Since stigma is complex, it needs factors

that work against it. Among other things, Faries (2016) describes motivation as a factor that could help to fight and burst through stigma. Motivation and stigma seem to be two key concepts in the field of help-seeking.

Theory of Planned Behaviour

Over the past decade, three major elements of help-seeking have been established within social psychiatry, as described by Gulliver et al. (2012) and based on Ayjen's (1991) theory of planned behaviour (TPB): *Help-seeking attitudes*, including the personal beliefs and the willingness to seek help, *help-seeking intentions*, and the *help-seeking behaviour* itself. Ajzen (1991) describes that intension can be well predicted by attitudes, subjective norms, and perceived behavioural control. Ajzen (1991) also suggests that help-seeking attitudes can predict, intention and intention can predict the behaviour, which is why attitudes is often used as a marker for help-seeking in general. Data from the multi-centred European Study of Epidemiology about mental disorders support this connection, showing that positive attitudes towards seeking help were associated with mental health care use (Have et al., 2010). Concerning the tree main concepts, attitudes, subjective norms and perceived behavioural control, critics argue that the TPB has shortcomings in the explanation of how the attitudes derive (Chatzisarantis & Hagger, 2007). Chatzisarantis and Hagger (2007) argue that the definition of the subjective norms in the TPB is insufficient and must be supplemented by further aspects. Ajzen (1991) also argues that in some context's attitudes are more important for the behaviour and in others the subjective norm and the perceived behavioural control, which puts into focus that the degree of influence vary for each case. For the case of mental health Schomerus et al. (2009) could find that the TPB can be applied in the context of help-seeking. Still the criticism of Chatzisarantis and Hagger (2007) that the TPB does not shed enough light on the origins of attitudes is a relevant point that needs to be illuminated more.

The sociodemographic background influence the constructs of TPB (Mehdi et al., 2016). For example, is the family size influencing behavioural intentions, also suggesting that family constructs and beliefs are influencing attitudes. Sociodemographic correlate with attitudes towards seeking help in different ways. Age and educational background are influencing help-seeking recommendations (Riedel-Heller et al., 2005). Older individuals tend to turn to family physicians, and individuals with higher education tend to have more positive attitudes towards confidants and psychiatrists Also, gender plays an important role in help-seeking research. It often has been assumed that men use the health care system less (Hunt et al., 2010). This assumption can harm as it contributes to a strong narrative opinion. Hunt et al. (2010) suggest that it is important to conduct further comparative studies between genders to understand the

link better. Other studies show that women hold more positive attitudes towards seeking help, while men with greater male gender role conflicts have more negative attitudes towards seeking help (Robertson & Fitzgerald, 1992). In the following two chapters, I will present relevant sources and research on stigma as a barrier to help-seeking. In a further step, I will inspect motivation as a factor that contributes to develop higher levels in positive attitudes towards seeking help.

Mental Illness Stigma as a Barrier to the Health System

The word stigma has been used long before it found entry into social sciences and social identity studies. The Greeks used stigma to ascribe it to something unusual referred to the body, the moral status, or the character of a person (Goffman, 1963). They cut marks into the skin of individuals who were criminals and other outcasts like slaves or traitors to identify them as people who should be avoided. Goffman's standard work *Stigma. Notes on the management of spoiled identity* (1963) gave the starting signal to deal with stigma in society. Goffman (1963) used the word stigma to explain the gap between what a person should be like and their real social identity.

Basics of Stigma

In his book Goffman (1963) defines stigma as a situation where the individual is disqualified from full social acceptance. He defines types, functions and emotions which can lead to discrimination and thus an explanation of why stigma runs so deep, hitting sore points. Stigmatized individuals must constantly strive to adapt to their precarious social identity. Their self-image is confronted daily with the image of others. On the basis of Goffman's work, Link and Phelan (2001) propose a model that explains the process of stigmatization. The process starts with distinguishing and labelling differences. Then secondly, associating these differences with negative attributes. The third step comprises a process where the "us" is separated from the "them" leading to the final step: status loss and discrimination. Link and Phelan (2001) define stigma as a relationship between an attribute and a stereotype that links a person to undesirable characteristics and therefore leads to discrimination. In their definition of stigma, the aspect of discrimination is already included. For example a person with depression can be seen as "lazy" or "weak" (Berjot & Gillet, 2011). As stigma is a problem of oversimplification, Thornicroft et al. (2007) argue subsequently that stigma develops when there is a lack of knowledge and that it is important to improve mental health literacy in the public.

Types and Function of Stigma.

Hatzenbuehler et al. (2013) describe stigma as fundamental, because it is omnipresent and plays a role in all areas of life. Goffman (1963) distinguishes between three types of stigmata. The *stigma of physical deformation*, the *stigma of mental illness*, and the *stigma of the identification with a specific race, religion, or ethnicity*. In the context of mental health, Bos et al. (2013) mention four subtypes of mental illness stigma: *Public stigma, Self-stigma, Stigma by association* and *Structural stigma.* Public stigma refers to negative attitudes and emotions towards sufferers of a specific mental illness by other people. It is the awareness of stereotypes. In Self-stigma, these attitudes are internalized (Barney et al., 2010), it is the agreement with stereotypes. Corrigan et al. (2009) describe that as a result of the agreement with stereotypes, the "why try" effect occurs, linking it to help-seeking. Stigma by association entails social reactions, for example through friends and family members, and structural stigma refers to institutional, political and ideological system (Bos et al., 2013). Mental illness stigma can be concealed (Bos et al., 2013), which is a problem for help-seeking, because individuals deny their difficulties. Phelan et al. (2008) describe three functions of stigma. The first function is *exploitation and domination*. For others to have more privileges some groups must have less, so you must keep people down. Society also needs conformity and shaming certain occupations to keep people employed in them for lower wages. Phelan et al. call this *norm enforcement*. To *avoid disease,* the third function of stigma, is that non-stigmatized people are keeping stigmatized people away.

Stereotypes around Mental Illness.

To be more concrete and relevant to everyday life, our language shows examples of stigmatisation of mental illness. Associations like "psycho", "mad", "victim", "suffering", or "crazy" might appear (Rose et al., 2007). Rose et al. (2007) collected words and terms referring to mental illness and grouped these 250 words into five categories. When talking about mental illness, the first category of popular derogatory terms consists of words like "loony", "weird" or "freak". The second category describes the negative emotional state through words like "stress", "disturbed" or "confused". The third category describes physical illness or learning disabilities like "spastic" or "dumb" and the fourth category consists of psychiatric labels like "depression" or "schizophrenia". Rose et al. (2007) stress that participants seemed to be confused by the third and fourth categories, mixing these attributes. In the last category, participants attribute mental illness with violence and loneliness, containing words like "scary" or "isolation*".* This is highlighting the connections of mental health stigma and stereotypes and the study demonstrates how widespread the negative attribution of the concept of mental illness

is. Corrigan and Bink (2016) suggest that stereotypes of mental illness typically include three aspects: *Dangerousness*, meaning that persons with a mental illness are violent and unpredictable, the aspect of *responsibility* and last *incompetence*. Angermeyer and Matschinger (2004) describe these aspects as dangerousness, unpredictability, and responsibility. Hayward and Bright (1997) show that a common stereotype about having a mental illness is being dependent and unresponsible (1997). Another typical prejudice against persons with mental illness are "People with mental illness are emotionally overreacting" (Corrigan et al., 2011), which leads me to the following section of research about stigma and emotions.

Emotions Connected with Stigma.

Stigma relates to emotion (Angermeyer et al., 2010). Feelings like uneasiness, insecurity, mistrust, and fear occur. Irritations and anger are very common feelings towards people with mental health issues. The public has different reactions towards people with different mental disorders and according to Thornicroft and Kassam (2008), emotional reactions predict discrimination behaviour stronger than stigma itself. Some individuals express fear of being in contact with a person, and have a desire for social distance (Angermeyer et al., 2010). Shame is mostly expressed by people with the mental disorder itself, as can be seen through qualitative studies stating that persons with depression feel embarrassed and ashamed (Barney et al., 2010). There are also positive emotions expressed by stigmatized persons such as the desire to help, compassion, warmth, empathy, kindness, or pity. Even though pity can also be seen as an unwanted emotion (Angermayer et al., 2010).

Stigma as a Second Illness

The Consequences of Stereotypes.

Literature suggests a distinction between prejudices, stereotypes, and discrimination (Correll et al., 2010). Prejudices refer to beliefs, thoughts, feelings, and attitudes someone holds against a group. Stereotypes are an oversimplification about this group. Stereotypes can be based on almost any characteristics, not solely negative ones, but these often result in discrimination. While prejudices and stereotypes are referring to biased thinking, discrimination consists of action. Discrimination can occur on the individual and the structural level. Harmful effects on the personal life of an individual of stigma can include social isolation and rejections of friends or self-esteem (Link et al., 2001). On the structural level, people with depression might not find a job or also the health insure does not adequately cover your mental illness, which makes it harder for them to participate in society and have a good quality of life (Rüsch et al, 2005). It has also been well established that the healthcare system itself is one of the environments where

persons experience discrimination because of stigma (Ungar et al., 2016). The impact of this has been described as a second illness (Finzen, 2009).

In the last decade, the awareness of the burden of stigma has been raised. The effectiveness and the strong influence of stereotypes become evident, for example, in strategies to avoid the diagnosis of depression by calling it burnout instead of depression (Bahlmann et al., 2013). Their study shows that labelling depression as burnout is increasing around 10 % from 2001 to 2011. This happens because the diagnosis of burnout has fewer negative consequences. Schomerus et al. (2009) could show that a person's desire for social distance decreased the willingness to seek help. This could be shown in a sample of persons with depressive symptoms but also in the general population. The desire for social distance is also often used to scale attitudes towards persons with mental diseases (Jorm & Oh, 2009). Corrigan et al (2015) also highlight that Stigma is affecting not only the individual, but also close contacts and community. El-Badri and Mellsop (2007) conclude that stigma significantly reduces the quality of life.

Stigma of Help-Seeking.

Lots of literature suggest that persons with mental illness avoid professional help to avoid stigma, but Vogel et al. (2006) suggest additionally than there are negative beliefs towards seeking help itself in society. That is because individuals might hold the belief that seeking help itself is a sign of weakness or failure, which is also attributed to lower self-esteem and self-efficacy. The utilization of treatment is associated with negative labels as being awkward, not in control of ones emotions or being weak (Tucker et al., 2013) and seeking help is related to being inferior or inadequate. The idea to seek help seems, for some individuals, to be even worse than the current suffering (Vogel et al., 2006) and seeking professional help seems sometimes to be the last option at all (Vogel & Wester, 2003). Seeking help is a process of self-disclosure and Vogel and Wester (2006) hypothesize that the lower the openness for self-disclosure the worse are the attitudes towards seeking help. To sum up, stigma is a constant course of stress and discrimination in the social context (Hatzenbuehler et al., 2013), keeping individuals with mental illness symptoms from seeking help. The question arises if there are other factors which favour help-seeking instead of blocking help-seeking.

Self-Determined Motivation

Motivation theories have a long history. What does motivate us? What leads to a healthy and good life? How do humans satisfy their needs? What are specific human needs? Why do humans behave in a way that is destructive for themselves? Why are some humans developing

mental illness like depression or anxiety? Why do some decide to search for help and others don't? Questions like that are the focal point of motivational theories in the context of the health system. Very popular is the theory of hierarchy of needs by Maslow (1943). Maslow was one of the founding persons of humanistic psychology. In humanistic psychology, the holistic approach is where humans strive for self-realization. These needs, starting with basic survival needs to higher growth needs are motivating humans. The hierarchy of needs is simple and intuitive but has been widely criticised (Kaur, 2013). There is not enough empirical evidence, and research has shown that humans strive for higher needs, even if basic needs are not satisfied. Moreover, the theory is rather focusing on satisfaction than on motivation. Another, very well-known differentiation in motivation is the differentiation between intrinsic and extrinsic motivation (Gagné & Deci, 2005). While intrinsic motivation refers to activities inherently interesting, extrinsic motivated actions contain motivation through the outcome, for example, money or status. Intrinsic and extrinsic motivation seem to be overlapping and are not as distinct as initially assumed.

Self-Determination as a Theory

Therefore, Gagné and Deci developed the Self-Determination Theory (SDT) in 2005, a macro-theory of human motivation, personality development and well-being, which is integrating needs and motivation. Gagné and Deci (2005) propose a model where humans intrinsically strive for satisfaction. Here, self-determination is indispensable for the fulfilment of human needs because self-actualization is happening, when the three basic needs are met. Self-determination can be defined as the right of the individual to have full power over their own life (Cook & Jonikas, 2002). In everyday language, it refers to each person's ability to make their own choices and manage life. This plays an important role in well-being and mental health. It allows the person to have control. It has also an impact on how people feel motivated to act and to change their habits.

Psychological Basic Needs.

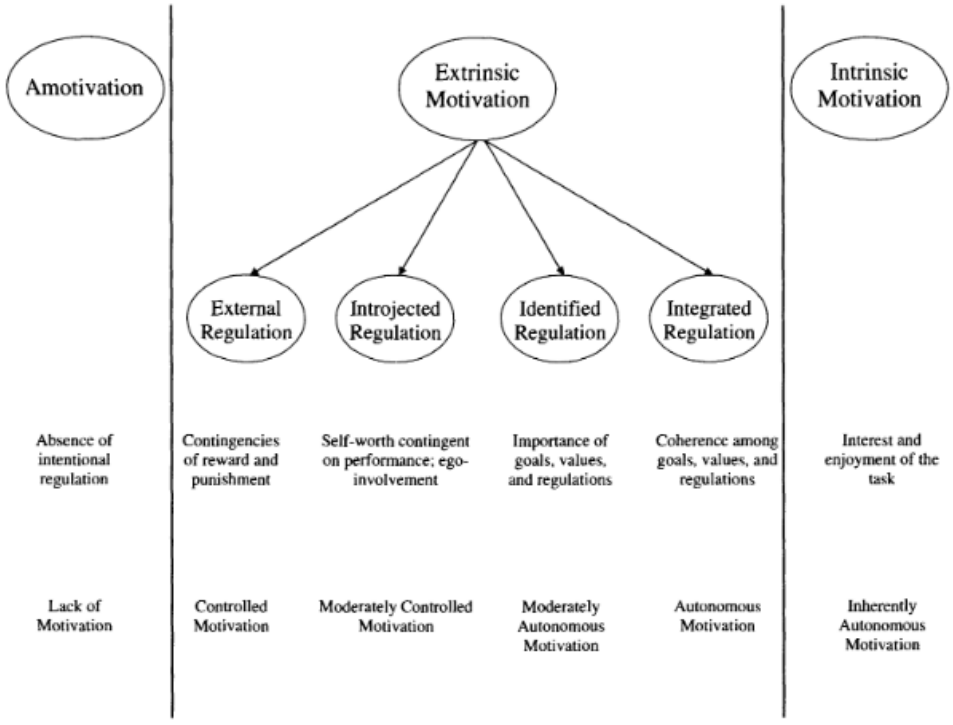
The SDT overwrites Maslow's hierarchy of needs and states three basic human needs: *Autonomy, Competence* and *Relatedness* (Gagné & Deci, 2005). Autonomy is the need for a person that they have a choice and that what they are doing is of their own will. It is the capacity of the individual for self-determination and self-guidance. It manifests the idea that humans need control over the course of their own life. Relatedness means, to have a close and affectionate relationships with others and Competence means that you need to feel effective in dealing with the environment The three basic needs are connected with human development, wellness and motivation (Deci & Ryan, 2008).

A Motivation Model as a Continuum.

The core element of Gagné and Deci's (2005) theory is that motivation differs in the way it is regulated. The different regulations fall along a continuum and the authors separate this continuum into *amotivation*, *extrinsic motivation* and *intrinsic motivation* (Figure 2). The degree of the external controlled process decreases as the degree of autonomy, associated with the activity, increases. On the one side of the continuum is amotivation. Amotivation is a lack of motivation and must be regulated externally. Extrinsic motivation can be differentiated through the degree of internalization: As more people are taking in values and attitudes as their own, the more is the process regulated autonomously, which can be seen in Figure 2. Intrinsic motivation itself is completely autonomously motivated. Here, interest and enjoyment of the task itself regulates the process. SDT suggests that both autonomous and controlled regulation are important for different aspects of work motivation (Gagné & Deci, 2005). The question arises if this is also the case for mental health issues.

Figure 2

The Self-Determination Continuum



Note. From: Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational behavior*, *26*(4), 331-362.

Autonomous Motivation and Health Behaviour.

Evidence for the efficacy of the SDT is visible in different domains as sport education, work and also health (Ng et al., 2012). For example, could Taylor et al. (2020) find that autonomous motivation moderates the relationship of self-criticism and depressive symptoms. Deci and Ryan (2000) suggest that autonomous motivation has a positive impact on health and well-being. Williams et al. (2004) assessed autonomous motivation and perceived competence at baseline and after six months and additional autonomous support after three months. Data showed that autonomy support influences the perceptions of autonomy and competence. A study showed, that autonomous motivation of helpers was predicting more positive attitudes towards the helpers in contrast to controlled motivation (Weinstein & Ryan, 2010). Another study could show that autonomous motivation increased the decision of hearing-help seekers for use of hearing aids (Ridgway et al., 2015). Another study could show that autonomous motivation was not only a positive predictor for better health outcomes in the case of eating disorder symptoms but also on attitudes (Thaler et al., 2016). In the context of learning, autonomous motivation seems to be connected to homework behaviour. Students who are autonomous motivated will hold more positive intensions towards homework because they can see it as an opportunity for positive outcomes, linking it to competence and enjoyment (Hagger et al., 2015).

Autonomous Motivation on Long Term.

In the process of help-seeking, it is relevant that the person is motivated to maintain the healthy behaviour not only for a short time. Mental health issues often last a long time. Additionally, deteriorations in the condition might occur. Autonomous motivation has been described as a long term-factor, a mechanism that supports changes in long term health behaviour (Gillison et al., 2019). Because seeking help must be sustained over a long period of time, autonomous motivation could help to balance stigma. Adeline et al. (2019) suggest that individuals with autonomous motivation are more continuously and longer motivated than if they are controlled motivated. SDT also postulates that individuals who are engaging in a behaviour for controlled reasons are only likely to be motivated as long es the external factor is stabile (Hagger et al., 2015), meaning that if the external factor diminishes, the individual will have difficulties to maintain the behaviour. In contrast individuals who are engaging in behaviour for autonomous reasons will persist. This is a sign for autonomous motivation to be a superior to controlled motivation in the context of help-seeking. Autonomy means that individuals have a choice and they act with volition (Stone et al., 2009). which highlights again the positive effect of autonomous motivation on mental health. A study from Koestner et al. (2008) also found out

specifically that autonomous motivation and not controlled motivation is related to goal progress. Hagger et al. (2009), who integrated the TPB with the SDT could find that autonomous motivation correlates with attitudes, still there is lack of research concerning motivation and mental health.

Depression and Motivation

Symptoms of depression include lack of drive or social withdrawal. People with depression struggle with the loss of motivation. People with depression often describe their situation as hopeless and are often overwhelmed by even the smallest tasks. When talking about depression and help-seeking a concept, describing the fact that people with depressive symptoms have difficulties with motivation for change, is the learned helplessness hypothesis (Maier & Seligman, 1976). The authors have found that dogs that are given electric shocks for a long period of time without the possibility to escape, did not try to escape from the same shocks if it was possible. The authors argue that the original shocks were not controllable for the dogs and therefore they give up trying to influence the situation, even if there is a change, highlighting the aspect of controllability of the situation as an important factor. Maier and Seligman (1976) argue that if events are not controllable the organism learns in a cognitive, emotional and motivational way that there is no way out, which is saved in the memory. Learned helplessness has been widely used for understanding depression and stress the idea that situations that are perceived as being controlled contribute to problems in mental health. In contrast, autonomy, competence, and relatedness have been proven to support productivity, creativity, and happiness. For example, in the work context, especially autonomy leads to better performance, greater satisfaction and lower level of anxiety and depression (Stone et al., 2009). In the health care setting SDT has been shown to have benefits on physical and mental status (Williams et al., 1998). Research found positive effects on self-value, self-esteem, well-being, need satisfaction, integration and performance (Milyavskaya & Koestner, 2011; Vansteenkiste et al., 2007; Deci & Ryan, 2008). Even more, research states that autonomous orientation is correlating with self-esteem and self-actualization while controlled orientation relates to public self-consciousness and defensive functioning and depression (Gagné & Deci, 2005).

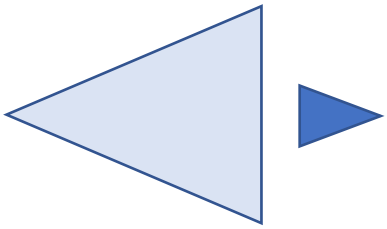
Summary and Visualisation

To sum up mental illness stigma with all related subtypes a main barrier for help-seeking. The following graph (Figure 3) is symbolically explaining the severity of the stigma that keeps the individual from seeking help. Thus, it is not only the symptoms of the mental disease that keep a person from seeking help, but also the of mental illness stigma, which is

often not completely visible. In the symbol (Figure 3), this is symbolically illustrated by the large triangle that pulls backwards (to the left). All the efforts of the persons to seek help and pull forward (to the right), symbolized by the small dark blue triangle, are (in most cases) not enough to offset the effect of mental illness stigma.

Figure 3

Exemplary Model of Sigma as a Barrier in Help-Seeking Process

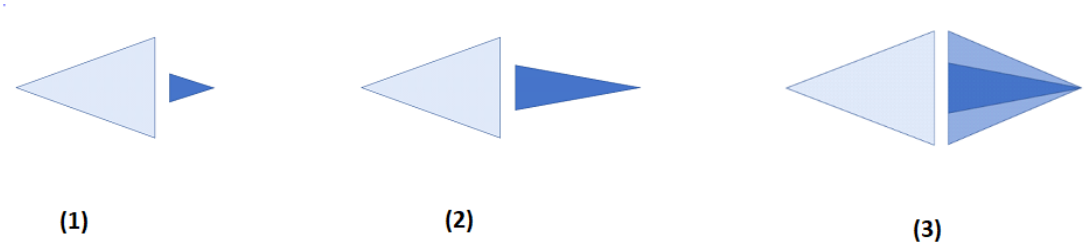


Note: Symbolically the figure describes, how the individual struggle with help-seeking though stigma.

Now, Figure 4 symbolically describes how STD could contribute to balance stigma in help-seeking behaviour. As Stigma is pushing backwards and the individuals does not have enough resource to seek for help (Figure 4, 1) the long term-effect of autonomous motivation lead to more positive attitudes towards seeking help (Figure 4, 2). Autonomous-determined motivation could help the individual to collect sources for positive attitudes. Finally, the fulfilment of all three aspects of the SDT (competence, relatedness, and autonomy) could balance Stigma (Figure 4, 3). In a last step, if mental illness stigma is even degraded, the weighting of mental illness stigma and help-seeking could even be reversed.

Figure 4

Contribution of the Self-Determination Theory in the Context of Mental Health.



Note. The Figure describes symbolically the process of how autonomy, competence, and relatedness as part of the SDT (right) could balance stigma (left) as a barrier in help-seeking efforts of a person with mental illness, with autonomous motivation as a leading source.

Hypotheses

Motivated by relevant stigma and help-seeking research but also the approach of SDT, the aim of the master thesis is to determine which of these features have the greatest influence on help-seeking attitudes. In the case of stigma, the question is whether different aspects of stigmatizing attitudes, stereotypes or emotional reactions are predominantly influencing attitudes towards seeking help or interact, and whether self-identification as mentally ill is related to attitudes. In the case of self-determination, the question is whether controlled or autonomous motivation has a different effect on attitudes towards help-seeking. In concrete the hypotheses are as followed:

Stigma.

As stigma is a barrier to help-seeking, I take (H1) stigma into the model as leading to negative attitudes towards seeking help which I tested through (H1a) the awareness of stereotypes (public-stigma) and agreement with stereotypes (self-stigma) as leading to negative attitudes towards seeking help; (H1b) the support for discrimination as leading to negative attitudes towards seeking help; (H1c) social distance as leading to negative attitudes towards seeking help. Secondly, as (H2) help-seeking is stigmatized itself, I hypothesize that the stigma of help-seeking is leading to negative attitudes towards seeking help. Additionally, emotions (H3) which are connected to stigma can be a massive barrier for help-seeking attitudes therefore I

assume that (H3a) the sensation of shame; (H3b) the agreement to the stereotype of blame; (H3c) the emotional reaction of anger; and (H3d) the emotional reaction of fear hinder positive attitudes towards seeking help and lead to more negative attitudes towards seeking help.

Help-Seeking.

SDT describes motivation as an energy which is directed to reaching a goal (Adeline et al., 2019). Motivational differences (H4) could explain the differences in the individuals' beliefs and attitudes towards seeking help. SDT suggests that engaging with a behaviour which is more consistent with one's own interest will predict better outcomes. Which leads me to the following hypotheses: (H4a) Individuals with a more pronounced autonomous motivation have more positive attitudes towards seeking help than controlled motivated persons. And in line with published research: (H4b) self-identification as mentally ill leads to more positive attitudes of help-seeking as a first step in the help-seeking process.

Socio-Demographics.

As (H5) socio-demographic play an important role in health behaviour, I suggest that sociodemographic factors are contributing to help-seeking attitudes: (H5a) Men have more negative attitudes towards seeking help compared to woman and (H5b) and younger people have negative attitudes towards seeking help than the middle-aged people. (H5c) Less education, income, and a lower graduation influence help-seeking attitude negatively.

Well-Being.

In addition, as much research evidence shows that the severity of depression has an impact on self-identification as mentally ill - the first step of help-seeking, aspects of (H6) wellbeing are also included. I suggest that the (H6a) symptoms of depression (H6a) and the (H6b) higher levels of conceptions of complaints do negatively impact attitudes toward seeking help.

Methods

Overview

The approach of this thesis is twofold. I tested the influence of stigma measurements on help-seeking attitudes as well as the type of motivation on help-seeking attitudes. Attitudes towards seeking help are operationalized as decisive for further help-seeking. I proposed autonomous motivation as part of the SDT as an important feature, which could help develop more positive attitudes towards seeking help. The work context used SDT a lot, potentially because the theory has been developed in this field (Gagné & Deci, 2005). This implementation

of the theory can also be helpful in the mental health context, as it provides a different insertion point than stigma. The existing work on stigma reduction can be enhanced with motivational aspects. Stone et al. (2009) indicate that autonomous motivation can also be called sustainable motivation, because it holds the promise of being long-term. If motivation next to stigma influences attitudes towards help-seeking, this may allow for new approaches.

Study Description

The used data originate from a project funded by the DFG since 01.10.2018 (German Research Foundation: SCHO 1337/4-2 and SCHM 2683/4-2)**.** It is a follow-up study about the importance of stigmatizing attitudes in the use of professional help for depression. An important finding from the previous study was that self-identification as mentally ill is a first step towards seeking help. This result is considered by including self-identification as a feature. Another result focused on the difference between the awareness of stereotypes and the agreement with stereotypes which is also considered. The project aims to validate the relevance of stigma and intermediate variables, namely mental health literacy, self-efficacy, causal beliefs, and subjective nosologically concept. Additional components are self-identification as mentally ill, symptom severity, therapy experiences and demographics. The methodical implementation took place through an online intervention and the intermediate variables between stigma and help-seeking were systematically manipulated. As an intervention, participants received text-based or video-based vignettes designed to influence the intermediary process variables. To guarantee quality management, qualitative interviews were implemented. Additionally, a psychometric pre-study with $n = 200$ guaranteed the reliability of measurement. As the project is realized in Leipzig and Greifswald, the study was approved by the ethic commission in Leipzig on 17.12.2019 and in Greifswald on 30.04.2018. Collaborators in the study are in Greifswald as well as in Leipzig. Since the survey is conducted jointly, the joint investigation is highlighted with "we" in the following.

Subjects

We recruited subjects via *Respondi,* a company for online panels. Interested individuals register and get financial compensation for participating. *Respondi* realized a soft launch with 100 participants, before starting the full assessment. After the soft launch, the sample was open to all panelists, who complied with the eligibility criteria. Eligibility criteria for participating were that participants were over 18, understand German and have a *Patient Health Questionnaire* (PHQ-9) score of eight or higher, out of 27. This indicates at least mild depressive complaints (Kroenke et al., 2001). The last eligibility criterion was that the

participants were not in treatment at the current moment. To access the gender gap in online panels, we set a quote of 35 % men.

Design and Procedure

We designed the study as a fractional factorial design with one control group and 23 experimental groups. We randomly assigned study participants into one of the 24 groups. After the intervention-block, we administered relevant outcome measures a second time. In a 3- and 6-month follow-up next to help-seeking attitudes and intentions, help-seeking behaviour and stigmatising attitudes were measured. We used gamified elements and avatar-choice techniques to heighten study immersion and adherence. The online intervention was realized with *Unipark,* an online-survey pool. Power analysis was done before with *G*Power* with a significance level of 0.05 and a power of 1-*ß* = 0.95. To achieve the sufficient sample size per group, this resulted in 24 possible groups. *N* = 1800 was intended. To obtain the motivational and stigma measurements on attitudes towards seeking help, I needed data from the first measurement point. Since a questionnaire of one hour could be overwhelming and tiring for individuals, the first survey was split into two approximately commensurate parts. I analysed data from the first split.

The online intervention started with an explanation of the intention of the survey and with the agreement for participation. Demographic questions were displayed at the end of the first part of the first survey. To filter individuals with random responses an attention check was embedded. I analysed only the first measurement point (MPZP1 Part A), which was conducted from 18.01.2021 until the 15.02.2021. Measurements of the intervention are not integrated in this thesis.

Psychological Questionnaires

I classified psychological measurements into four categories. *Stigma, Help-Seeking, General-Health,* and *Socio-Demographic*. Table 1 shows an overview of the four categories and number of Items for each questionnaire. Full questionnaires can be found in the Appendix (Table 6 – Table 17).

Table 1

Used Questionnaires and Number of Items (Number)

Questionnaires	*Number*
Stigma	
Awareness of Stereotypes (SSMIS-public)	10
Agreement with Stereotypes (SSMI-self)	10
Desire for Social Distance (SDS)	7
Support for Discrimination	3
Sense of Blame for Mental illness	4
Sense of Shame	2
Self-Stigma for Seeking Professional Help (SSOSH)	3
Emotional Reaction Towards a Person with Mental Illness (ERMIS)	10
Help-Seeking	
Self-Identification as Mentally Ill (SELF-I)	5
Motivation Behind Help-Seeking (ACMQ)	6
General-Health	
Patient Health Questionnaire (PHQ-9)	9
Subjective Sense of Illness (IPQ-R)	8
Socio-Demographic	
Gender	1
Age	1
Family Status & Partner	3
Education	2
Employment	2
Income	1
Outcome	
Attitudes Towards Seeking Help (ATSPPH)	10

Stigma-Variables

Literature has many measures of stigma to offer. To be able to depict the different aspects of stigma well, the following measurements were selected. Corrigan et al. (2012) suggest assessing *perceived awareness of stereotypes* and the *agreement with stereotypes* with

the same questionnaire. At first, we asked the participants to rate statements concerning people with mental illness as for example “I think the public believes that,” “…most people with mental illness can’t take care of themselves” on a 5-point Likert scale from *I strongly disagree* to *I strongly agree*. These questions were then repeated, only with the prefix: “I think that,” “…most people with mental illness can’t take care of themselves” to differentiate between awareness and agreement with stereotypes

We used the *Social Distance Scale* (SDS) from Angermeyer and Matschinger (1997) to assess to which extend participants were likely to keep distance from a person having a mental illness. Therefore, different contexts were used: The immediate environment, e.g. "To what extent would you accept someone with a mental illness as a neighbour? Or “To what extent would you accept someone with a mental illness as a friend?” but also the work environment as e.g “To what extent would you accept someone with a mental illness as a work colleague?” In total, we used seven questions that were rated on a 5-point Likert scale from *very unlikely* to *very likely*.

We assessed stereotypes and emotional reactions towards mental illness. We assessed the *agreement with the stereotype of blame* with the following four items from Schomerus et al. (2016): “Persons with mental illness are to blame for their problems”, “mental illness are a sign of a weak character”, people with mental illness just have to pull themselves together to get better”, and “one of the main causes of mental illness is a lack of self-discipline”. We used again a 5-point Likert scale from *don’t agree at all* to *agree completely.* We assessed the *sensation of shame* with the following items: “Would you feel shame, if you had mental problems?” and “Would you feel shame, if others knew that were seeking out professional help for your mental problems?” We used again a 5-point Likert scale from *not at all* to *very strong*. We assessed emotional reactions towards a person with a mental illness with the ERMIS (Angermeyer et al., 2010). Subscales indicate prosocial reaction, fear, and anger. We used a 5-point Likert scale from *don’t agree et all* to *agree completely.*

We assessed the *Self-Stigma of Help-Seeking* with the short from of the SSOSH from Brenner et al. (2020). We asked participants to rate the following three questions: “I would feel inadequate if I sought psychological support”; “I would feel inferior if I sought help from a psychologist”; “If I went to see a psychologist, I would feel less satisfied with myself” on a 5-point Likert scale from *don’t agree at all* to *agree completely.*

And last, we assessed the *explicit support for discrimination* with three items from Schomerus et al. (2016). Participants are asked to rate how much they agree with “If people with mental illness do not consent to medical treatment, they should be treated against their

will. People with mental illness should not be allowed to hold public office. People with mental illness should not be allowed to hold a driving licence on a 5-point Likert scale from *don't agree at all* to *agree completely.*

Help-seeking

We used the *Self-Identification as Mentally Ill Scale* (SELF-I) to assess if participants conceptualized their symptoms as a possible sign of a mental illness. Participants were asked to what extend they agreed with five statements, as for example "I am mentally stable, I do not have a mental illness", on a 5-point Likert scale from *don't agree* to *agree completely.*

We used an adapted version of the *Autonomous and Controlled Motivation Questionnaire* (ACMQ) of Keleher (2020). Keleher (2020) introduced a 6-item measurement to evaluate autonomous and controlled motivation on the context of emotionally demanding behaviour change. Participants rated each statement on a 5-point Likert sale from *strongly disagree* to *strongly agree.* We adapted and translated the questionnaire to the mental health context, resulting in the following three questions for the controlled motivation subscale: "I feel that my family/friends expect me to seek help"; "it makes it easier for me to engage in other important areas of my life"; "I want others to see that I am seeking help" and the following three questions for the autonomous motivation subscale*:* "I would be disappointed in myself if I did not seek help"; "I have the feeling that it would be good for me personally"; "seeking help is an important decision for me personally to deal with myself and my problems". Because we adapted the questionnaire, we calculated reliability for the autonomous subscale (α = .84) and the controlled subscale (α = .74). Streiner (2003) suggest that a value above .60 is acceptable for further usage.

General Health Measurements

We used the Participants Health Questionnaire (PHQ-9) from Kroenke et al., (2010), as an inclusion criterion but additionally for the analysis. With this instrument, the severity of depressive symptoms is measured. Participants are asked to rate how often they have been bothered by problems over the last 2 weeks as for example "Little interest or pleasure in doing things" with the response options "not at all", "several days", "more than half the days", or "nearly every day". Since a value of over in the PHQ-9 was also operationalised as an inclusion criterion, it can be assumed that the participants are a sample that has mental health difficulties but cannot yet be assigned to a mental diagnosis.

We assessed the *subjective sense of illness* with the revised Illness Perception Questionnaire (IPQ-R). Questions ranged about cognitive illness representation like "How much do your symptoms affect your life?" To emotional responses as "To what extent are you

emotionally affected by your symptoms?" and illness reprehensibly as "how well do you feel you understand your symptoms?" Participants could rate on a 7-point Likert scale.

Socio-Demographics

We assessed age, gender family status, educational background, and income (Appendix, Table 17). Family status was divided into 1 = *single*, 2 = *unmarried relationship*, 3 = *married/partnership*, 4 = *married but living alone*, 5 = *divorced* and 6 = *widowed.* Two follow up questions, namely "are you in a relationship? " and "how many children do you have?" enlarged the assessment of the family status. Educational background was divided into school education: "which is your highest degree" and occupational graduation. Income was prompted in six categories with an interval of 500 €.

Outcome

We collected *the attitudes towards seeking help* via the ATSPPH from Fischer and Farina (1995). We asked participants to rate how much they agree with certain statements regarding seeking help from psychiatric or mental health professionals, e.g., "Emotional difficulties like many things, tend to work out by themselves" on a 4-point Likert scale from *strongly disagree* to *strongly agree.*

Analysis with Machine Learning

In recent years, machine learning has been increasingly used in all scientific fields, including psychology (Orrù et al., 2009). Variables are either quantitative or qualitative (James, et al. 2013), both types of data can be used in models in machine learning. As psychological data grows in complexity, machine learning models allows to generalize analysis results and complement inferential statistics (Orrù et al., 2019). One advantage of machine learning is that it uses techniques, which are easy to control, especially for replicability. Machine learning is a type of data analysis method which automatizes the analytic model building, with the idea that an algorithm can learn from data to identify different patterns of information. There are two different types of machine learning processes (James et al., 2013): In *supervised learning*, an algorithm learns associations between inputs (or features) and outputs (or targets), while in *unsupervised learning*, an algorithm finds patterns of information with the features only (James et al., 2013). Here, I chose to apply a supervised multivariate regression procedure. The Script was produced by Haugg et al. (2021), with David Steyrl as being responsible for conceptualization, methodology and software. Multiple regression follows the same principles as a simple linear regression, but instead of predicting the outcome only through one

independent variable, further dependent variables are included. The relationship between the target (Y) and the features (X) is linear and described as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_p X_p + \varepsilon \qquad \text{(James et al., 2013)}$$

In a second step, I shuffled data labels to evaluate the performance of the linear model, which was captured by their explained variance (R^2), and computed the contribution of each feature, i.e. the β weights, to the model. The sample consisted of N =1751 adults. All data were questionnaire based through the online panel and defined as machine learning features. Then the mean value was calculated and served as machine learning input. Machine learning approaches can handle large datasets and outperform conventional statistics, especially when dealing with multiple variables (Eder et al., 2021).

Elastic Net Regularization (EN) and Split Shuffle Cross-Validation (CV)

In supervised learning, when the suggested model is not able to capture the underlying pattern of the data, because it is too simple, it leads to high bias but low variance. This is called *underfitting*. *Overfitting* instead, happens, when the suggested model captured to much of the variance, leading to low bias, but high variance. Finding a good balance between variance and bias is called the *variance-bias tradeoff.* For all the predicted variables, I decided to fit a robust cross-validated machine learning model, namely Elastic Net Regularization (EN) and conducted the analysis with R Studio (2021) and Python 3.7 (2009) with the library Scikit-learn (Pedregosa et al., 2011). The model imposes a linear structure. Two most common techniques of shrinking the regression coefficients are ridge and lasso regression (James et al., 2013). Both have their advantages and disadvantages, and the EN regression, which combines both, is used here. To divide the dataset into a training set, on which the ML model is trained, and a test set, on which the model is tested, I used a shuffle-split cross-validation procedure. Shuffle-split CV, unlike most CV procedures such as K-fold CV, divides the data with random resampling. The elastic net linear regression procedure is then applied on the training data by minimising the sum of squared residuals. Then the data is shuffled, and the method is repeated several times.

Correlation Analysis

As a first step, we calculated correlations between all features, including the output to get an insight into data. Pearson's correlation was used. The closer to 1, the more positively correlated the features. A correlation closer to -1 means that an increase in one feature is associated with a decrease of the other feature. Dancey and Reidy (2007) suggest an interpretation of Pearson's correlation coefficient from 1 as perfect, until + 07 as strong, until

+ 0.4 as moderate, until +1 as weak and 0 as zero and a strong negative correlation as reversed. Moderate correlations are listed in the results section.

Feature Importance

As the hypotheses are concentrating on which features are best predicting attitudes towards seeking help, the analysis of the individual importance of features was the main part of data analysis. The higher the absolute value of the weight, the more important we see the feature. I used two different methods to determine the feature importance: model-based feature importance and permutation-based feature importance (PFI). Model-based feature importance describes what the model has learned from the training data. Permutation-based feature importance (PFI) describes what is important for the prediction of new unseen data and is not yet available in the training-set. In PFI a single feature is randomly shuffled. This means that the connection between these two variables is interrupted. If the feature is important this can be seen in the drop of R^2. Bonferroni correction was included in both models.

Results

The following section presents the results of the machine learning analysis. I start with descriptive statistics, move on to the correlations based on the set of features and further present the main regression analyses. Here, the main point is the feature importance divided into model-based importance and permutation-based importance analysis.

Descriptive Statistics

Participants

The average age of the sample was 42.86 years, (*SD* = 15.41) with a *Mdn* of 41. Age ranged from 18 years to 88 years. 65.3 % female persons (*n* = 1143) and 34,21 % male (*n* = 599) and 0.51 % gender unspecific' persons (*n* = 9) took part. Collected data from the occupational and educational background showed that most participants had an in-company apprenticeship (*n* = 586) or school-based apprenticeship (*n* = 272). Most participants stated to have a higher school certificate (*n* = 715) or a secondary school certificate (*n* = 588), which consumed 75 % of the sample. Most participants stated to live with an income of 500 € to 1000 € (*n* = 346), 1001 € to 1500 € *(n* = 323) or 1501 € to 2000 € (*n* = 310) which consumed more than 50 % of the sample. Most participants were either in an unmarried relationship (*n* = 543) or married (*n* = 586), which is mostly congruent with the number of participants living in a relationship (*n* = 915).

Well-Being

The average man score of the PHQ-9 assessment of the sample was 12,24 (*SD* = 4.15) and had a *Mdn* of 11. The scale ranged from 8 to 27. The average mean measurement of the IPQ-R assessment of the sample was 36,20 (*SD* = 6.17) and had a *Mdn* of 36. The scale ranged from 11 to 53 points.

Stigma Variables

Table 2 shows all relevant information for stigma measurements.

Table 2

Means (M), standard deviations (SD) and Median (Mdn) of the stigma measurements

	M	*SD*	*Mdn*
Agreement with Stereotypes	2.03	0.72	2
Awareness of Stereotypes	2.93	0.90	3
SDS	2.37	0.80	2.29
Support for Discrimination	2.00	0.87	2
Sense of Blame	1.55	0.73	1.25
Sense of Shame	2.22	1.08	2
SSOSH	2.12	1.04	2
Fear	2.14	0.92	2
Anger	1.71	0.80	1.33
Prosocial Reactions	3.50	0.79	3.67

Note: SDS = Social distance scale, SSOSH = self-stigma of help-seeking, Fear, Anger and Prosocial reactions were assessed with the ERMIS scale.

Help-Seeking Variables

The average mean of the controlled motivation assessment of the sample was 2.34 (*SD* = 0.95) with a *Mdn* of 2.34. The scale ranged from 0 to 5. The average mean of the autonomous motivation assessment was 3.45 (*SD* = 1 00) with a *Mdn* of 3.67. The scale ranged from 0 to 5.

The average mean measurement of the SELF-I assessment of the sample was 3.25

(*SD* = 0.88) with a *Mdn* of 3.2. The scale ranged from 1 to 5. To assess whether the perception of the complaint is accompanied by a self-identification as mentally ill

Attitudes Towards Seeking Help

The average mean measurement of the ATSPPH assessment of the sample was 2.80 (*SD* = 0.55) with a *Mdn* of 2.8. Scale ranged from 1 to 4.

Correlation Measure Analysis

The heatmap analysis in the Appendix shows the full correlation between all the features and the output attitudes towards seeking help (Figure 8). No correlation exceeded *r* = .6 or *r* = -.6. Correlations with attitudes towards seeking help can give a first sign for regression and gives further information into data structure. The analysis shows that the autonomous scale of the ACMQ correlated with attitudes towards seeking help (*r* = .6) and the self-stigma of help-seeking scale correlated negatively with attitudes towards seeking help (*r* = -.5). Additionally, the two general health measures (PHQ-9, IPQ-R) correlate (*r* = .5); PHQ-9 and SELF-I (*r* = .4); IPQ-R and SELF-I (*r* = .5); as well as the two subscales of the ACMQ (autonomous and controlled) (*r* = .5).

Concerning the demographics, family status and partner correlated negatively (*r* = -.5), while family status and children correlated positively (*r* = .4), and education and graduation correlated positively (*r* = .4). Age correlated with number of children (*r* = .4). Table 3 highlights correlation between .4 und .6 and -.4 and -.6 between stigma-measurements only. Correlation analysis revealed most correlations within the stigma measurements, namely all stigmatizing attitudes. As seen in table 3 the agreement with stereotypes (1) revealed most correlations with other stigma measurements.

Table 3:

Pearson's Correlations (r) for Stigma Measurements

Variable	1	2	3	4	5	6	7	8
1 Agreement with Stereotypes								
2. Support for Discrimination	.5							
3. Sense of Blame	.5	.4						
4. Anger[a]	.4		.4					

	1	2	3	4	5	6	7	8
5. Fear[a]	.4	.4		.6				
6. SDS[b]	.4	.5		.4	.5			
7. SSOSH[c]			.4					
8. Sense of shame							.6	

Note.

[a] Anger and Fear is assessed with the ERMIS Scale.

[b] SDS = Social Distance Scale

[c] SSOSH = Self-Stigmatization of Help-Seeking

Machine Learning Results

Regression Analysis

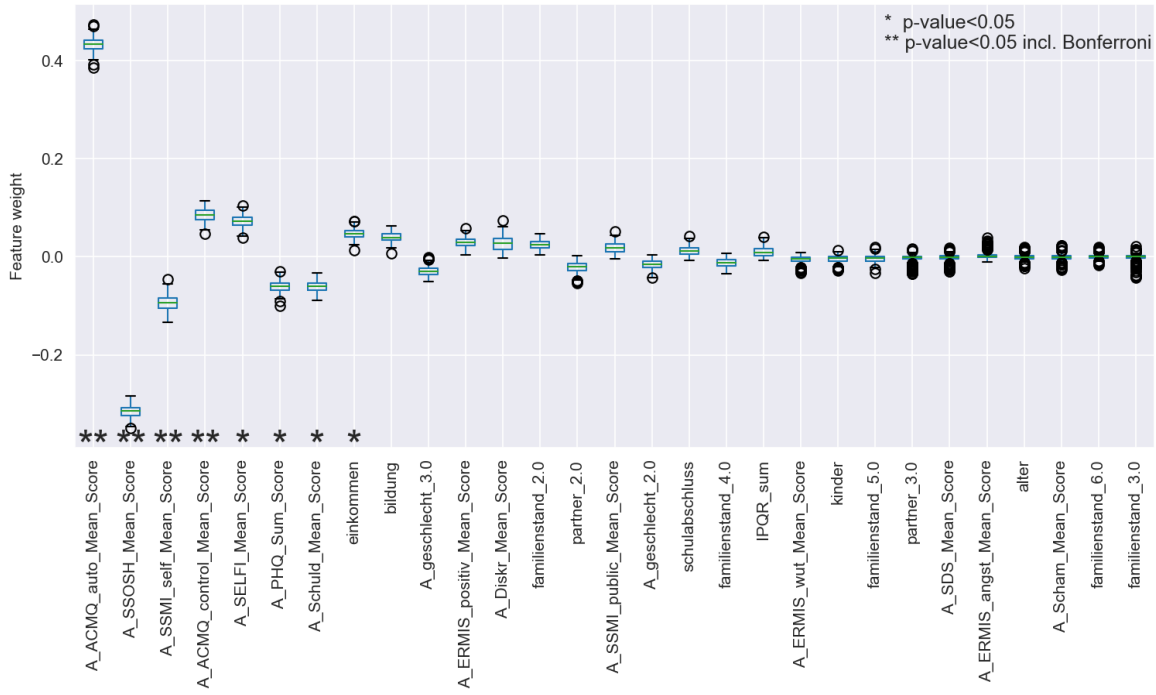
On average, around 55% of the variance in attitudes towards seeking help was successfully predicted by the ML model (EN: $R^2 = 0.55$, $R^2_{\text{median}} = 0.55$, $p < 0.001$. Figure 9 in the Appendix displays the regression score as a graph.

Feature Importance

Model based feature importance on attitudes towards seeking help can be seen in Figure 5. The four most important features are displayed in Table 4. Important predictors for attitudes towards seeking help are autonomous motivation ($p < 0.05$), self-stigma of help-seeking ($p < 0.05$), awareness of stereotypes (SSMI_self) ($p < 0.05$) and controlled motivation ($p < 0.05$).

Figure 5

Elastic-net Regression Feature Importance for the Predicted Variable Attitudes Towards Seeking Help



Note. The abbreviation A_ denotes that the survey data were used from the first part of the larger survey prior to the intervention; ACMQ_ auto and ACMQ_control are the subscales of the ACMQ measurements; and further specifications of the socio-demographics can be seen in the Appendix in table 17.

Table 4:

Means (M) of Model-Based Feature Importance

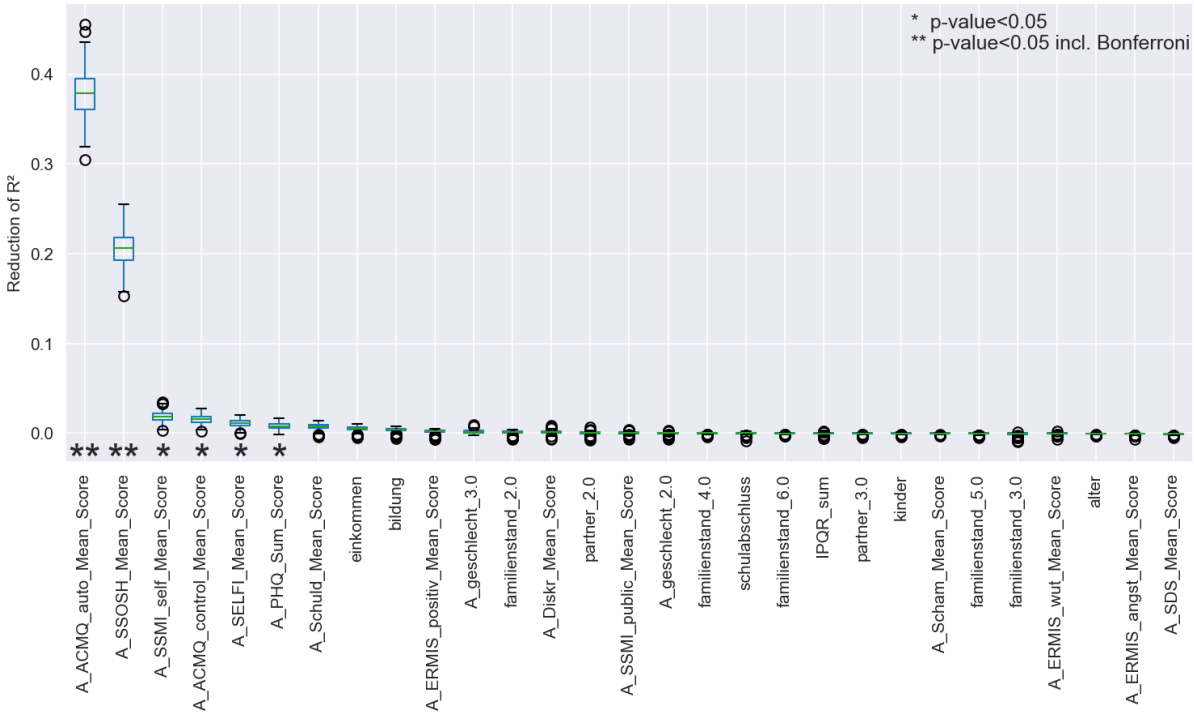
	M (Model-based importance)
Autonomous motivation	.43
Self-stigma of help-seeking	- .38
Agreement with stereotypes	- .09
Controlled Motivation	.08

Based on permutation-based feature importance only autonomous motivation ($p < 0.05$) and self-stigmatization of help-seeking ($p < 0.05$) revealed a significance level smaller than 0.05 inclusive of Bonferroni correction (Figure 6). Order stayed the same, with autonomous

motivation contributing for most variance. Table 5 displays reduction of means of the most important features. Graphs of the EN of autonomous motivation on attitudes towards seeking help and self-stigmatization of help seeking on attitudes towards seeking help are displayed in the Appendix (Figure 10; Figure 11).

Figure 6

Elastic Net Regression Feature Importance for the Predicted Variable Attitudes Towards Seeking Help Based on Permutation



Note. The abbreviation A_ denotes that the survey data were used from the first part of the larger survey prior to the intervention; ACMQ_ auto and ACMQ_control are the subscales of the ACMQ measurements; and further specifications of the socio-demographics can be seen in the Appendix in table 17.

Table 5

Reduction of Mean (M) of Permutation-Based Feature Importance.

	Reduction of M (PMI)
Autonomous Motivation	-.32
Self-stigma of help-seeking	.21

Hypotheses

Overall, the results of the model-based interpretation feature importance and the permutation-based feature importance are similar, with self-stigmatisation of help-seeking and autonomous motivation as important predictors for the regression model. The model-based feature importance also included more predictors as important than the permutation-based model.

I hypothesized stigma as a barrier to help-seeking (H1), but awareness of stereotypes did not lead to negative attitudes towards seeking help and the agreement with stereotypes was only a significant predictor in the model-based feature importance. Therefore, H1a could only be partly approved. The support for discrimination did not lead to negative attitudes towards seeking help. Therefore, H1b could not be approved. The desire for social distance did not lead to negative attitudes towards seeking help, H1c could not be approved. I hypothesized that the self-stigma of help seeking would lead to negative attitudes towards seeking help, which could be approved in the model-based and the permutation-based feature importance analysis. Therefore, H2 is approved. I suggested that the agreement to stereotypes and emotional reactions to mental illness connected with stigma would hinder positive attitudes towards seeking help, but this could not be approved in my results. H3 is rejected. Higher levels in autonomous motivation were predicted leading to more positive attitudes towards seeking help and higher levels in controlled motivation were predicted leading to negative attitudes towards seeking help. I approved H4 only partly. While I suggest that autonomous motivation is influencing attitudes towards seeking help more positively in contrast to controlled motivation, I found that autonomous motivation is an important feature for the model leading to more positive attitudes towards seeking help, but controlled motivation was not a significant feature according to permutation-based feature importance. Concerning the self-identification as mentally ill. I rejected H4b, even if self-identification as mentally ill correlate with the perception of complaints (IPQ-R). Concerning socio-demographics (H5) and well-being (H6) no features showed significant effects on attitudes towards seeking help in both models and I rejected the suggested hypotheses.

Discussion

Summary

Machine learning has been applied in many research areas. In psychology, for instance, it can be deployed to identify important features for specific output. As I used a robust machine learning model it was possible to incorporate multiple input variables while forestalling overfitting (Eder et al., 2021). In the context of stigma, different stigmatizing attitudes could be

incorporated without deciding for one measurement. The approach can handle large datasets. This master thesis reveals that autonomous motivation and stigmatization of help-seeking can predict attitudes towards seeking help. Higher levels of positive autonomous motivation lead to increased positive attitudes towards seeking help and higher levels of self-stigma of help-seeking lead to increased negative attitudes towards seeking help. Concerning the controlled motivation, regression analyses show different patterns. While the model-based analysis shows a significant effect of controlled motivation on increased positive attitudes towards seeking help, the permutation-based analysis could not confirm this finding. I also suggested this finding would apply vice versa, meaning that more controlled motivation would lead to negative attitudes towards seeking help. Socio-demographics and well-being play a smaller role in predicting attitudes towards seeking help than expected. Past researchers have found that sociodemographic data influence certain beliefs concerning mental illness (Riedel-Heller et al., 2005; Rose et al., 2007). However, Riedel-Heller et al. (2005) have surveyed the attitudes in a very generalizing way. This may be one reason why the influence of socio-demographic in this specific context is lower. The stereotype that less educated, younger, single men have more negative attitudes towards seeking help could not be found. This is in line with the research of Hunt et al. (2010), which proposes a more complex coherence, suggesting that it may even be harmful proposing that men do seek less help than women. Well-being did not highly influence attitudes. Here, the hypothesis could be put forward that well-being mainly affects intention and behaviour and not attitudes towards seeking help.

Since many different mental illness stigma measures are used in this research, it does not come as a surprise that the measurements correlate moderately. It is also interesting that the awareness as well as agreement with stereotypes correlate very little. This is in line with research of Corrigan et al. (2006) pointing out that there is a difference between the awareness of stereotypes and the agreement with stereotypes. Since the agreement with stereotypes influences attitudes towards seeking help in the model-based analysis, but not in the permutation-based analysis, the hypothesis that the agreement with stereotypes influences attitudes towards help-seeking could only be partially confirmed. The awareness of stereotypes has less influence on attitudes towards seeking help. This also emphasises the difference between the two types of stigmatizing attitudes. For the personal help process, it is therefore important which stereotypes regarding a person with mental illness the individual agrees with. It is more important what stereotypes an individual has internalised and not what stereotypes about mental illnesses are kept alive by society. Furthermore, it is striking that the agreement to the stereotype of blame and emotional reactions (fear, sensation of shame) correlate with the

desire for social distance (SDS) and with each other, even if they do not prove to be a significant feature for attitudes towards seeking help. This finding suggests that emotions can be a driving force for social distance and even discrimination (Angermayer, 2010). The self-identification as mentally ill correlates with the perception of the complaints but does not lead to a significant difference in attitudes towards seeking help.

Limitations, Strength, and Further Aspects

Although the present results support that autonomous motivation and self-stigmatization of help-seeking does influence attitudes towards seeking help, it is necessary to recognize several potential limitations. A limitation of the results is that we adopted a very small questionnaire for the survey of motivation as opposed to the stigma measurements. Despite the moderate correlations, further research could incorporate differences in motivation, and stigma measures could focus more on the agreement with stereotypes as markers of stigma and barrier to the health system. In my view, the most compelling explanation for the finding of controlled motivation on attitudes towards seeking help, is that it might be helpful to use controlled motivation for building attitudes in the context of help-seeking. Moreover, it might be helpful for people with depressive symptoms to get motivation from having someone close to them simply saying it would be good to seek help. In some cases, a person with depressive symptoms might benefit from another person giving them the impulse to seek help. The external impulse can change attitudes and thus lead to an improvement in help-seeking behaviour. In the specific case of the ACMQ questionnaire, the question." I feel that my family/friends expect me to seek help" could be extended to other contexts like work and health-related people. This is called external regulation as explained by Deci and Ryan (2008). Corrigan et al. (2014) find that the effect of stigma is moderated by cultural relevance. Cultural differences could provide a crucial insight into when which type of motivation is more effective

Though it must be emphasized that the negative effects of higher levels of controlled motivation on the attitude towards help-seeking could not be found, my research shows that autonomous motivation performed significantly better than controlled motivation. This agrees with previous research (Deci & Ryan, 2008; Hagger et al., 2014). I would also like to point out that the subscales of autonomous and controlled motivation in my results correlate moderately. This could mean that the distinction between autonomous and controlled motivation is not the leading point for seeking help, but namely being motivated in the first place, that leads to change in attitudes towards seeking help. It also means that it does not have to be a trade of - meaning that if you are more controlled motivated you can't be autonomously motivated anymore.

Angermeyer et al. (2010) state that the public reactions towards people with mental health issues are under-researched and do need more attention. A study of Buckwitz et al. (2021) shows that people who describe positive contact with a person with mental illness may be associated lowered stigma. Since our sample consists of people who have symptoms of mental illness, one explanation for the low effect of emotional reactions on attitudes towards seeking help could be that the participants with mental health symptoms already have an awareness of mental illness and therefore the emotional reactions towards people with mental illness are not the same as in a sample with less PHQ-9 scores. Therefore, the results of my master's thesis can only refer to a population with general symptoms and not to the entire population. The Master's thesis therefore contributes to gaining a better insight into the attitudes of people who already have health symptoms but are not yet fully aware of them. One big advantage here, however, is that the sample might be on their pathway (Eiraldi, et al, 2006) to seeking help and it can be worked out more precisely what the real push and pull factors towards help-seeking are. To put my results in the larger context of the complete intervention project, it is important to emphasise that the sample with at least mild depressive symptoms, but not diagnosed as mentally ill was subjected to an online intervention in the following part to find out which other factors have an influence on change in the help-seeking process.

It is also a strength of the work to have incorporated and interpreted so many aspects of stigma. The work emphasises both the historical roots of stigma, explained by Goffman (1963) and far-reaching effects of stigma on health behaviour and consequences like discrimination and lower life quality for the affected persons (Corrigan et al., 2014; El-Badri & Mellsop, 2007). Even if not all stigma-measurements are relevant for the regression model, correlation analysis reveals important insights. Agreement to stereotypes and emotional reactions in the context of stigma correlate and interact with other stigma measurements. The sensation of shame, the agreement with the stereotype of blame and fear, anger and pro-social reactions did not make a difference for attitudes towards seeking help but. regarding the correlations, a second look is worthwhile. I find the strongest correlation within stigma measurements: between sensation of shame and self-stigma of help-seeking and anger and fear. Since self-stigma of help-seeking is an important predictor of help-seeking attitudes, the correlation with shame cannot be ignored. If shame has an important influence on the stigma of help-seeking itself, it would be beneficial to find out more about it. Thornicroft and Kassam (2008) state that emotional reactions predict discrimination behaviour stronger than stigma itself, but it cannot be confirmed the same for attitudes towards seeking help.

Another aspect that should not be neglected is that there is always a tendency towards social desirability in stigma measures (Corrigan, 2015). The mean scores on the desire for social distance scale and sensation of shame and the agreement to stereotypes measures are very low. Henderson et al. (2012) found that online surveys can reduce this effect. To prevent this challenge, this is already implemented in the study. Still this effect needs to be mentioned and acknowledged as a limitation.

Another limitation that should not be ignored is that I have operationalised the attitude towards help-seeking as help-seeking, excluding intentions and behaviour. This can be further developed in a more extensive study. The TPB allows a division into attitudes, intentions and behaviour and states that attitudes predict intentions and behaviour (Ajzen, 1991). It thus establishes a basic theory for planned behaviour. The integration of different types of motivation inspired by SDT is therefore useful, as the TPB omits these aspects and the origins of the emergence of certain concepts. It would now be interesting to examine the influence of motivation on intention and behaviour in a further step, as Hagger and Chatzisaranits (2009) in their study. They integrate SDT and TPB. Tomczyk et al. (2020) also suggest that the relationship between intention and behaviour needs more attention. This highlights again that motivation needs more attention in research around help-seeking.

Both models show that especially the stigma of help-seeking and no other stigmatizing measurements could predict attitudes towards seeking help. This is also in line with research which is confirming that self-stigma of help-seeking and the self-stigma of mental illness are independent constructs (Tucker et al., 2013). In both my models self-stigmatization of help-seeking can be seen as the biggest barrier factor for higher levels in positive attitudes towards seeking help. This is a result worth highlighting as it can be followed up by further research. It is still relevant and necessary to find out why people who are affected by mental health do not seek help. Here I would again refer to Vogel et al. (2003) who also emphasize that besides the awareness of stereotypes and the agreement with stereotypes, the impact of self-esteem on asking for help is an important barrier, and self-disclosure is an important point to consider in this context. Higher autonomous motivation could lead to higher self-value and therefore to better help-seeking behaviour. Incorporating self-esteem could be a next step.

In addition, the long-term factor of autonomous motivation can only be captured in a long-term survey. It would also be interesting to find out whether the difference between autonomous and controlled motivation increases in the long run and has a different effect on help-seeking behaviour. We also did not incorporate amotivation in our study, which is suggested by the SDT as a complete loss of motivation (Gillison et al., 2019). The strength of

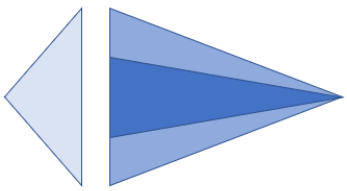
the SDT is to incorporate also basic needs. In the context of mental health, the theory can also lead to further successes and be further elaborated. The division into autonomous and controlled motivation offers a small, very specific insight and this is a strength of the work, yet competence and relatedness, next to autonomy as further basic needs can also have an impact on attitudes towards seeking help.

The robust machine-learning model is on the one hand suitable for multiple variables on the other hand it is also a new approach measuring the impact of stigma and has not yet been implemented in combination with motivational aspects. Since both permutation and model-based models have their advantages and disadvantages, I reported both in the master thesis. As permutation-based analysis does have problems with correlation, it is more conservative than model-based anlysis. Here it includes less features, giving different results. However, since both models consider two factors as relevant, this can be a good confirmation for the corresponding hypotheses.

Despite these limitations, this master thesis can be seen as a first step integrating more aspects of SDT into stigma research and the TPB. Much work remains to be done to establish a full understanding of the extent of how motivational differences influence help-seeking. How the SDT can contribute to balance the negative effect which stigma can have on the individual. Reducing the self-stigma of help-seeking could finally generate the picture as symbolised through Figure 7. Meaning more people are seeking help than not, compared to Figure 3.

Figure 7

Exemplary Model of the Balance of Mental Health Stigma and Self-Determination Theory (SDT)



Note. The Figure describes symbolically the process of how the strengthening of autonomy, competence, and relatedness as part of the SDT (right) could balance stigma, if stigmatizing attitudes (left) are reduced.

Conclusion

The present thesis contributes to growing evidence that motivation as part of the SDT can be a helpful theory to gain more insights also in the mental health help-seeking context, as higher autonomous motivation led to higher values in positive attitudes towards seeking help. Additionally, the other main outcome is that the stigma of help-seeking itself is influencing attitudes towards seeking help negatively. Machine learning models were applied as a robust method. More research on integrating the TPB and the SDT can be helpful to understand mental health behaviour und to close the help-seeking gap.

Appendix

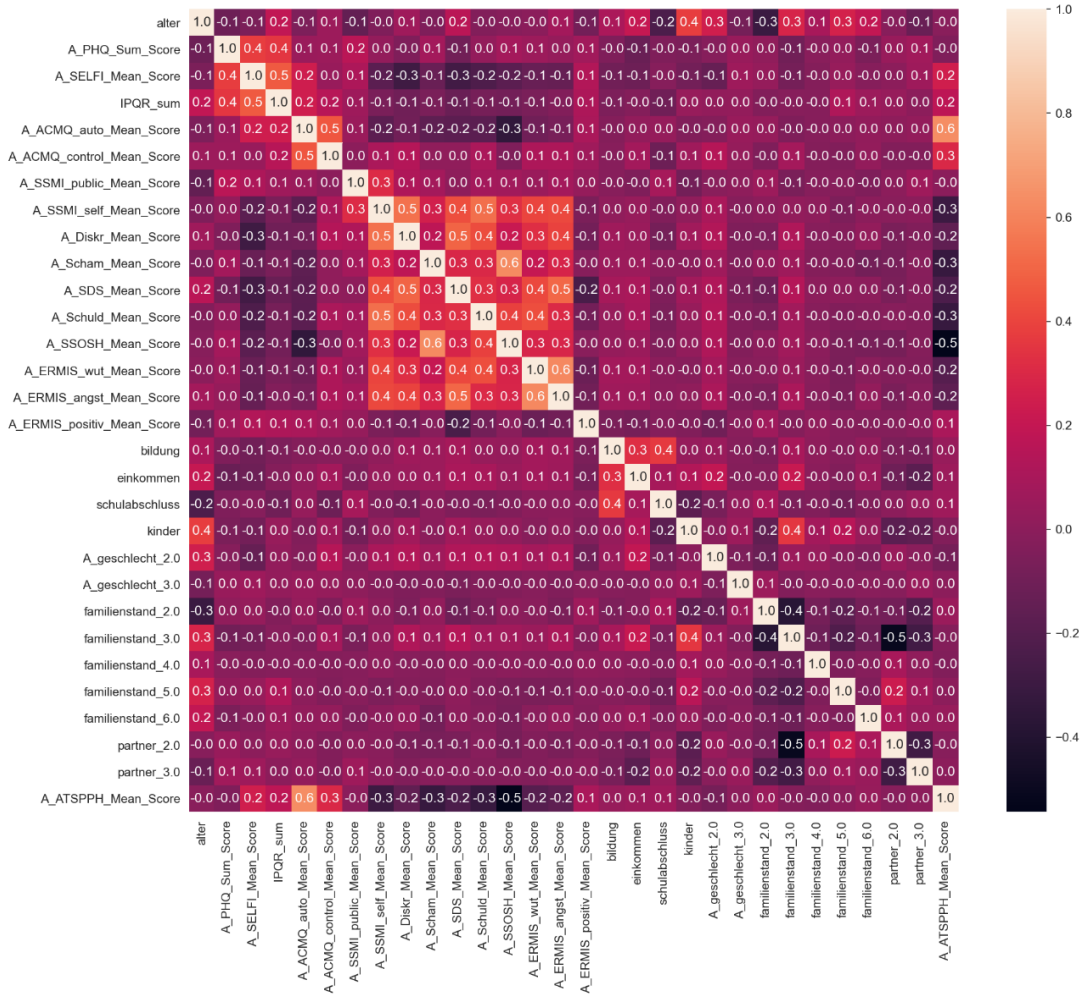
German Summary

Die Stigmatisierung psychischer Erkrankungen ist ein bekanntes Hindernis für die Inanspruchnahme von Hilfe. Die Wahrnehmung von Stereotypen sowie die Zustimmung zu Stereotypen über mentale Krankheiten behindern die Hilfesuche. An der Stigmatisierung sind verschiedene emotionale Reaktionen beteiligt, und es hat sich gezeigt, dass die Selbstidentifizierung als psychisch krank ein wichtiger Schritt zur Hilfesuche ist. Obwohl es viele Studien über Stigmatisierung im Zusammenhang mit der Hilfesuche gibt, gibt es nur wenige, die die Motivationen der Betroffenen für die Hilfesuche beleuchten. Ich verwende die Motivationskonstrukte der Selbstdeterminationstheorie (SDT), um dieser Frage näher auf den Grund zu gehen. Die SDT ist im Arbeitskontext weit verbreitet, im Kontext der psychischen Gesundheit jedoch nicht so häufig eingesetzt worden. Ich untersuche, ob stigmatisierende Einstellungen (oder der Motivation die Einstellung zur Hilfesuche vorhersagen kann. Dies wird durch die Anwendung eines machine learning models (Elastic-Net) erreicht. Zusätzlich werden Wohlbefinden und soziodemografische Daten einbezogen. Zur Bewertung der Merkmale wurden permutationsbasierte und modellbasierte Analysen durchgeführt. Maschinelles Lernen ist bei größeren Datensätzen mit mehreren Eingabevariablen sehr suffizient. N = 1751 Teilnehmer wurden analysiert. Mit einem R^2-Wert von .55 konnte ein erheblicher Teil der Varianz erklärt werden. Die wichtigsten Prädiktoren waren die Selbststigmatisierung der Hilfesuchenden und die autonome Motivation. Die Ergebnisse könnten dazu beitragen, besser zu verstehen, wie autonome Motivation dazu beitragen kann, die Einstellung zur Hilfesuche zu ändern. In Anbetracht der Stigmatisierung der psychischen Krankheit ist es wichtig, Faktoren zu finden, die die Hilfesuche begünstigen.

Figures for Correlation and Regression Analysis

Figure 8

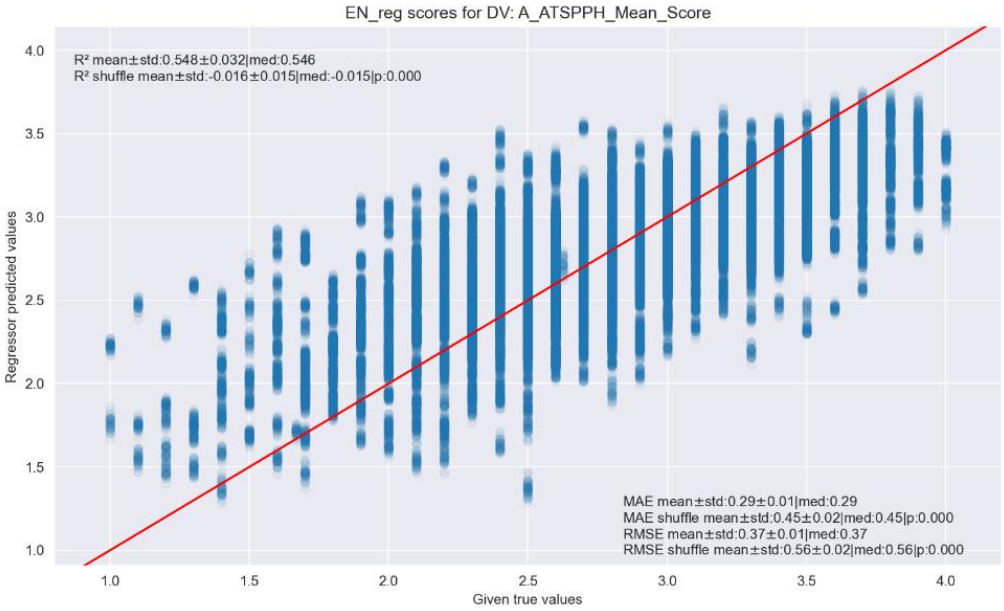
Correlation Heatmap Over all Integrated Features and the Output Attitudes Towards Seeking Help



Note. For the PHQ and the IPQR Sum Scores were used; All other measurements the mean (*M*) was calculated.

Figure 9

Elastic net regression scores for the dependent variable attitudes towards seeking help



Note. R^2 = coefficient of determination. *MAE* = mean average error. *Std* = Standard deviation. *Med* = median. *RMSE* = Root mean squared error.

Figure 10

Elastic-Net Regression score for autonomous motivation on Attitudes Towards Seeking Help.

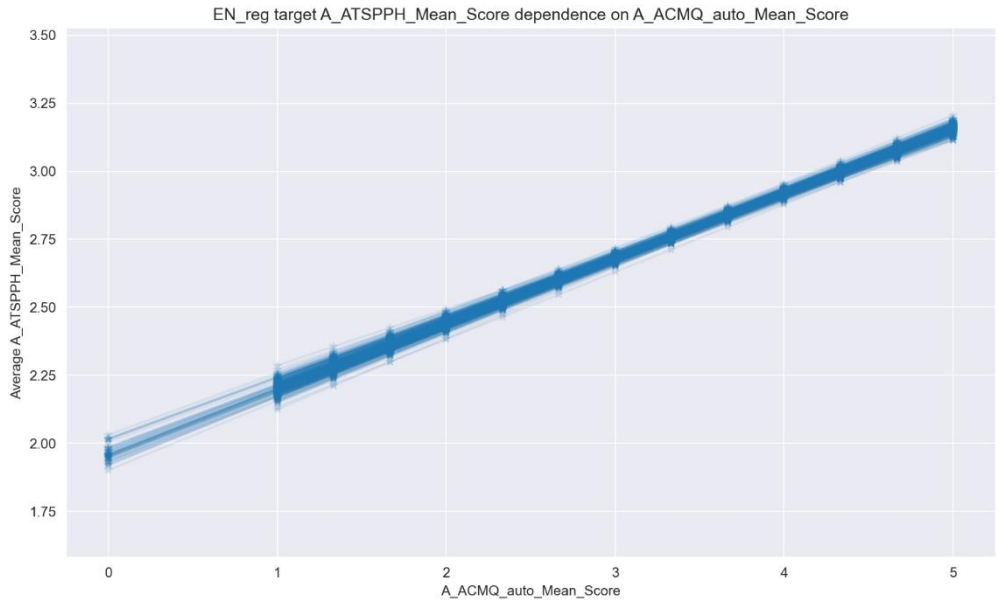
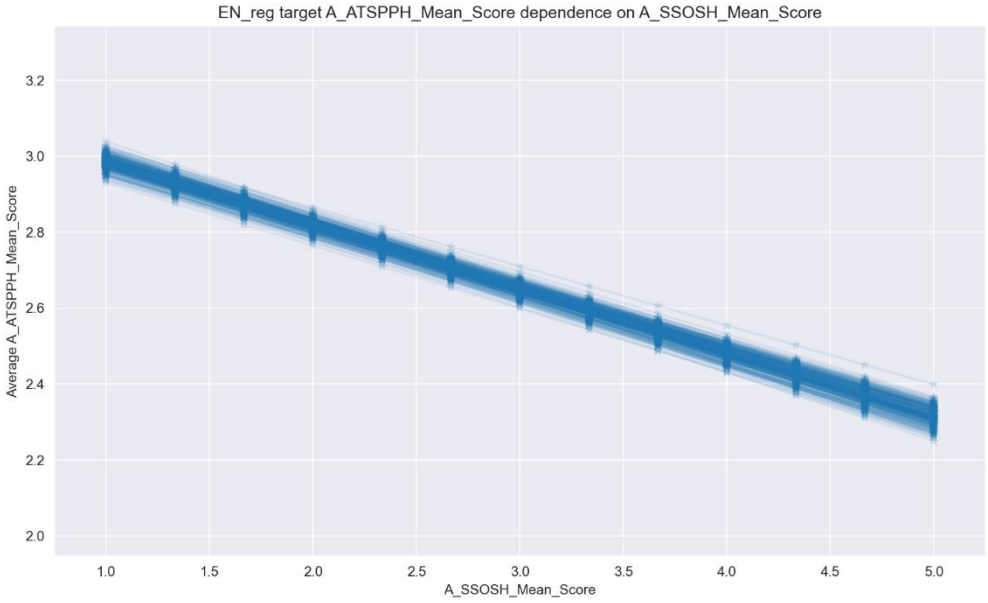


Figure 11

Elastic-Net Regression from self-stigmatization of help-seeking on Attitudes Towards Seeking Help.



Questionnaires

Table 6

Awareness of Stereotypes and Agreement with Stereotypes

Es gibt viele Einstellungen über psychische Erkrankungen. Wir würden gerne wissen, was nach Ihrer Meinung die Mehrheit der gesamten Bevölkerung oder die meisten Leute über diese Einstellungen denken. **Bitte geben Sie an, wie stark Sie den untenstehenden Aussagen zustimmen oder diese ablehnen.** **Ich denke, die Öffentlichkeit glaubt,…**		
…die meisten Menschen mit einer psychischen Erkrankung sind schuld an ihren Problemen.	1 (Stimme überhaupt nicht zu) 2 3 (Teils/teils) 4 5 (Stimme völlig zu)	D_SSMI_public_1
…die meisten Menschen mit einer psychischen Erkrankung sind unberechenbar.		D_SSMI_public_2
…die meisten Menschen mit einer psychischen Erkrankung werden sich nicht erholen oder bessern.		D_SSMI_public_3
…die meisten Menschen mit einer psychischen Erkrankung sind gefährlich.		D_SSMI_public_4

…die meisten Menschen mit einer psychischen Erkrankung können nicht für sich sorgen.		D_SSMI_public_5
Bitte geben Sie durch Ankreuzen an, wie stark Sie zustimmen oder ablehnen. Beantworten Sie bitte jede Aussage und lassen Sie keine aus. **Ich denke,…**		
…die meisten Menschen mit einer psychischen Erkrankung sind schuld an ihren Problemen.	1 (Stimme überhaupt nicht zu) 2 3 (Teils/teils) 4 5 (Stimme völlig zu)	D_SSMI_self_1
…die meisten Menschen mit einer psychischen Erkrankung sind unberechenbar.		D_SSMI_self_2
…die meisten Menschen mit einer psychischen Erkrankung werden sich nicht erholen oder bessern.		D_SSMI_self_3
…die meisten Menschen mit einer psychischen Erkrankung sind gefährlich.		D_SSMI_self_4
…die meisten Menschen mit einer psychischen Erkrankung können nicht für sich sorgen.		D_SSMI_self_5

Note. Corrigan, P. W., Michaels, P. J., Vega, E., Gause, M., Watson, A. C., & Rüsch, N. (2012). Self-Stigma of Mental Illness Scale - Short Form: Reliability and validity. *Psychiatry Research, 199*(1), 65–69.

Table 7

Desire for Social Distance (SDS)

Bitte lesen Sie die folgenden Äußerungen und bewerten Sie jeden Satz.		
Wenn Sie ein Zimmer zu vermieten hätten, inwieweit würden Sie jemand mit einer psychischen Erkrankung als Untermieter nehmen?	1 (Sicher nicht) 2 3 4 5 (Ganz bestimmt)	D_SDS_1
Inwieweit würden Sie jemand mit einer psychischen Erkrankung als Arbeitskollegen akzeptieren?		D_SDS_2
Inwieweit wäre Ihnen jemand mit einer psychischen Erkrankung als Nachbar recht?		D_SDS_3
Inwieweit würden Sie jemand mit einer psychischen Erkrankung Ihre Kinder einige Stunden zur Aufsicht anvertrauen?		D_SDS_4
Inwieweit würden Sie jemand mit einer psychischen Erkrankung als Freund akzeptieren?		D_SDS_5
Inwieweit würden Sie eine Freundin oder einen Freund von Ihnen mit jemandem bekannt machen, der eine psychische Erkrankung hat?		D_SDS_6
Wenn einer Ihrer Bekannten eine Arbeitsstelle zu besetzen hätte, inwieweit würden Sie ihm jemand		D_SDS_7

empfehlen, von dem Sie wissen, dass er eine psychische Erkrankung hat?		

Note. Angermeyer, M. C., & Matschinger, H. (1997). Social distance towards the mentally ill: results of representative surveys in the Federal Republic of Germany. *Psychological medicine*, *27*(1), 131-141.

Table 8

Support for Discrimination

Bitte lesen Sie die folgenden Äußerungen und bewerten Sie jeden Satz.		
Wenn Menschen mit psychischer Krankheit nicht in eine medizinische Behandlung einwilligen, sollten sie gegen ihren Willen behandelt werden.	1 (Stimme überhaupt nicht zu) 2 3 (Teils/teils) 4 5 (Stimme völlig zu)	D_Diskr_1
Menschen mit psychischer Krankheit sollten kein öffentliches Amt ausüben dürfen.		D_Diskr_2
Menschen mit psychischer Krankheit sollten keinen Führerschein besitzen dürfen.		D_Diskr_3

Note. Schomerus, G., Angermeyer, M. C., Baumeister, S. E., Stolzenburg, S., Link, B. G., & Phelan, J. C. (2016). An online intervention using information on the mental health-mental illness continuum to reduce stigma (PSYNDEXshort). European Psychiatry, 32, 21–27.

Table 9

Stereotype of Blame for Mental Illness

Bitte lesen Sie die folgenden Äußerungen und bewerten Sie jeden Satz.		Self-Stigma of Menatl Illness
Menschen mit psychischer Krankheit sind an ihren Problemen selber schuld.	1 (Stimme überhaupt nicht zu) 2 3 (Teils/teils) 4 5 (Stimme völlig zu)	D_Schuld_1
Psychische Krankheiten sind meistens die Folge eines schwachen Charakters.		D_Schuld_2
Menschen mit psychischer Krankheit müssen sich nur zusammenreißen, damit es ihnen wieder besser geht.		D_Schuld_3
Eine der Hauptursachen für psychische Krankheiten ist ein Mangel an Selbstdisziplin.		D_Schuld_4

Note. Schomerus, G., Angermeyer, M. C., Baumeister, S. E., Stolzenburg, S., Link, B. G., & Phelan, J. C. (2016). An online intervention using information on the mental health-mental illness continuum to reduce stigma (PSYNDEXshort). European Psychiatry, 32, 21–27.

Table 10

Sensation of Shame for Mental Illness

Würden Sie sich schämen, wenn Sie selbst eine psychische Erkrankung hätten?	1 (Gar nicht) 2 (Ein wenig) 3 (Mäßig) 4 (Ziemlich stark) 5 (Sehr stark)	D_Scham_1
Würden Sie sich schämen, wenn andere wüssten, dass Sie wegen psychischen Erkrankungen professionelle Hilfe in Anspruch nehmen?		D_Scham_2

Table 11

Self-Stigmatization of Help-Seeking (SSOSH)

Bitte lesen Sie die folgenden Äußerungen und bewerten Sie jeden Satz.		
1. Ich würde mich unzulänglich fühlen, wenn ich psychologische Unterstützung in Anspruch nehmen würde.	1 (Stimme überhaupt nicht zu) 2 (Stimme nicht zu) 3 (Teils/teils) 4 (Stimme zu) 5 (Stimme voll zu)	D_SSOSH_1
6. Ich würde mich minderwertig fühlen, wenn ich einen Psychologen um Hilfe bitten würde.		D_SSOSH_6
8. Wenn ich einen Psychologen aufsuchen würde, wäre ich mit mir selbst weniger zufrieden.		D_SSOSH_8

Note. Brenner, R. E., Colvin, K. F., Hammer, J. H., & Vogel, D. L. (2020). Using Item Response Theory to Develop Revised (SSOSH-7) and Ultra-Brief (SSOSH-3) Self-Stigma of Seeking Help Scales. *Assessment*.

Table 12

Emotional Reactions to the Mentally Ill (ERMIS)

Stellen Sie sich bitte vor, Sie begegnen einer Person mit psychischen Problemen. Wie würden Sie reagieren? **Bitte geben Sie an, inwieweit folgende Aussagen auf Sie zutreffen.**		
Ich fühle mich nicht wohl.	1 (Trifft überhaupt nicht zu) 2 3 4 5 (Trifft voll und ganz zu)	D_ERMIS_1
Ich fühle mich nicht sicher.		D_ERMIS_2
Die Person ruft Angst in mir hervor.		D_ERMIS_3
Die Person ruft Unverständnis meinerseits hervor.		D_ERMIS_4
Ich fühle Sympathie.		D_ERMIS_5
Ich fühle Mitleid.		D_ERMIS_6
Ich habe das Bedürfnis zu helfen.		D_ERMIS_7
Ich fühle mich genervt.		D_ERMIS_8
Ich reagiere wütend.		D_ERMIS_9
Ich bin amüsiert.		D_ERMIS_10

Note. Angermeyer, M. C., Holzinger, A., & Matschinger, H. (2010). Emotional reactions to people with mental illness. *Epidemiology and Psychiatric Sciences, 19*(1), 26–32.

Table 13

Self-Identification as mentally ill (SELF-I)

Wie schätzen Sie Ihre aktuellen Beschwerden ein? Bei folgenden Fragen geben Sie bitte durch Anklicken der betreffenden Antworten an, wie sehr Sie den Aussagen zustimmen oder diese ablehnen.		
Meine aktuellen Beschwerden könnten erste Anzeichen einer psychischen Störung sein.	1 (stimmt überhaupt nicht) 2 (stimmt nicht) 3 (weder noch) 4 (stimmt) 5 (stimmt voll und ganz)	D_SELFI_1
Die Vorstellung, selbst eine psychische Erkrankung zu haben, erscheint mir abwegig.		D_SELFI_2
Ich bin die Sorte von Person, die zu psychischen Krankheiten neigen könnte.		D_SELFI_3
Ich sehe mich als Person, die geistig gesund und psychisch stabil ist.		D_SELFI_4
Ich bin mental stabil, eine psychische Erkrankung habe ich nicht.		D_SELFI_5

Note. Schomerus, G., Muehlan, H., Auer, C., Horsfield, P., Tomczyk, S., Freitag, S., Evans-Lacko, S., Schmidt, S., & Stolzenburg, S. (2019). Validity and psychometric properties of the Self-Identification as Having a Mental Illness Scale (SELF-I) among currently untreated persons with mental health problems. *Psychiatry Research, 273*, 303–308.

Table 14

Autonomous and Controlled Motivation Scale (ACMQ)

Es gibt eine Vielzahl von Gründen, warum Menschen ihr Verhalten verändern. Bitte lesen Sie die untenstehenden Aussagen und geben Sie auf der Skala an, inwiefern Sie zustimmen. **Ich kann mir vorstellen, mir für meine psychischen Beschwerden Hilfe zu suchen, weil…**		
…ich das Gefühl habe, dass meine Familie/Freunde von mir erwarten, dass ich mir Hilfe suche.	1 (Stimme überhaupt nicht zu) 2 (Stimme eher nicht zu) 3 (Weder noch) 4 (Stimme zu) 5 (Stimme voll und ganz zu)	A_ACMQ_1
…es mir dann besser möglich ist, mich auf andere wichtige Bereiche meines Lebens einzulassen.		A_ACMQ_2
…ich von mir selbst enttäuscht wäre, wenn ich mir keine Hilfe suchen würde.		A_ACMQ_3
…ich das Gefühl habe, dass es mir persönlich guttun würde.		A_ACMQ_4
…ich möchte, dass andere sehen, dass ich mir Hilfe suche.		A_ACMQ_5
…Hilfe in Anspruch zu nehmen, ist für mich persönlich eine wichtige Entscheidung, um mich mit mir und meinen Problemen auseinanderzusetzen.		A_ACMQ_6

Note. Keleher, B. (2020). Evaluating the Effect of Basic Psychological Needs Support and Thwarting on Motivation for Emotionally Demanding Behaviour Change. UWSpace. http://hdl.handle.net/10012/16063

Table 15

Patients Health Questionnaire (PHQ-9)

Wie oft fühlten Sie sich im Verlauf der letzten 2 Wochen durch die folgenden Beschwerden beeinträchtigt?		
Wenig Interesse oder Freude an Ihren Tätigkeiten	1 (überhaupt nicht) 2 (an einzelnen Tagen)	A_PHQ_1
Niedergeschlagenheit, Schwermut oder Hoffnungslosigkeit		A_PHQ_2
Schwierigkeiten, ein- oder durchzuschlafen oder vermehrter Schlaf		A_PHQ_3

Müdigkeit oder Gefühl, keine Energie zu haben	3 (an mehr als der Hälfte der Tage) 4 (beinahe jeden Tag)	A_PHQ_4
Verminderter Appetit oder übermäßiges Bedürfnis zu essen		A_PHQ_5
Schlechte Meinung von sich selbst; Gefühl, ein Versager zu sein oder die Familie enttäuscht zu haben		A_PHQ_6
Schwierigkeiten, sich auf etwas zu konzentrieren, z. B. beim Zeitungslesen oder Fernsehen		A_PHQ_7
Waren Ihre Bewegungen oder Ihre Sprache so verlangsamt, dass es auch anderen auffallen würde? Oder waren Sie im Gegenteil "zappelig" oder ruhelos und hatten dadurch einen stärkeren Bewegungsdrang als sonst?		A_PHQ_8
Gedanken, dass Sie lieber tot wären oder sich Leid zufügen möchten?		A_PHQ_9

Note. Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, *16*(9), 606–613. https://doi.org/10.1046/j.1525-1497.2001.016009606.x

Table 16

Revised Illness Perception Questionaire (IPQ-R)

Bitte achten Sie darauf, dass sich die Antwortmöglichkeiten von Frage zu Frage unterscheiden. Wenn Sie eine Antwort anklicken, färbt sie sich blau.		
Wie stark beeinträchtigen Ihre Beschwerden Ihr Leben?	1 (überhaupt keine Beeinträchtigung) bis 7 (sehr starke Beeinträchtigung)	IPQR_1
Wie lange meinen Sie, dass Ihre Beschwerden noch andauern werden?	1 (nur noch kurz) bis 7 (für immer)"	IPQR_2
Wie stark meinen Sie, Ihre Beschwerden selbst kontrollieren zu können?	1 (absolut keine Kontrolle) bis 7 (extreme Kontrolle)"	IPQR_3
Wie stark meinen Sie, dass eine Behandlung bei Ihren Beschwerden helfen kann?	1 (überhaupt nicht) bis 7 (extrem hilfreich)"	IPQR_4
Wie stark spüren Sie Auswirkungen durch Ihre Beschwerden?	1 (überhaupt keine Auswirkungen) bis 7 (viele starke Auswirkungen)"	IPQR_5

Wie stark machen Sie sich Sorgen über Ihre Beschwerden?	1 (überhaupt keine Sorgen) bis 7 (extreme Sorgen)"	IPQR_6
Wie gut meinen Sie, Ihre Beschwerden zu verstehen?	1 (überhaupt nicht) bis 7 (sehr klar)"	IPQR_7
Wie stark sind Sie durch Ihre Beschwerden gefühlsmäßig beeinträchtigt? (Sind Sie durch Ihre Beschwerden zum Beispiel ärgerlich, verängstigt, aufgewühlt oder niedergeschlagen?)	1 (gefühlsmäßig überhaupt nicht betroffen) bis 7 (gefühlsmäßig extrem betroffen)"	IPQR_8
Bitte geben Sie an, welche drei Faktoren Ihrer Meinung nach am meisten verantwortlich für Ihre Beschwerden sind.	Die wichtigsten Ursachen meiner Schwierigkeiten sind: 1. 2. 3.	IPQR_9

Note. Broadbent, E., Petrie, K. J., Main, J. & Weinman, J. (2006). The Brief Illness Perception Questionnaire.Journal of Psychosomatic Research, 60(6), 631–637. https://doi.org/10.1016/j.jpsychores.2005.10.020

Table 17

Socio-Demografics of the Participants

In welchem Monat wurden Sie geboren?	Januar Februar März April Mai Juni Juli August September Oktober November Dezember	alter_monat
In welchem Jahr wurden Sie geboren?	1930 …bis… 2005	alter_jahr
Bitte geben Sie Ihr Geschlecht an.	1 (weiblich) 2 (männlich) 3 (divers)	A_geschlecht

Noch ein paar Fragen zu Ihnen persönlich... *Alle Daten werden anonymisiert und es können keine Rückschlüsse zu Ihnen gemacht werden.*		Sozio-demographische Date
Welchen höchsten allgemeinbildenden Schulabschluss haben Sie?	1 (Aktuell noch Schüler*in) 2 (Kein Schulabschluss) 3 (Hauptschulabschluss/-POS) 4 (Realschulabschluss/-POS) 5 (Fachhochschulreife, Abschluss Fachoberschule) 6 (Allgemeine Hochschulreife/-Abitur/EOS) 7 (Einen anderen Schulabschluss, und zwar:)	schulabschluss
Welchen höchsten beruflichen Ausbildungsabschluss haben Sie?	1 (Auszubildende*r, Student*in, Schüler*in) 3 (Keinen beruflichen Abschluss) 4 (Beruflich-betriebliche Berufsausbildung) 5 (Beruflich-schulische Ausbildung) 7 (Ausbildung an einer Fach-, Meister-, Technikerschule, Berufs- oder Fachakademie) 9 (Fachhochschulabschluss (z. B. Diplom, Master)) 10 (Universitätsabschluss (z. B. Diplom, Magister, Staatsexamen, Master)) 11 (Promotion) 12 (einen anderen beruflichen Abschluss, und zwar:) 13 (Fachhochschulabschluss (Bachelor)) 14 (Universitätsabschluss (Bachelor))	bildung

In welcher Erwerbssituation befinden Sie sich? Bitte beachten Sie, dass unter Erwerbstätigkeit jede bezahlte bzw. mit einem Einkommen verbundene Tätigkeit verstanden wird.		Erwerbsituation
Vollzeiterwerbstätig	0 (not quoted) 1 (quoted)	erwerbssituation_vollzeit
Teilzeiterwerbstätig		erwerbssituation_teilzeit
Altersteilzeit (unabhängig davon, ob in der Arbeits-oder Freistellungsphase befindlich)		erwerbssituation_altteilzeit
Geringfügig erwerbstätig, 400-Euro-Job, Minijob		erwerbssituation_minijob
„Ein-Euro-Job“ (bei Bezug von Arbeitslosengeld II)		erwerbssituation_1eurojob
Gelegentlich oder unregelmäßig beschäftigt		erwerbssituation_gelegentlich
In einer beruflichen Ausbildung/Lehre		erwerbssituation_ausbildung
In Umschulung		erwerbssituation_umschulung
Wehrdienst/Zivildienst		erwerbssituation_zivildienst
Freiwilliges Soziales Jahr/ Bundesfreiwilligendienst		erwerbssituation_fsj
Mutterschafts-, Erziehungsurlaub, Elternzeit oder sonstige Beurlaubung		erwerbssituation_beurlaubung
Nicht erwerbstätig (einschließlich: Schüler*innen oder Studierende)		erwerbssituation_kein
Selbstständig		erwerbssituation_selbstst
Geben Sie bitte an, zu welcher Gruppe auf dieser Liste Sie gehören.		
Schüler*innen an einer allgemeinbildenden Schule	0 (not quoted) 1 (quoted)	erwerbssituation_schule
Student*innen		erwerbssituation_studium
Rentner*innen, Pensionär*innen, im Vorruhestand		erwerbssituation_rente
Arbeitslose		erwerbssituation_arbeitslos
Dauerhaft Erwerbsunfähige		erwerbssituation_erwerbsunf
Hausfrauen/Hausmänner		erwerbssituation_haus
Sonstiges, und zwar:		erwerbssituation_sonst
Wie hoch ist Ihr persönliches monatliches Nettoeinkommen?	1 (0-500 €) 2 (501-1000 €) 3 (1001-1500 €)	einkommen

(Das Nettoeinkommen ergibt sich aus Lohn, Einkommen aus selbstständiger Tätigkeit, öffentlichen Beihilfen, Rente oder Pension. Bitte denken Sie daran, dass wir Ihre Daten nicht für Ihre Person auswerten, sondern nur zur Gruppenbildung verwenden)	4 (1501-2000 €) 5 (2001-2500 €) 6 (2501 € oder mehr)	
Welchen Familienstand haben Sie?	1 (Single/Alleinstehend) 2 (Unverheiratete Partnerschaft) 3 (Verheiratet/-eingetragene Partnerschaft) 4 (Verheiratet, aber getrennt lebend) 5 (Geschieden) 6 (Verwitwet)	familienstand
Leben Sie mit einem/einer Partner*in zusammen?	1 (Ja) 2 (Nein) 3 (Ich habe keinen Partner/keine Partnerin)	partner
Wie viele Kinder haben Sie? (Wenn Sie keine Kinder haben sollten, tragen Sie bitte "0" ein.)		kinder

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Acknowledgements

No one writes a thesis alone. First, I would like to thank Lina for accepting me into her research group in Leipzig and enabling me to gain insights into the topic of stigma in the context of mental health. I learned a lot from her. I would also like to thank Frank, David and Cindy, who first of all made it possible for me to apply the machine learning method and secondly patiently answered all the questions I had in the last year. Then I would like to thank Alex and Caro who have always motivated me during frustrating times and of course Hannah, Jana and Clara who have been good friends to me during my studies and have deeply influenced me on my way to graduation. I thank Burkard for the creative look at my work. Lastly, to my parents for making my studies possible. I am now happy to be able to write this paragraph and to finish my work and take further steps in my education.