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ATTITUDES OF PSYCHIATRISTS TOWARD PEOPLE WITH MENTAL ILLNESS IN HUNGARY

PhD thesis

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LIST OF ABBREVATIONS

CI	confidence interval
CFI	comparative fit index
df	degree of freedom
ECV	the explained common variance
EFA	exploratory factor analysis
KMO	Kaiser-Meyer-Olkin
MLMV	the maximum likelihood estimation with robust standard errors and a mean and variance adjusted
MICA-4	Mental Illness: Clinician's Attitudes-4
OMS-HC	Opening Minds Stigma Scale for Health Care Providers
PCA	Principal component analysis
PUC	percent of uncontaminated correlations
RMSEA	root mean square error of approximation
TLI	Tucker-Lewis Index
χ^2	chi-square
ωH	coefficient omega hierarchical

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1. INTRODUCTION

1.1. Development of personal and professional interest in stigma and the concept of current research

The motivation for this research stemmed from my professional and personal observations of stigma in clinical practice and its profound impacts on patients. As a medical student, I developed a keen interest in understanding people and their symptoms, which naturally led me to specialize in psychiatry, specifically child psychiatry. Throughout my career, I have seen hundreds of patients with various conditions, providing comprehensive care including medical treatment, counseling, one-on-one and group sessions, as well as family and couple therapy. I have had the privilege of accompanying many of them from their initial presentation at the clinic through to the completion of their treatment.

During these interactions, it became evident that once diagnosed with a mental illness, a number of my patients experienced a significant alteration in their self-perceptions. This shift in perception often extends beyond the self, affecting their interpersonal relationships as well. Many patients faced challenges in communicating their diagnoses within school settings or to relatives, highlighting the broader consequences of stigma.

A personal experience that profoundly shaped my career trajectory occurred nine years ago when I began my training in child psychiatry. With great enthusiasm and dedication, I strived to meet the expectations of senior clinicians, families, and patients. Although many aspects of my training were excellent, I frequently observed that physicians often did not pay adequate attention to how they addressed patients during ward rounds and meetings, reducing them to mere diagnostic labels.

This observation sparked my interest in the phenomenon of stigma and led me to investigate the role of psychiatrists in maintaining or reducing it. I realized that without being aware of our own attitudes and biases, we risk disempowering or even harming our clients. Additionally, I became interested in how professionals themselves seek help for their mental health problems. Exploring the literature revealed that there was a scarcity

of research on stigma within the psychiatric community. Although there were studies on medical students, mental health nurses, and psychologists, only a handful addressed the attitudes of psychiatrists.

During my tenure as a board member of the Hungarian Association of Psychiatric Trainees, I was fortunate to work together with enthusiastic early-career colleagues who shared my interest in researching the stigmatizing attitudes of psychiatrists. Working with a team I love and exploring a topic I am passionate about provided an excellent opportunity to conduct a research study. The research study that I designed with Prof. György Purebl, along with the data we collected together with this team and several additions, forms the basis of the current research thesis.

I invite you to join me in examining the attitudes of psychiatrists in Hungary toward individuals with mental illness and identifying the factors that influence these attitudes. Our goal is to explore interventions and strategies to guide professionals in fostering a more compassionate and understanding clinical practice. Additionally, we aim to evaluate the psychometric properties of the primary outcome measure, the Hungarian version of the Opening Minds Stigma Scale for Health Care Providers.

1.2. The phenomenon, concept, and theory of stigma

In our quest to comprehend the world around us, we often rely on concepts and labels to simplify and categorize the phenomena we encounter. On the one hand, these labels serve as cognitive shortcuts that help us recognize our environment by providing a framework for understanding complex ideas and entities. However, whereas labels can be useful in organizing information and facilitating communication, they also have the potential to limit our understanding and perception of reality, on the other. Labels often impose rigid categories that fail to capture the complexities of individual or group identities, and when these labels take on negative connotations, they can become stigmatizing forces.

Stigmas are negative labels that can be used to address individuals and groups. Stigmatizing attitudes refer to negative beliefs, stereotypes, and discriminatory behaviors directed toward individuals or groups based on certain characteristics or attributes. For stigmatizing attitudes to develop, a difference should be identified between the public and the individuals being stigmatized, which will be labeled. All those who bear this different

feature will differ from the public. As a result, this group will be identified as different, becoming increasingly distanced from members of the public community(1).

The concept of stigma has deep sociological roots that trace back to Émile Durkheim. In The Rules of Sociological Method (1895), Durkheim explored deviance as a violation of societal norms and argued that deviance plays a crucial role in maintaining social cohesion by delineating acceptable behavior from the unacceptable. Although Durkheim did not address the issue of stigmatization in any direct way, his examination of deviance as a social phenomenon provided the foundation for subsequent analyses of how deviant behaviors and traits, including mental illness, are stigmatized(2).

The widely accepted definition of stigma comes from Erving Goffman(3), who built upon the previous ideas and argued that it is an implicit or explicit social rejection originating from the putative or actual negative characteristics of individuals or groups. Goffman's theory underscores how stigma acts as a mechanism of social control, distancing those deemed undesirable by broader society. He identified three types of stigma: physical deformities, character blemishes (including mental illness), and tribal stigmas related to race, ethnicity, and religion(3). His concept of "spoiled identity" offers a framework to understand how those with mental illness are socially rejected, and his idea of "passing" illuminates how individuals may hide stigmatized traits to navigate social spaces(4).

After Goffman, scholars like Bruce Link and Jo Phelan (2001) have expanded the understanding of stigma to include the role of power dynamics in the labeling process. Their work emphasizes that stigmatization is more than just negative labeling; it involves stereotyping, the separation between "us" and "them", the consequent loss of status, and discrimination, which result in a devaluation of one group by another. This often reinforces social hierarchies. In their view, stigma operates through the mechanism of power, whereby dominant groups use stigma as a way to maintain their status while marginalizing others(1).

The work of Patrick Corrigan and Amy Watson is also among the most influential in the field, as they differentiated between public stigma and self-stigma. Public stigma refers to the negative reactions of society toward a stigmatized group. The source of stigmatization can be external, known as perceived stigma. Consequently, an individual

or a group can accept these negative beliefs and internalize them, contributing to self-stigma(5). They also highlighted how this dual mechanism—external social rejection and internalized shame—compounds the harmful effects of stigma on mental health(6).

Stigma can manifest at cognitive, emotional, and behavioral levels, such as stereotypes, prejudice, and discrimination among those who stigmatize(7). As prejudice is consenting emotional reactions to a stereotype or a stereotyped person, it might be the main factor in the survival of negative attitudes(8). Stereotyping and prejudgments could result in the discrimination of individuals or an entire group as a behavioral response. In contrast, for the subject experiencing stigma, these dimensions translate into internalized stigma, often leading to self-stereotyping, feelings of shame or hopelessness, and avoidance behaviors (9).

1.3. Stigma toward people with mental illness

Stigma, a persistent issue in a number of diseases, particularly mental, sexually transmitted, and incurable ones, has been present for centuries. As early philosophical ideologies influenced our thinking, early notions of madness and mental illness, as well as the corresponding learned behaviors, may have contributed to the persistence of stigma in contemporary societies(10). Despite modern treatment approaches and understanding causes of mental illness better, stigma persists. In the early years, mental illnesses were viewed as a social problem rather than a medical one due to the belief that they were caused by hereditary factors(10).

Philosophers have played a significant role in shaping the discourse surrounding mental illness and its stigma. Thomas Szasz, in his seminal work *The Myth of Mental Illness*, argued that mental illness is largely a social construct rather than a genuine medical condition(11). He posited that psychiatric diagnoses often serve as a means of social control, enabling society to label and manage behavior that deviates from the norm. Szasz believed that this medicalization of mental distress contributed to stigma, as it framed individuals with mental health conditions as fundamentally different or inferior. In this context, self-reflection among mental health professionals could be beneficial, encouraging them to critically evaluate the diagnoses they assign. This reflection can help

reduce stigma by fostering an understanding that these labels may not accurately capture the complexity of individual experiences.

While Szasz champions the right of individuals to define their own experiences, Michael Foucault in *Madness and Civilization*, encourages a deeper examination of how societal narratives and power structures shape individual experiences of madness. Foucault posited that social institutions, including asylums, were not merely places of healing but served as mechanisms of social control perpetuating stigma and reinforcing the division between the “normal” and the “abnormal”(12). He characterized the history of psychiatry as a distortion of medical institutions for ideological purposes, highlighting the ways in which societal norms influence the treatment and perception of those labeled as mentally ill(12).

Ronald Laing, in the 1960s, emphasized the importance of understanding the interpersonal dynamics that contribute to mental illness. He argued against the reductionist view of mental health conditions, advocating instead for a compassionate approach that acknowledges the complexities of human experience. Laing believed that the stigma associated with mental illness often stems from societal misunderstandings and that a more empathetic perspective could help reduce stigma and promote healing(13). His focus on the relational aspects of mental health highlighted how societal attitudes could influence the experiences of individuals diagnosed with mental disorders.

Both international scholars and Hungarian authors have contributed valuable insights into the issue of mental health-related stigma. The book Golden Cage(14) by Benedek István is a major attempt to humanize life. In a society that excludes individuals who are perceived as a burden, the Golden Cage is unaware of this exclusion; its inhabitants collectively endeavor to exemplify the life principle of "living with joy". They educate their patients to live with freedom, as "those who cannot live freely are powerless against it." In contrast with the negative moral judgments of society, the book consistently identifies positive content in an imposed human fate. It discerns the motives that, through understanding and influencing them, can facilitate reintegration into the community. Complementing this perspective, Péter Bakonyi highlights the historical and cultural factors that shape negative attitudes toward mental illness in Hungary(15). The assessment of mental disorder always depends on the particular economic, cultural, and

sociological conditions of a given social period. He emphasizes the enduring impact of past political regimes, societal norms, and cultural narratives that have historically marginalized those with mental health conditions. Bakonyi points out that these attitudes are reinforced through media portrayals and a lack of public education on mental health, perpetuating a pervasive culture of misunderstanding and discrimination.

Mental illness has long been seen as an unknown aspect of human nature that is not well understood, often leading to misconceptions and discrimination. It was argued that the rise of psychiatry, medicalization of mental distress and mental illness in the 19th century in terms of diagnostic categories and syndromes contributed to the current stigma and discrimination(16-18). Goffman and numerous contemporaries, including Thomas Szasz, Ronald Laing and Michel Foucault, were critical of mental hospitals on the grounds that they further contributed to the stigmatization of patients. Their view was that the organization of psychiatry and institutionalization became even more prevalent in the stigmatization of patients than the mental illness itself. As a result, in the 1960s and 1970s, anti-psychiatry attitudes became widespread in public consciousness. The closure of asylums in the early 1990s led to a growing public opposition to community treatment for people with mental illness(19), and the impact of deinstitutionalization is not independent of national traditions and socio-cultural contexts(20). The deinstitutionalization process in Hungary has also faced challenges, with the stigmatization of patients being a major issue that has hindered progress toward the desired outcome(21). Stigma and discrimination have a pervasive influence at all levels of mental healthcare including treatment planning, administration and services(22).

Cultural context plays a crucial role in shaping stigma, particularly in how societies perceive and respond to mental illness. Fabrega's work is also relevant in this regard, as he argues that stigma surrounding mental illness is deeply embedded in cultural narratives(23). He also asserts that the medicalization of psychiatric conditions justifies the marginalization and exclusion of those affected. Neglecting culture and social context in mental health care can lead to negative effects on individual health care and mental health policy, systems, and services(24). This neglect can result in misdiagnosis, failure to recognize personal and social problems, uncertain treatment, undermining local understanding, and stigmatization(24). Stigmatization is a psychological and anthropological consequence of the human tendency to order the world by creating a

division between selfhood and otherness or the categories of “them” and “us”(1). Creating a dichotomy between “normal” individuals and those with mental health condition reinforces a fragile self-identity through the pathologizing mental illness, resulting in people with mental illness and their families developing a disapproval of themselves and becoming socially distanced from others(25). They internalize the stigma, and come to accept and believe the negative stereotypes about themselves as true. This belief can have a profound effect on the self-esteem, self-concept, and overall well-being of an individual(26). People may feel ashamed, guilty, or worthless as they come to believe these stereotypes are true reflections of themselves(6). This negative self-perception can exacerbate symptoms of mental illness and hinder recovery efforts and help-seeking behavior(27). The internalization of stigma also contributes to the “why try effect”, where individuals may question the point of trying to improve their mental health if they believe they will always be stigmatized(28, 29). This mindset can lead to a lack of motivation and engagement in self-care activities. Stigmatization and discrimination against people with mental illness are persistent issues with far-reaching consequences, affecting millions of lives worldwide(30). Research shows that people attempting to recover from mental illnesses often feel that they suffer from being labeled mentally ill as much as from the mental illnesses themselves(31). Individuals affected also experience disadvantages in academic achievement, daily life and even when accessing health care(32). One of the most significant consequences of mental health stigma is the reduced help-seeking behavior(33). Individuals may avoid seeking treatment due to fear of being judged, discriminated against, or labeled as “crazy” or “weak.” This can lead to delayed diagnosis and treatment, as well as increased symptoms and functional impairment.

1.4. Stigma in the healthcare system

1.4.1. The consequences of stigma from healthcare providers

People with mental health conditions do not only experience stigma from the general public when seeking medical help, but can also face stigma from healthcare providers including mental healthcare professionals(9, 10), despite growing evidence that discrimination and inequality affect the treatment plan and worsen physical and mental healthcare outcomes and serve as a barrier to recovery(11). Stigmatizing attitudes among

mental health care providers can result in disparities in treatment access and quality, leading to delayed diagnosis, inappropriate treatment decisions, and reduced adherence to medication and therapy(34).

Research suggests that the stigmatization of mental illness among healthcare providers can be attributed to a complex interplay of societal, institutional, and individual factors. As highlighted by Corrigan, societal stigma surrounding mental illness permeates professional domains, influencing the attitudes and behaviors of healthcare providers(35). Additionally, the hierarchical structure of healthcare systems may contribute to power differentials that perpetuate stigmatizing attitudes among providers(36). It has been demonstrated through research that stigma from healthcare providers can impair quality of life and life expectancy of service users and predict internalized stigma and the consequent disempowerment of the person(37). Furthermore, stigmatization within the healthcare system can contribute to self-stigma experienced by individuals with mental illness, exacerbating feelings of shame, self-doubt, and reluctance to seek help(38). This perpetuates a vicious-circle of stigma that further marginalizes individuals and impedes their recovery journey.

1.4.2. Evidence on stigma among psychiatrists toward people with mental illness

In several cases, mental health-related stigma in healthcare providers is the result of a lack of knowledge of mental disorders, false social beliefs, or a lack of direct contact with people with mental health conditions(39-44). Research findings from meta-analyses suggest that educational interventions focusing on the mental health of healthcare providers effectively reduced stigmatizing attitudes and improved knowledge, and boosted confidence in working with individuals with mental illness(45). Indeed, attitudes of mental health care providers and psychiatrists are expected to exhibit a lack of stigma toward individuals with mental illness, given their expertise in mental disorders and their regular interactions with such people on a daily basis. However, research indicates that it is not only somatic health care providers who stigmatize, but mental health professionals, including psychiatrists, also express stigma toward individuals with mental illness(46-49).

First of all, it is important to note that there has been limited research on mental health-related stigma among mental health professionals, particularly among

psychiatrists. The preponderance of evidence suggests that psychiatrists exhibit relatively lower levels of stigmatization than their counterparts in other medical specialties or the general population. For instance, a study in Switzerland revealed that psychiatrists exhibit a greater preference for community psychiatry for individuals with severe mental illnesses than for the general public(50). Nevertheless, there was no significant difference in the willingness for social interaction between the two groups. In another study involving Czech and Slovak medical students, those who expressed an interest in specializing in psychiatry demonstrated more positive attitudes toward patients and less social distance from individuals with mental illness compared to their peers(51). A recent study found that mental health care professionals, including psychiatrists, exhibited less stigmatizing attitudes than primary care practitioners in Bahrein(52). Furthermore, a study in Australia compared the stigmatizing attitudes of general practitioners, psychiatrists, and psychologists. The results showed that psychiatrists identified the symptoms in the case vignette as related to mental illness rather than personal weakness, indicating less stigma(53). However, they exhibited a greater preference for social distance from the person described in the vignette compared to psychologists. The study revealed that all of these health professionals showed less personally stigmatizing attitudes than those of the general public(53).

On the contrary, some studies have shown that psychiatrists exhibit more stigma than the general public. For instance, in contrast to the aforementioned Australian study, another study conducted 15 years prior found that psychiatrists were less likely than general practitioners and clinical psychologists to rate positive outcomes for a case vignette describing a person with schizophrenia(54). In the same study, all health professionals were more likely to rate negative outcomes and believe there would be discrimination for both depression and schizophrenia case vignettes than the general population. A similar result was found in a study conducted in Brazil, where psychiatrists exhibited stronger prejudices against schizophrenia than the general population(55). Similarly, in line with these findings, a more recent study focusing solely on investigating stigma among Brazilian psychiatrists toward individuals with schizophrenia, without comparing them to another population, categorized half of the sample into the high-stigma group(48).

Although psychiatrists generally maintain positive attitudes toward individuals with mental illness, research indicates that their attitudes may not consistently differ significantly from those of other healthcare professionals or the general population. As key members of healthcare teams, the attitudes of psychiatrists can play a significant role in shaping the internalized stigma experienced by their clients, which in turn can profoundly impact treatment outcomes. Moreover, given their specialized expertise, psychiatrists bear a responsibility to stand up against mental health discrimination, uphold ethical standards, and advocate for mental health policies. To effectively address mental health stigma within the psychiatric community, it is crucial to better understand the attitudes of psychiatrists and identify factors associated with less stigmatizing views. Furthermore, the lack of studies investigating these attitudes emphasizes the need for comprehensive research to provide valuable insights for targeted interventions to tackle stigma among psychiatrists.

1.5. Factors affecting stigmatizing attitudes of psychiatrists

Attitudes are inherently complex and multidimensional, shaped by several factors. Exploring these factors comprehensively can contribute to an overall picture and understanding, aiding the identification and development of widely applicable anti-stigma interventions and best practices. The more of them are identified, the more can be incorporated into anti-stigma programs and the identification of the most vulnerable individuals, thus making them worth targeting with interventions.

1.5.1. Personal experience of mental health conditions among psychiatrists

Research on the prevalence of mental illness among psychiatrists is limited, but suggests that they are not immune to these conditions. Studies have indicated that rates of depression, anxiety disorders, substance abuse, and burnout are relatively high among healthcare professionals in general, including psychiatrists(56). These challenges are further amplified among physicians due to stigmatizing attitudes toward mental disorders and barriers they face in seeking professional help within the medical profession(57). Additionally, there is growing evidence of an association between the chosen specialty and mental illness, as well as suicide risk. Studies have shown that psychiatrists and psychiatric trainees had higher rates of depression(58, 59) and substance misuse(60) than

other specialties. A 2019 review found that psychiatrists are among the specialists with a higher rate of suicide than others(61). A study conducted in 2013 found that 38% of a large sample of Brazilian psychiatrists (n=1414) sought help, and 25.3% of them received medical treatment for their own mental illness(47). A Turkish study found that 22.7% of a sample of psychiatrists had a lifetime history of psychiatric disease(62). The existing body of literature is not entirely consistent on how personal experiences with mental illness influence one's attitudes. On the one hand, shared experiences of mental illness can foster a sense of solidarity and support for individuals who have gone through similar struggles. Two recent studies suggest that psychiatrists who have been diagnosed or treated for mental illness hold less stigmatizing attitudes compared to those without such experiences(48, 62). These findings support the noteworthy association between personal history with mental illness and expressed stigma within the psychiatric community. Conversely, individuals who have experienced mental illness are able to internalize negative stereotypes(6, 36). This internalized stigma or the fear of being associated with negative stereotypes can adversely shape their attitudes toward others facing similar challenges. A study, for example, found that psychiatrists who have sought help for mental health conditions over their lifetime may face an increase in negative stereotypes(55). Interestingly, in the same study, while treatment for a psychiatric condition showed no significant association with stigma, seeking help for a condition did.

The limited available literature within the psychiatric community suggests that having a family member with a mental illness generally leads to positive attitudes. However, the frequency of contact with them can have a dual effect on stigma. A recent systematic review focusing on the attitudes, knowledge, and confidence of healthcare professionals, including psychiatrists, supported the notion that having acquaintances with lived experience of psychosis was associated with positive attitudes toward them(63). Additionally, two studies involving psychiatrists suggest that involvement of relatives is linked to less stigma toward mental illness(39, 62). In terms of contact frequency, however, a large study among Brazilian psychiatrists revealed that infrequent contact with a family member with mental illness resulted in lower levels of stigma than frequent contact or not having any family member with mental illness(47). Interestingly, a more recent study among Brazilian psychiatrists found no significant association between a family history of mental illness and their stigmatizing views(48).

1.5.2. The potential role of psychotherapeutic skills in shaping attitudes

The significance of non-stigmatizing attitudes in the context of psychotherapy cannot be overemphasized. Establishing an accepting and empathetic demeanor toward sufferers of mental health conditions serves as a cornerstone of effective therapeutic engagement. Moreover, addressing the pervasive issue of self-stigma and internalized shame to empower clients requires the therapist to adopt an accepting and stigma-free attitude. A number of psychiatrists are trained in various forms of psychotherapy and provide support to those seeking help. To date, only the aforementioned Turkish study has investigated the association between psychotherapeutic training and the attitudes of psychiatrists. The study revealed that such training was associated with less stigma toward people with mental illness(62). Similarly, in a study of drug abuse counselors, acceptance and commitment training, as well as multicultural training positively influenced attitudes and decreased the believability of stigma(64). Moreover, meta-analyses focusing on the perspective of clients have highlighted the importance of empathy-related constructs such as positive regard and affirmation in determining the success of psychotherapeutic interventions(65). The findings highlight the critical role of psychotherapeutic skills in patient care and in shaping the attitudes and behaviors of mental health professionals, which are paramount to ensure the quality of care provided. However, there is a notable lack of research studies on the relationship between stigma and psychotherapeutic activity.

1.5.3. The possible role of case discussion groups in attitude shaping

Case discussion groups offer clinicians the opportunity to obtain guidance or support with challenging cases. Through exposure to a variety of cases and experiences within these groups, healthcare professionals gain a deeper understanding of mental health conditions, thereby challenging stereotypes and misconceptions. Furthermore, these group settings provide opportunities for reflection and self-awareness, allowing participants to recognize and address their own biases and prejudices(66, 67). The influence of supervisors and peer support within these groups also play a significant role, as witnessing colleagues demonstrate empathy and respect toward patients with mental illness encourages the adoption of similar attitudes(68). One well-known relationship-centered group approach is the Balint group, which facilitates a more profound

understanding of the clinical case or work-related interpersonal situation and emotional content in several ways. The literature suggests that Balint groups are beneficial for the provider-patient relationship overall. A systematic review highlights their effectiveness in enhancing empathy, acceptance, and communication skills(69). These groups facilitate a deeper understanding of patients and enhance emotions among psychiatric trainees(70). Furthermore, participation in Balint groups has been found to improve burnout symptoms(69), specifically addressing emotional exhaustion and depersonalization(55). These symptoms, which often manifest in a lack of emotional connection, negative attitudes and cynism, are fertile grounds for stigma. Research indicates that these symptoms of burnout have been associated with increased stigma among mental health professionals(71, 72) and psychiatrists(62). In essence, these group settings cultivate empathy and understanding, which can significantly contribute to more favorable attitudes of mental health professionals toward individuals with mental illness.

1.5.4. The influence of the attitudes of close colleagues on the attitude of the individual

Social attitudes are contagious in nature and can be transmitted through verbal communication and nonverbal cues(73-75). They permeate social interactions and shape collective perceptions, influencing how individuals perceive and interact with one another, thereby contributing to the dynamics of social relationships and group dynamics. Negative emotional reactions, as per Link and Phelan's stigma model, can lead to separation, loss of status, and discrimination(1, 76). Changing implicit attitudes toward stigmatized individuals, as shown by McConnell et al., can be challenging even when they perform positive acts(75). Conversely, individuals belonging to highly valued groups can exhibit negative behavior and still receive implicit approval from others, underscoring the influence of group association cues on social dynamics.

The prevailing atmosphere in mental health settings, including institutional policies and efforts to reduce stigma, is intertwined with broader societal attitudes toward mental illness and cultural norms, shaping the attitudes of healthcare workers and the overall work environment. Close colleagues significantly influence the mindset of an individual within the workplace, affecting their willingness to share their own lived experiences and their attitudes toward patients(77). When individuals are part of a team that fosters acceptance and understanding, they are more inclined to open up about their

mental health struggles in the workplace. Andrews et al. emphasized the importance of a stable work environment in fostering the trust required for healthcare professionals to feel comfortable communicating their weaknesses and vulnerabilities(78). This, in turn, improved their overall well-being in the workplace, instilling a sense of value and enabling them to provide more compassionate care to others.

A scoping review suggests that fostering a culture of rewarding care and teamwork, underpinned by a supportive organizational culture, has a positive impact on wellbeing, enabling high-quality care(79). A qualitative study in the United Kingdom found generally positive attitudes among non-psychiatry healthcare professionals toward colleagues with mental illnesses, albeit with some reporting negative attitudes from others(80).

The absence of direct studies focusing on psychiatrists in relation to the role of colleagues and organizational factors in influencing stigma underscores the need for further research. Targeted investigations into the interactions of psychiatrists with colleagues could yield insights into how workplace culture affects attitudes and stigma. Although existing research is predominantly focused on the general population or mental health professionals, its findings still provide valuable insights for psychiatrists. Fostering a supportive work environment remains crucial for the well-being of healthcare professionals and the provision of compassionate care. Acknowledging the influence of societal attitudes and organizational culture is essential for addressing stigma and promoting positive attitudes toward people with mental illness.

1.6. Mental health-related stigma and stigma research in Hungary

Little is known about stigma toward people with mental illness in Hungary. Only a handful of studies have investigated mental health-related stigma, and all of them have examined stigma from the viewpoint of people affected. According to the recent Global Burden of Disease study, Central and Eastern Europe bears one of the highest mental and substance use burdens worldwide(81). Furthermore, the healthcare system in this region is less developed and underfunded, and the resources available are inefficient, with a substantial burden on healthcare providers(82). In Hungary, there is an ongoing deinstitutionalization of people with severe mental illness and a significant shortage of psychiatric staff, including nurses, social workers, and psychiatrists. The health system

as a whole is underfunded. The results of a review on stigma in Central and Eastern European countries for Hungary highlight the need for stigma research, as there is a lack of available studies in this region(83). The review suggests that the level of stigma is alarmingly high among the general public and health professionals in these countries.

Hungary is categorized as a Western country in stigma research when considering countries globally; however, its post-Soviet history cannot be overlooked. Kovai's monograph highlights how political ideologies shaped mental health frameworks, suppressing dissent and pressuring professionals to conform to state interests. Psychiatric diagnoses were utilized as tools for political control, labeling nonconformists as mentally ill. Since the transition to democracy, there has been a gradual shift toward more humane approaches to mental healthcare.

In Hungary, there is limited research on the measurement of mental health-related stigma, both in the general public and within the healthcare system. The results of a multicentric study, which included 777 people with schizophrenia, showed that stigma perceived by the participants was higher in the post-communist countries, including Hungary(84). From the point of view of the public, a nationally representative serial cross-sectional study found no significant change in preferences for social distance over 15 years between 2001 and 2015 in Hungary(85). Whereas desires for social distance were more pronounced among women, individuals with lower levels of education, and those less familiar with mental illness, these factors played a minor role in shaping attitudes, without any substantial explanatory power. In a multi-site qualitative study from seven countries, including service users and primary care practitioners, Hungary was one of the countries where service users experienced limited stigmatization or discriminatory behavior from their primary care practitioners(86). The study also reported exhaustion and burnout among healthcare workers, whereas it highlighted the positive impact of case discussions on maintaining the well-being of professionals in Hungary. However, the study design did not allow for an investigation into the relationship between stigma and case discussions. Notably, no studies have been conducted to date on the stigmatizing attitudes of psychiatrists toward people with mental illness in Hungary.

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2. OBJECTIVES

The general aim of this study was to explore and collect information about the stigma of Hungarian psychiatrists toward people with mental illness and to identify factors related to psychiatrist attitudes that could be targets of anti-stigma interventions. The thesis sought to address the following:

1) Firstly, we aimed to investigate the psychometric properties of the Opening Minds Stigma Scale for Health Care Providers, the stigma measurement we used in the study. We sought to test its Hungarian version by running confirmatory factor analyses on the three-dimensional model proposed by the scale authors. In cases where the fit indices were not within the acceptable range, we would run an exploratory factor analysis.
2) Secondly, after having an appropriate Hungarian version of the stigma measurement, we aimed to test our hypotheses on the stigmatizing attitudes of psychiatrists.

On the basis of the current literature, the specific hypotheses were as follows:

1) The lived experiences of psychiatrists are associated with more positive attitudes toward people with mental illness.
2) Experience in psychotherapy is related to less stigmatizing attitudes.
3) Participation in case discussion and supervision or Balint groups is associated with more favorable attitudes.
4) The attitudes of surrounding psychiatry colleagues affect the attitudes of psychiatrists toward people with mental illness.

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3. METHODS

3.1. Study design

One aim of this study was to examine the psychometric properties of the Hungarian translation of the OMS-HC and develop its Hungarian version that would allow the measurement of stigma toward people with mental health problems among Hungarian psychiatrists. To this end, a large sample of general adult and child and adolescent psychiatric trainees and specialists was surveyed using an anonymous online questionnaire in a cross-sectional study design.

Participants were included in the study if they worked in Hungary and were trainees or specialists in adult or child and adolescent psychiatry and were excluded if they did not work in Hungary, were not being trained or were not specialists in adult or child and adolescent psychiatry, or they were medical students. The survey started with a short set of demographic and profession-related questions with inclusion items embedded including age range, gender, years of experience in psychiatry, type and location of workplace, qualification status, field of psychiatry, active psychotherapeutic practice, attitudes of close colleagues, number of working hours per week the participant worked with patients. Subjects who did not meet the inclusion criteria or fulfilled the exclusion criteria were guided automatically to the end of the survey. The sociodemographic section was followed by questions about lived experiences of participants, such as having friends or family members with mental illness, lifetime help-seeking behavior in relation to their mental health problems, participation in psychotherapy for any reason, and medical treatment for any psychiatric problems, stigma experienced for being a psychiatrist and attitude toward and accessibility to case discussion, supervision or Balint groups. The survey continued with the main questionnaire, the OMS-HC, which measured stigmatizing attitudes.

Before the survey was more widely disseminated, a pilot study was conducted in which a group of seven psychiatrists completed the survey and provided feedback as a pilot study. On the basis of their suggestions, minor modifications were made to the survey questions, e.g., using age range instead of exact age to guarantee the anonymity of the participants due to the shortage of psychiatrists in some areas.

Prefer not to answer was an answer choice for all questions on lived-experiences not to cause discomfort to the participants in the sharing. Data were collected via the online SurveyMonkey platform between October 2019 and December 2019. The research team contacted 52 adult and 17 child outpatient psychiatric services as well as 50 adult and 10 child inpatient psychiatric facilities via email and telephone, serving both urban and rural areas in Hungary. We contacted the heads of the departments directly and requested them to forward the survey link to their psychiatry colleagues. We also disseminated the survey link to the questionnaire in professional groups on social media and published it in the newsletters of the Hungarian Psychiatric Association and the Hungarian Association of Psychiatric Trainees to increase the number of subjects.

For the test-retest reliability and concurrent validity measures, a subsample of n=31 individuals completed the survey twice using aliases to ensure matchability and protect anonymity.

3.2. Measurements

3.2.1. The primary outcome measure: the Opening Minds Stigma Scale for Healthcare Providers

3.2.1.1. Scale development, and factor structure of the OMS-HC worldwide

The OMS-HC is a self-report measurement designed to measure stigma among healthcare providers toward people with mental health problems by expressing their feelings and opinions about them. Originally, the scale contained 20 items and a two-factor solution (attitude and disclosure) best described its factor structure(87); however, it needed to be revised due to the lack of an important dimension of social distance. The new version of the scale was tested on a large sample of different healthcare providers(88). It was shortened to 15 items loaded to 3 factors that made up the three subscales of Attitude, Disclosure and help-seeking, and Social distance.

The OMS-HC, developed to evaluate anti-stigma programs for healthcare workers, is one of the most widely used stigma questionnaires. Its factor structure was investigated and considered to be a valid and adequate stigma measurement in several countries (See Table 1). The majority of the research groups used exploratory approaches and found a 3-dimensional structure, the Brazilian version alone included four factors

with the introduction of the new “negative view” dimension to the scale(89). As presented, our research group(90) and the Brazilian researchers(89) further explored the factor up to a higher-order bifactor solution. In three of the eight available studies, structural equation modeling (SEM) or its exploratory version (ESEM) was used to test the theoretical models. These approaches have several advantages, including their ability to handle measurement errors, assess model fit, estimate latent variables, and evaluate causality. Moreover, the latter allows for more accurate correlations between latent factors in favor of data representation, and its bifactor version also allows for cross-loadings between elements of a hierarchical structure(91). An extensive European collaboration led to testing and validation of the factor structure of the scale in 29 countries, where the bifactor ESEM approach was found to be the best-fitting model of all other proposed hypothetical structures(92). Three research groups, including ours, eliminated an item of the scale due to its poor factor loading(90, 93, 94).

Table 1. Overview of factor analysis results on the 15-item OMS-HC in international studies. Item numbers correspond to a 15-item scale. * Austria, Albania, Azerbaijan, Belarus, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, Montenegro, Netherlands, Portugal, Russia, Serbia, Slovakia, Slovenia, Spain, Switzerland, Turkey, the United Kingdom, Ukraine. Own table(90) updated with novel works since publication.

Research group	Investigated population	Method of estimation	Results		Country
			Structure	Model fit indices	
Modgill et al., 2014(88)	health care and social workers and medical students *n* = 1305	PCA	- 3-dimensional structure	-	Canada
Destrebecq et al., 2017(93)	healthcare students *n* = 561	EFA	- 3-dimensional structure - item 15 has a poor factor loading on the Attitude factor	-	Italy
Chang et al., 2017(94)	nursing and medical students *n* = 1002	ESEM	- 3-dimensional structure - item 1 was deleted - items 4, 5, and 12 showed strong cross-loadings - items 5, and 12 loaded on different factors	RMSEA = .069 CFI = .948 TLI = .909	Singapore
Sapag et al., 2019(95)	primary healthcare workers *n* = 803	SEM	- 3-dimensional structure	RMSEA = .052 CFI = .832 TLI = .798	Chile
Ori et al., 2020(90)	child and adult psychiatrists *n* = 211	EFA, CFA	- higher order structure with a general factor and 3 specific factors - item 11 was reduced - items 13, and 14 showed crossloadings	RMSEA = .025 CFI = .961 TLI = .944	Hungary

Zuaboni et al., 2021(96)	staff in general inpatient psychiatric wards ($n = 392$)	EFA, CFA	- 3-dimensional structure - items 8, 11, and 13 showed cross-loadings	RMSEA = .04 CFI = .92	Germany and Switzerland
Carrara et al. 2023(89)	various health professionals (nurses, technicians, community health workers) $n = 199$	EFA	- bifactor structure with a general and four specific factors (the new negative view dimension was introduced) - 16 items (the 20-item version was used)	RMSEA = .04 CFI = .90 TLI = .87	Brazil
Ori et al., 2023(92)	adult and child psychiatrists $n = 4245$	bifactor ESEM	- bifactor structure with a general factor and three specific factors - the program failed to verify the structure in Albania, Azerbaijan, and Slovakia	on the pooled sample RMSEA = .045 CFI = .981 TLI = .960	32 countries*
Valdivia Ramos et al., 2023(97)	students and professionals in medicine and nursing $n = 447$	CFA	- 3-dimensional structure	RMSEA = .050 CFI = .970, TLI = .962 SRMR = .054, NFI = .950 PNFI = .742	Mexico

3.2.1.2. Scoring

Initially, the 15-item version retained the order and original numbering of the items (1 to 20, without listing items 2, 5, 11, 15, and 16); however, in new validation studies and due to the widespread use of the scale, many research groups began recoding the scale items from 1 to 15. Both ways of numbering will appear in this thesis.
The 15 statements about feelings, thoughts, and beliefs about people with mental illnesses are scored on an ordinal scale from 1 to 5. Items where the respondent strongly agreed with the statement were given a score of 5, whereas those who strongly disagreed were given a score of 1. Items 2, 6, 7, 8, and 14 (items 3,8,9,10, and 19 on the original scale) are reverse-coded as strong agreement assigned a score of 1, whereas strong disagreement is assigned a score of 5. The total score ranging from 15 to 75 points is calculated by summing the response values for each item, indicating the overall stigmatizing attitudes of the participant. It is also possible to calculate subscales for Attitude (ranging from 6 to 30 points), Disclosure and help-seeking (from 4 to 20 points) and Social distance (from 5 to 25 points). A higher subscale and total score indicate a more stigmatizing attitude.

3.2.1.3. Translation procedure of the OMS-HC

The English version of the OMS-HC was translated into Hungarian by a psychiatrist with a good command of English. The preliminary translation was followed by a translation back into English by a qualified specialist in English medical and health sciences communication. A third healthcare professional checked the back-translation against the original source, and then an iterative procedure was used to resolve ambiguities and discrepancies between the original and the back-translated versions of the scale. The concept check was then performed by a focus group of six psychiatrists. The final Hungarian version (See Supplement 1) was included in the survey.

3.2.2. Mental Illness: Clinician's Attitudes-4 (MICA-4)

We chose the MICA-4 scale for convergent validity measures(98). Similarly to the OMS-HC, it is also a self-reported stigma scale for healthcare workers. It is a continuous measurement of stigma with 16 items that constitute a total score ranging from 16 to 96 points. The scale was translated within the framework of the National Anti-

stigma Program in collaboration with the Indigo Network, a well-known anti-stigma program (http://www.indigo-group.org) and follows its guidelines.

3.3. Ethical considerations

Ethics approval for the study was granted by the Regional and Institutional Committee of Science and Research Ethics of Semmelweis University, Budapest, Hungary (SE-RKEB: 189/2019). The study was conducted in accordance with the principles of the Declaration of Helsinki. All participants gave informed consent via the online survey.

3.4. Statistical approach

Descriptive statistics were used for sample characteristics in terms of sample size (n) and percentage (%). The threshold for statistical significance was reported at $p < .05$. Data analyses were performed by using IBM SPSS 25(99), and MPlus 6.12(100) and FACTOR v10.9.02(101).

3.4.1. Factor analyses

Factor analyses consisted of the following steps: 1. confirmatory factor analysis (CFA) for the three-correlated-factor model proposed by the scale authors, 2. determination of the number of factors to be extracted by considering multiple methods, 3. exploratory factor analysis (EFA) to determine the items that make up each subscale, 4. confirmatory factor analysis to compare all possible versions of the scale and to confirm the structure suggested by the parallel analysis and the EFA outcome.

To determine the number of possible dimensions, a combination of methods is recommended, as convergence of method outcomes almost always ensures factors that can be correctly retrieved(102). Therefore, we considered multiple methods to determine the number of factors to be extracted, including Kaiser's criterion, Cattell's scree-test, explained variances and parallel analysis. Kaiser's criterion is a general approach in which factors with eigenvalues ≥ 1 are retained and factors with eigenvalues < 1 are eliminated, as factors with eigenvalues greater than one explain more variance than a single observed variable, indicating their potential significance in the model(103).

Cattell's scree plot is a graph that plots the eigenvalues (y-axis) of all the factors (x-axis) listed in decreasing order of their eigenvalues(104). The rule of thumb is to keep all factors above the inflection point, where the curve begins to level off and exclude any factors below this point to distinguish the significant factors from those that explain minimal variance. As the curve may not be entirely flat, there may be several points of inflection, which means that determining the actual cut-off point may be subjective. The parallel analysis has shown the best performance in simulation studies and has been found to outperform traditional methods such as the Cattel test and Kaiser's criterion(105). This is a statistical method that compares the eigenvalues (the variance associated with the component) obtained from the data matrix with those produced by a Monte-Carlo simulated matrix of the same size from random data(106). The parallel analysis was based on a minimum rank factor analysis using polychoric correlations to determine communality estimates, so that the amount of unexplained common variance is minimized for an already defined number of common factors, with the restriction that the reduced correlation matrix is Gramian.

Having determined the suggested number of factors, we can move forward to identify which items belong to each factor. The appropriate method for this is called exploratory factor analysis (EFA). Prior to EFA, Bartlett's test of sphericity was performed to ensure that the correlation matrix was significantly different from the identity matrix and correlations between variables were all zero (p-value should be < .05), whereas the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was calculated to ensure that the data were appropriate for factor analysis(107). According to Kaiser's criteria, KMO > .9 is marvellous, .80 - .90 is meritorious, .70 - .80 is middling, .60 - .70 is mediocre, .50 - .60 is miserable, and less than .5 is unacceptable(108); accordingly, KMO should be > .60 for factor analysis(107).

As it did not require normally distributed data, the unweighted least-squares method with geomin rotation, as well as the hierarchical Schmid-Leiman solution were applied to identify the factor structure of the scale in the EFA (109).

Confirmatory factor analysis (CFA) was performed to test whether the original and all hypothesized models were consistent with our data. A robust estimator (maximum likelihood estimation with robust standard errors, mean and variance adjusted, MLMV) was used, which was suitable for non-normal data as it corrected for standard errors of

the parameters. To evaluate the model fit, we calculated the following indices and followed the generally accepted criteria: chi-square (χ^2), degree of freedom (*df*), χ^2/df (2.0-5.0)(107), root mean square error of approximation (RMSEA, < .06) (110), comparative fit index (CFI, > .95)(110), and Tucker-Lewis Index (TLI, > .95)(110).

3.4.2. Validity of the factor structure

Intercorrelations between specific factors and between the general and the specific factors were assessed by using Spearman's correlation. Calculating intercorrelations between factors in psychometric testing is important to determine whether the factors are distinct yet related, ensuring the scale accurately measures separate constructs without excessive overlap.

3.4.3. Concurrent validity

Concurrent validity is a subtype of criterion validity, defined as the degree of agreement between two simultaneous measurements, the scale tested, and a criterion-related standard. As there are no validated stigma measurements in Hungary, we used the MICA-4 scale because it measures the same construct. Spearman's correlation was applied between the total scores of the two scales due to the lack of a normal distribution of the data, and by using the following criteria for Spearman's rho: r = .00 - .19 very weak, .20 - .39 weak, .40 - .59 moderate, .60 - .79 strong and .80 - 1.00 very strong(111).

3.4.4. Reliability measures

3.4.4.1. Model-based reliability

The coefficient omega hierarchical (ωH), the explained common variance (ECV), and the percentage of uncontaminated correlations (PUC) were used to assess model-based reliability. These indicate that the total and subscale scores genuinely represent the target constructs of interest. Omega is calculated from the model-based factor loading matrix, and ωH summarizes the observed amount of variance explained by the general factor(112). Omega values above .7 are considered acceptable(112). To evaluate ωH, we applied what Reise et al. suggested: "it should be greater than .50, and ideally more than .75" (113). ECV indicates the unidimensionality of the common variance(114). PUC and ECV are usually used together to test whether a model is biased by forcing

multidimensional data into a unidimensional model(115). ECV values higher than .7 to .8 indicate sufficient unidimensionality; its value closer to 1 reflects a stronger general factor(113).

Furthermore, in the case of PUC values > .80, ECV values seem secondary in predicting bias. If PUC values are < .80, general ECV values are > .60, and ωH values are > .70, the unidimensional nature of the scale cannot be rolled out(113).

3.4.4.2. Internal consistency

Cronbach's α coefficient, a traditional measure of internal consistency calculated by assessing the average correlation between all items in a test and the total test variance, can be severely biased as it overestimates the reliability of the general factor in bifactor structures(116, 117). For this reason, model-based reliability measures such as coefficient omega-hierarchical, are superior indicators to Cronbach's α coefficients in multidimensional measurements(117, 118). Despite the fact that Cronbach's α coefficients are rarely appropriate indicators of reliability, they were still provided for the correlated factor model so that our results can be compared with the findings of other studies. A value of α is acceptable above .70(119).

3.4.4.3. Test-retest reliability

Test-retest reliability reflects variation in measurements of the same scale administered twice under the same conditions over a period of time. The intraclass correlation coefficient (ICC) and its 95% confidence intervals were calculated to describe test-retest reliability using a mean-rating (k = 2), absolute-agreement, two-way mixed-effects model (ICC < .50 is considered poor, .50 to .75 moderate, .75 to .90 good, > .90 is considered excellent correlation)(120).

3.4.5. Regression analysis and multigroup comparisons

We applied non-parametric tests and presented the median and interquartile ranges (IQR) as the majority of our data were non-normally distributed. Multiple linear regression analysis was performed using a stepwise method in 10 steps to determine which variables can predict the OMS-HC total scores. The OMS-HC total and subscale scores were used as dependent variables and sociodemographic and professional variables as independent variables. Indicators include standardized betas, *p*-values, 95% confidence

intervals, and explained variances (R^2). R^2 indicates the proportion of variation in stigma scores that is determined by personal and professional factors predicting the regression model. For subgroup comparisons, we performed Mann-Whitney U using the Monte Carlo simulation method and Kruskal-Wallis tests based on the number of groups: Mann-Whitney U was used for comparing two groups, while Kruskal-Wallis was applied when comparing three or more groups. Both tests are non-parametric, making them appropriate for data that do not meet normality assumptions.

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4. RESULTS

4.1. Sample characteristics

We received responses from a total of *n* = 238 psychiatrists. As the completion rate was 89%; we used data from *n* = 211 participants who completed the entire survey for the psychometric part and all subsequent analyses. Demographic and professional data of the sample can be found in Table 2. Most of the participants were female (*n* = 161, 76%) with young colleagues aged between 24 and 35 years overrepresented in the sample (*n* = 114, 54%), with 0-5 years of experience (*n* = 84, 40%). Nearly two thirds of them worked in general adult psychiatry (*n* = 135, 64%), and more than half of the sample were qualified as specialists in psychiatry (*n* = 121, 57%). The majority of the participants worked in inpatient care (*n* = 139, 66%), with nearly two-thirds working in Budapest at the time of the study (*n* = 131, 62%).

Table 2. Sociodemographic characteristics of participants. Published own table(121).

Variables	Answer choice	n (%)
Age group (years)	24-35	114 (54)
	36-45	34 (16)
	46-55	38 (18)
	56-65	16 (8)
	66-75	9 (4)
Gender	Male	50 (24)
	Female	161 (76)
Professional group	Trainee	90 (43)
	Specialist	121 (57)
Location of workplace	Budapest	131 (62)
	County capital	61 (29)
	City	10 (5)
	Town	9 (4)
Type of practice where they work most of their working hours	Inpatient care	139 (66)
	Outpatient care	55 (26)
	Exclusively private practice	9 (4)
	Daycare	5 (2)
	Other	3 (2)

4.2. Investigation of the factor structure of the OMS-HC

First, we tested the three-factor model of the OMS-HC proposed by Modgil, author of the scale. Table 3 shows the fit indices for all models tested. Despite the acceptable absolute indices of the three-correlated-factor model, as its relative fit indices, the CFI and TLI were lower than the acceptable range, we decided to further investigate the structure of the scale by performing an EFA. Bartlett's spherical value was statistically significant ($p < .0001$) and the KMO measure of sampling adequacy was .718, indicating that the data were suitable for EFA.

Table 3. Results of the confirmatory factor analysis of the OMS-HC. The confirmatory factor analysis was performed using the maximum likelihood estimation with robust standard errors and a mean- and variance adjusted. Published own table**(90)**.

	χ^2	χ^2/df	RMSEA	95% CI of RMSEA	CFI	TLI
Original 15-item scale	129.602	1.45	.048	.030-0.065	.818	.780
Unidimensional 15-item scale	173.562	1.93	.066	.051-0.081	.642	.583
Three correlated factors based on EFA results (15 items)	123.479	1.45	.045	.024-0.062	.844	.812
Three correlated factors with the deletion of 1 item based on EFA results (14 items)	103.475	1.39	.043	.021-0.062	.867	.836
Bifactor solution (14 items)	71.055	1.13	.025	0-0.050	.961	.944

4.2.1. Determination of the number of factors to extract

Kaiser's criterion and Scree test were used to determine the number of initial unrotated factors to be extracted. Fifteen linear components were identified within the data set prior to extraction. After extraction, the initial eigenvalues of the first five

components exceeded one. They were 3.176, 1.554, 1.538, 1.173 and 1.074, accounting for 21.172%, 10.361%, 10.255%, 7.823% and 7.157% of the variance, respectively. The scree-plot is shown in Figure 1. It seems to have two inflection points: one at eigenvalue 2 and the other at eigenvalue 4.

As Kaiser's criterion and the Scree test yielded ambiguous results for the number of factors to be retained, we conducted a parallel analysis, which is considered as the golden standard for factor retention(122). Specifically, we performed a parallel analysis using 500 randomly generated correlation matrices employing polychoric correlations in order to determine the appropriate number of factors to extract. The results of the parallel analysis revealed that three factors accounted for 25%, 11%, and 10% of the variance, altogether they explained 46% of the total variance. The corresponding eigenvalues were 3.75, 1.64, and 1.56, respectively. Although most of the variance was explained by the first factor, which may raise the question of a unidimensional structure, the parallel analysis suggested the extraction of three factors. We decided to proceed with three factors as they provided a sufficient amount of variance; however, to examine all possible solutions, we also tested the unidimensional model using CFA (For CFA results, see Table 3).

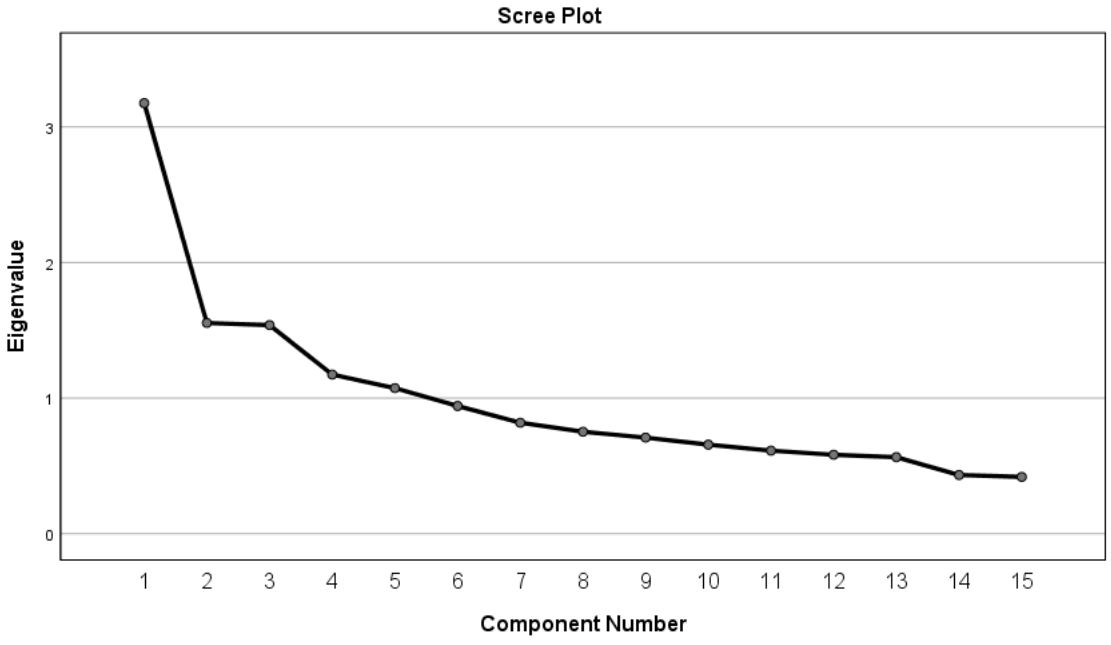

Figure 1. Scree plot representing eigenvalues and number of components

(unpublished own figure)

4.2.2. Exploratory and confirmatory factor analyses

We also performed EFA using the unweighted least-squares method with geomin rotation and a hierarchical Schmid-Leiman solution as well. (For factor loadings, see Table 4) The results indicated three relatively distinct dimensions using both methods, with acceptable factor loadings and some cross-loadings. The Schmid-Leiman solution revealed the factor loadings of the bifactor structure. Items 13 and 14 (originally items 18 and 19) showed severe cross-loadings on different factors than would have been assumed. In addition, due to a poor loading on each factor, we decided to remove item 11 (originally item 14) from the scale, and excluded it from any further analyses.

In the next step, we evaluated the model fit by performing CFA for all proposed models: the unidimensional, the three correlated factor model, the same with deleting the questionable item 11 (item 14 on the original scale) and the bifactor solution for the 14-item version (see Figure 2) with a general factor and three specific factors. Table 3 shows that the fit indices of the unidimensional model were far from the predefined ranges. The absolute fit indices (χ^2/df, RMSEA) of the three-factor solutions were acceptable; however, their incremental fit indices (CFI and TLI) were lower for both in the 15 and in the 14-item solution. However, the indices of the 14-item model were found to be slightly closer to the acceptable range. As presented, the bifactor solution was considered the most appropriate model and showed the best fit of all, as all of its fit indices showed a good fit, and were in the predefined ranges.

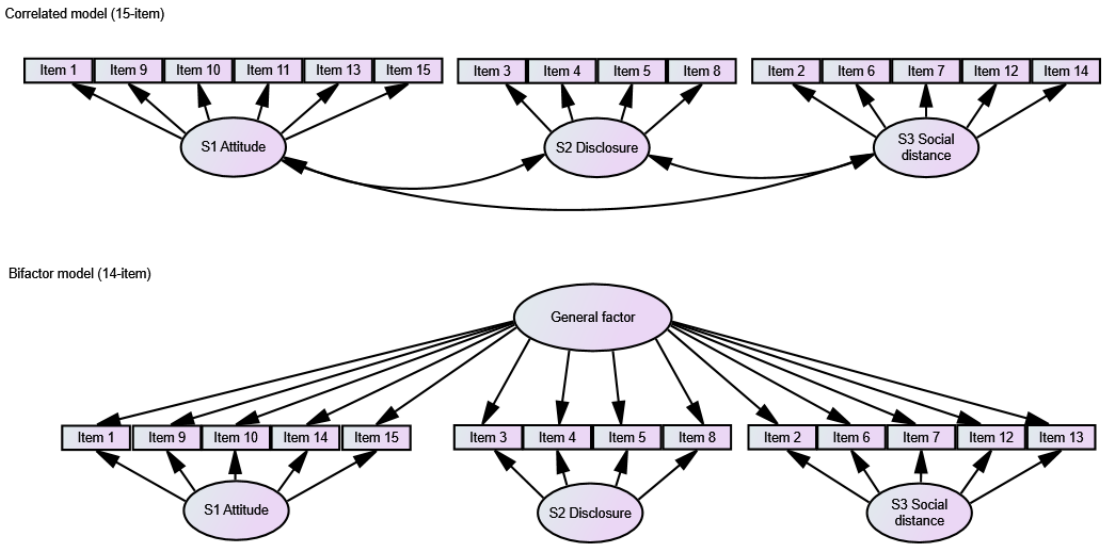

Figure 2. The correlated model of the 15-item version proposed by the authors of the scale and the bifactor model of the 14-item version of the OMS-HC (unpublished own figure)

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Table 4. The factor structure of the 15-item version of the OMS-HC. Outcomes of the exploratory factor analysis using the unweighted least squares method with geomin rotation and the Schmid-Leiman solution. Factor loadings higher than .3 are highlighted in bold. Published own table**(90)** – original item numbers were added here.

Items	Original item numbering	Original subscale	Unweighted least squares method			Schmid-Leiman solution			
			F1 (Disclosure)	F2 (Social d.)	F3 (Attitude)	F1 (Disclosure)	F2 (Social d.)	F3 (Attitude)	G
3	4	Disclosure	**.597**	.040	.127	**.560**	-.113	-.032	.279
4	6	Disclosure	**.549**	.233	.211	**.459**	.052	.041	**.410**
5	7	Disclosure	**.526**	.072	.245	**.486**	-.077	.087	**.354**
8	10	Disclosure	**.499**	.275	.065	**.393**	.188	-.096	**.369**
2	3	Social distance	.024	**.474**	.247	-.097	**.367**	.172	**.390**
6	8	Social distance	.097	**.501**	.183	-.054	**.432**	.048	**.376**
7	9	Social distance	.168	**.694**	.100	.038	**.551**	-.065	**.454**
12	17	Social distance	.273	**.565**	.048	.098	**.467**	-.077	**.413**
13	18	Attitude	.064	**.319**	.269	-.040	.263	.222	**.381**
1	1	Attitude	.081	.051	**.430**	.018	-.033	**.326**	.251
9	12	Attitude	.141	.278	**.411**	.016	.131	**.373**	**.430**
10	13	Attitude	.095	.029	**.545**	.008	-.187	**.522**	.270
14	19	Social distance	.094	**.322**	**.447**	-.034	.180	**.343**	**.412**
15	20	Attitude	.192	.054	**.490**	.056	-.013	**.419**	**.371**
11	14	Attitude	.186	.181	.248	.114	.078	.147	.270

4.3. Intercorrelations between the general and specific factors

We found strong correlations between the general factor and the specific factors: (general factor and Attitude: $r = .68$, $p < .0001$; general factor and Disclosure and help-seeking: $r = .69$, $p < .0001$; general factor and Social distance: $r = .73$, $p < .0001$). A statistically significant correlation was detected between the three specific factors: (Attitude and Disclosure and help-seeking: $r = .22$, $p = .002$; Attitude and Social distance: $r = .33$, $p < .0001$; Disclosure and help-seeking and Social distance: $r = .24$, $p < .0001$).

4.4. Concurrent validity measure

Concurrent validity was assessed by simultaneously completing the MICA-4 scale. A statistically significant strong positive correlation was found between the total scores of both questionnaires (Spearman's *rho* = .68, $p < .0001$).

4.5. Reliability measures

To allow the reliability of the scale to be compared with other studies, we also calculated the Cronbach's α coefficients and omega values for the three correlated-factors model: total score α = .73, Attitude α = .54, Disclosure and help-seeking α = .63, and Social distance α = .66.

To verify the reliability of the bifactor model, we tested its model-based reliability. This methodology represents the more rigorous approach to determining reliability, whereby the outcomes of factor analysis are taken into account and the general and specific factors are separated. Poor model-based reliability was found for both the general factor, and the specific factors: general factor (ECV = .43, ω = .80, ωH = .56), Attitude (ECV = .18, ω = .66, ωH = .37), Disclosure and help-seeking (ECV = .19, ω = .68, ωH = .44), and Social distance (ECV = .19, ω = .72, ωH = .37). The PUC value was .71 for the bifactor model with the three specific factors.

Test-retest reliability was measured on a subsample of participants (n = 31) who completed the survey twice. The median follow-up period was one month (*Median* = 28 (IQR = 26-30) days). As shown in Table 4, test-retest reliability was excellent for the general factor and good for all specific factors between the two completions of the OMS-HC.

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Table 4. Test-retest reliability measures and intraclass correlation coefficients for all factors. Published own table**(90)**.

Dimension	ICC	95% CI of ICC
Attitude	.90	.80 - .95
Disclosure and help-seeking	.88	.76 - .94
Social distance	.84	.66 - .92
Scale	.95	.89 - .97

4.6. Lived experiences of psychiatrists and measurement of stigma among them

4.6.1. Lived experiences of participants

As shown in Table 5, almost two-thirds (59%) of the sample had a friend or family member affected by mental health condition; 46% of them sought help, and one in five psychiatrists (19%) received medical treatment for any mental health condition in their lifetime. Three-quarters of the sample (74%) has experience in psychotherapy.

Table 5. Lived experiences of participants. Where the percentages were less than 100%, the participant chose not to answer the question in the other cases. Published own table(121).

Variables	Answer	n (%)
Ever experienced negative discrimination on the grounds of working as a psychiatrist	Yes	91(43)
	No	119 (57)
Having friends or family members with mental illness	Yes	124 (59)
	No	77 (36)
	I do not know	9 (4)
Ever sought help for mental health conditions	Yes	98(46)
	No	111(53)
Ever received medical treatment for any psychiatric conditions	Yes	41 (19)
	No	169 (80)
Ever been participating in psychotherapy for any reason	Yes	156 (74)
	No	50 (24)

4.6.2. Distribution of responses for the scale items

Figure 3 shows the responses for each question in the OMS-HC. Respondents tended to have a positive attitude toward people with mental health problems, as responses for both attitude and preferred social distance dimensions skewed toward positive responses. The results for disclosure and help-seeking statements were closer to a uniform distribution. One half of the subjects agreed, whereas the other half was neutral or disagreed with the following statements: “I would be reluctant to seek help if I had a mental illness” and “If I were under treatment for a mental illness, I would not disclose this to any of my colleagues”. By contrast, 73% of the participants would tell their friends, and more than half did not see themselves as weak if they had a mental illness.

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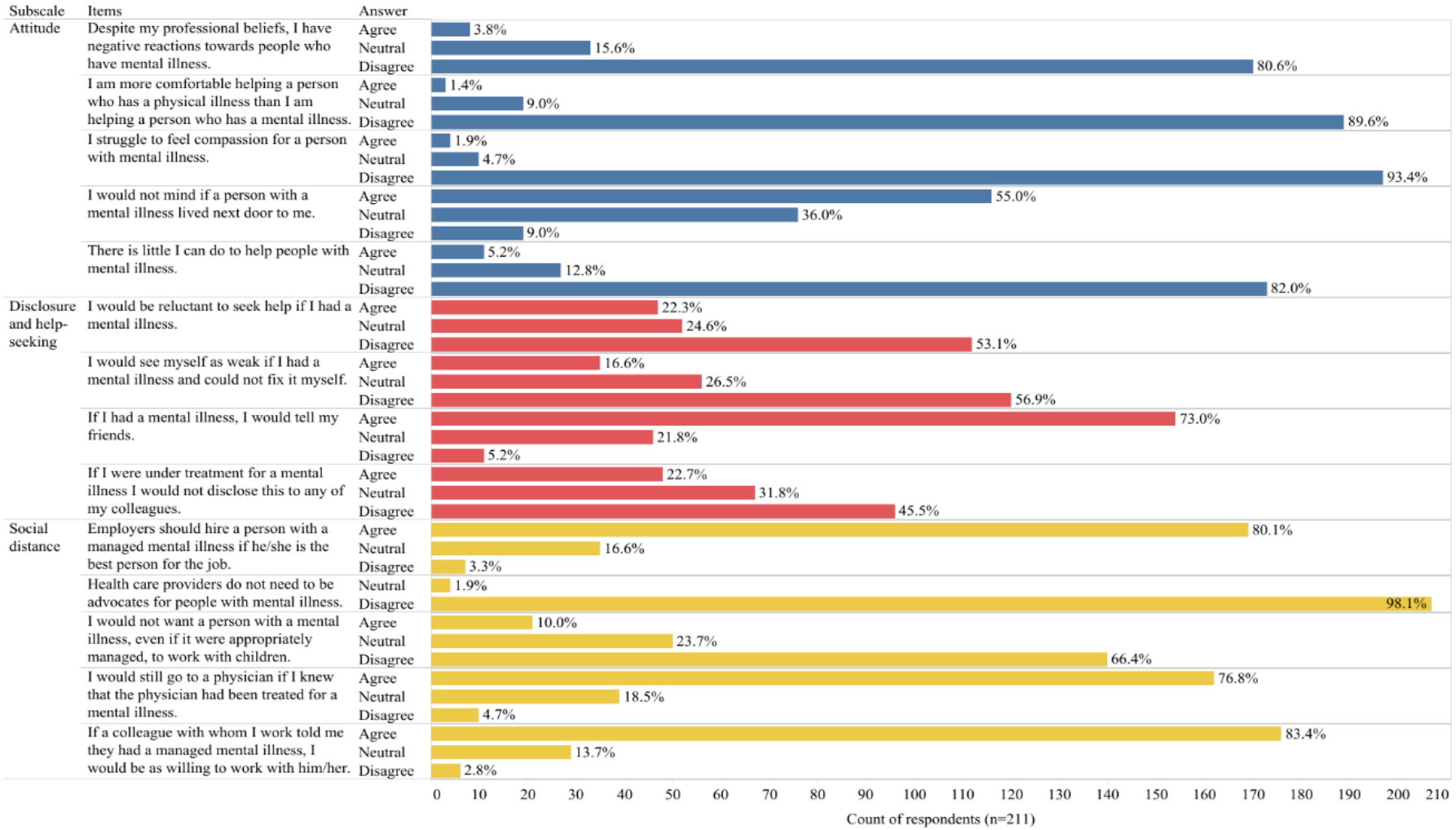

Figure 3. Distribution of the responses to items of the OMS-HC

Responses to 14 items are displayed that clearly loaded to any of the three factors in the EFA. Published own figure(121).

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4.6.3. Differences between groups based on the OMS-HC scores

Table 6 shows the total score and all subscale scores of the sample, as well as a comparison of the scores of the subgroups where we found statistically significant differences. Grouping respondents according to age ranges, gender, professional status (trainee or specialist), years of experience in psychiatry, type and place of workplace, and whether they had a close friend or a family member with a mental health problem did not result in significant differences between groups. In contrast, statistically significant differences were detected between groups on the basis of psychotherapeutic activity, seeking help for their own mental health problems, openness and having a possibility to participate in case discussion, supervision or Balint groups, and attitudes of close psychiatry colleagues towards patients of the participants. A borderline statistical difference ($p = 0.053$) was found between adult and child psychiatrists in help-seeking and disclosure.

Table 6. OMS-HC subscale scores and total scores of participants. * Case discussion groups, supervision or Balint-groups. Mann-Whitney U test with Monte Carlo Simulation and Non-Parametric Analysis of variance was applied. The statistically significant results ($p < .05$) are in bold. Published own table(121).

				Attitude		***p*-value**	**Disclosure and help-seeking**		***p*-value**	**Social distance**		***p*-value**	**14-item total**		***p*-value**
		n	(%)	*Median*	IQR		*Median*	IQR		*Median*	IQR		*Median*	IQR	
Overall		211	100	10	8-11		10	8-12		10	8-11		29	26-32	
Professional group	Adult	135	66	10	8-11	.385	10	9-12	.053	9	7-11	.525	29	26-33	.706
	Child	69	34	10	8-11		9	8-11		10	8-11		29	26.5-32	
Actively provides psychotherapy	Yes	101	48	9	8-11	**.028**	10	8-11	.877	10	8-11	.749	29	26-32	.507
	No	110	52	10	8-11		10	8-12		9	8-11		29	25.75-33	
Ever sought help for own mental health problems	Yes	98	46	10	8-11	.416	9	7.75-12	**.042**	9	7-11	**.037**	28.5	24.75-32	.107
	No	111	53	10	8-11		10	9-12		10	8-11		29	26-33	
Be open to participate in case discussion groups*	Yes	184	87	10	8-11	.182	10	8-11	**.012**	9	7-11	**.016**	29	25-32	**.004**
	No	27	13	10	9-12		11	9-13		11	9-11		32	28-35	
Has a possibility to participate in case discussion groups*	Yes	132	63	10	8-11	.126	10	8-11	.251	9	7-11	.186	28	25.25-32	**.046**
	No	79	37	10	8-12		10	9-12		10	8-11		30	27-33	
Close psychiatry colleagues' stigmatizing attitudes toward their patients	not at all	48	23	9	7-10	**.017**	9	8-11	**.021**	9.5	7-10.75	.240	27	25-32	**.044**
	to small extent	75	36	10	8-11		9	8-11		9	7-11		29	24-32	
	to some extent	62	29	10	8-12		10	9-12		10	8-11		30	27-34	

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	to great extent	25	12	10	9-11	11	10-12.5	9	8-10	31	27.5-33		

4.6.4. The relationship between personal and professional variables and the OMS-HC scores investigated using a regression analysis

In the multiple regression analysis, we focused on how the professional and personal variables related to the OMS-HC total and subscale scores. As can be seen in Table 7, most of the differences described above remained statistically significant in the prediction model; in addition, some other components were found to be statistically significant predictors of stigma. The estimated standardized beta coefficients show the effect of each predictor on the associated stigma score, in a standardized manner to avoid biases of different units of the predictors. The magnitude of each standardized beta coefficient, in turn, can be interpreted to infer the extent to which the presence of each factor contributes to the subscale score. The assessed variables accounted for 7% of the total stigma score, 10% of the Attitude, 7% of the Disclosure and help-seeking, 9% of the Social distance subscales. The results showed that having less stigmatizing colleagues was a statistically significant predictor of lower scores on the Attitude (B = 0.235 95%CI(0.168 – 0.858), p = .004), the Disclosure and help-seeking subscales (B = 0.169 95%CI(0.038 – 0.908), p = .033), and the total score of the OMS-HC (B = 0.191 95%CI(0.188 – 1.843), p = .016). Providing psychotherapy to clients (B = 0.179 95%CI(0.099 – 1.425), p = .025) and experiencing negative discrimination on the grounds of working as a psychiatrist (B = 0.163 95%CI(0.024 – 1.364), p = .042) predicted more positive attitude scores (R^2 = 0.104). Psychiatrists who had ever sought help for their own mental health problems had lower Disclosure and help-seeking subscale scores (B = 0.202 95%CI(0.248 – 1.925), p = .011, R^2 = 0.070). Having received any medical treatment for any mental health problems (B = 0.184 95%CI(0.185 – 2.063), p = .019) and experiencing discrimination on the grounds of working as a psychiatrist (B = 0.245 95%CI(0.439 – 1.931), p = .043)) were predictors of lower scores on the Social distance subscale (R^2 = 0.090). Openness to participation in Balint groups, supervision or case discussion groups (B = 0.166 95%CI(0.178–5.886), p = .037) predicted the overall stigmatizing attitude, as did more positive attitudes of psychiatry colleagues (B = 0.191 95%CI(0.188–1.843), p = .016) (R^2 = 0.067).

Table 7. Standardized beta coefficient estimates representing the analysis of OMS-HC total and subscales scores adjusted for professional and personal factors. * Case

discussion groups, supervision or Balint-groups. Multiple linear regression analysis using stepwise method. 95% CI = 95% Confidence interval, R^2=Rho square. Only statistically significant results are presented ($p < .05$). Published own table(121).

	Standardized Beta	***p*-value**	**95%CI**	R^2
Attitude				
Stigmatizing attitudes of close psychiatry colleagues	0.235	.004	0.168-0.858	0.104
Actively provides psychotherapy	0.179	.025	0.099-1.425	
Has experienced negative discrimination on the grounds of working as a psychiatrist	0.163	.042	0.024-1.364	
Disclosure and help-seeking				
Ever sought help for own mental health problems	0.202	.011	0.248-1.925	0.070
Stigmatizing attitudes of close psychiatry colleagues	0.169	.033	0.038-0.908	
Social distance				
Has experienced negative discrimination on the grounds of working as a psychiatrist	0.245	.002	0.439-1.931	0.090
Ever been medically treated for a mental health problem	0.184	.019	0.185-2.063	
14-item total				
Stigmatizing attitudes of close psychiatry colleagues	0.191	.016	0.188-1.843	0.067
Being open to participating in case discussion groups*	0.166	.037	0.178-5.886	

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5. DISCUSSION

Despite the fact that stigma toward people with mental health problems also occurs among medical practitioners, its existence among psychiatrists remains remarkably understudied. In this dissertation, we aimed to assess mental health-related stigma among psychiatrists by using the OMS-HC. To accomplish the aim, we first investigated the factor structure of the scale and performed validity and reliability measures to validate the Hungarian version of the scale. By acquiring an appropriate and valid scale to measure provider stigma in Hungary, we can pursue our initial aim of investigating the stigmatizing attitudes of psychiatrists and exploring their associations with sociodemographic, professional, and personal factors.

The factor structure of the OMS-HC was examined in several countries, and its authors revisited the scale structure to obtain a more stable solution. The results of the confirmatory factor analysis revealed that the 3-correlated factor solution recently proposed by the scale authors had weak incremental fit indices in our country on a sample of practicing psychiatrists. Therefore, further investigation of the scale structure and a deeper understanding of how the items worked in Hungarian culture seemed necessary. By running exploratory factor analyses, three dimensions were identified. Moreover, on the basis of the Schmid-Leiman solution, these three dimensions can be interpreted as a bifactor structure along with the general factor. The clear factor structure we obtained in the EFA highlights the significance of examining this option in the CFA.

Indeed, the bifactor model offers several advantages over the correlated factor model and is therefore well-suited for describing scales in mental health sciences. The bifactor and the second-order structures are the only options if we aim to acknowledge the multidimensional nature of the concept while also maintaining the notion of a single important target construct(123). The bifactor structure allows for the identification of a general factor influencing all observed variables, as well as factors specific to subsets of variables. Consequently, it underlies the traditional evaluation suggestions: a main scale as the total score and the three specific factors such as Attitude, Disclosure, and help-seeking and Social distance scores. The uniqueness of the bifactor structure provides a clearer understanding of the relationships between variables and their underlying constructs(123). It is also more parsimonious because allowing for a general factor that

accounts for common variance across all observed variables reduces the need for multiple correlated factors to explain the same variance and the risk of overfitting the model to the data. The flexibility of modeling is particularly useful for multidimensional constructs or unique sources of variance(123).

The EFA results revealed that one item loaded very poorly for all three factors (item 11 (item 14 on the original scale) „More than half of people with mental illness don't try hard enough to get better."), at the same time, we detected severe cross-loadings of two items to different subscales than originally designed. For this reason, we decided to shorten the scale by eliminating item 11 (item 14 originally). This particular item was supposed to load onto the attitude factor based on the results of Modgill's Canadian study, which revisited the factor structure of the OMS-HC and suggested a shorter, 15-item version for further use. However, in that study, the factor loading for this item ranked among the lowest (0.5106) compared to other scale items(88). The same item in the Swiss-German study also showed cross-loadings on all three factors(96). One possible explanation could be that this item differs in its content, as it outlines the responsibilities of individuals with mental illness, which may differ from and not necessarily be attributed to the attitudes of healthcare providers. Other research teams have also found cross-loadings for multiple items in the 15-item version of the OMS-HC including items 4 and 5 (items 6 and 7 on the original 20-item scale) loading on different factors than expected in Brazil(89), items 5 and 12 (originally items 7 and 17) in Singapore(94), and items 8 and 13 (originally items 10 and 18) in Switzerland and Germany(96). Furthermore, EFA results in Singapore revealed weak loading of item 1 (originally item 1) on all subscales, leading to a reduction of the scale to 14 items(94). In Brazil, researchers proposed an interesting concept of adding a fourth dimension, called "Negative Views", to the original 20-item long scale(89). However, the expert reviewer criticized this fourth subscale because it consisted of only two items, which is most likely a very strong co-occurrence of the two items, a doublet, which can lead to spurious factors.

The confirmatory factor analysis validated our decision, showing that the 14-item bifactor solution yielded the best model fit out of all possible models, resulting in both satisfactory absolute and relative fit indices. The findings are in line with a large European expansion of the present study, which implemented a slightly different estimation method, namely the bifactor exploratory structural equation modeling (92). By allowing

the cross-loading of the items, this method further proved the superiority of the bifactor structure over the correlated model of the OMS-HC in 29 countries out of 32 European countries. Other research groups have also investigated higher-order solutions for the structure, including a Brazilian team that presented the scale as a bifactor structure(89).

Cronbach's alpha and omega values indicated good internal consistency of the total score and fair reliability for the subscales. This can be considered a positive outcome, particularly in light of the limited number of items. However, in hierarchical models, Cronbach's alpha and omega values can demonstrate an overestimation of true reliability, resulting in inflated values, as it cannot distinguish between variances associated with general and specific factors(117, 124, 125). Therefore, these estimators should not be used to assess the reliability of the general factor in bifactor models unless the loadings of the general factor are high and the loadings of the specific factors are exceptionally low(117). As these measures are the most widely used in the literature despite their inherent limitations(126), we have presented them to allow for comparison with other research studies. Our study revealed that the bifactor model was the best-fitting model, indicating the multidimensional nature of the items. In view of this, calculating alternative internal consistency measures is recommended(127). Thus, we computed the hierarchical omega for the general and specific factors to evaluate model-based reliability, which is the most appropriate coefficient as it shows minimal bias and dispersion in bifactor models(116, 124, 125). In the current study, model-based reliability indices such as omega hierarchical values and the explained common variance were found to be good for the general factor; however, they were lower than the acceptable range for the specific factors. Although Cronbach's alpha and omega values indicated broadly acceptable internal consistency, they also showed the weakness of the subscales.

Presenting both these coefficients reduces the likelihood of misinterpretation of reliability results. This significant methodological result highlights the importance of calculating model-based reliability indices that are often neglected, in addition to solely reported Cronbach's alpha values. Overall, the findings suggest that the general factor can be considered reliable, whereas the reliability of specific factors is questionable. Although their reliability is below the acceptable range, it is close enough to indicate that they still have a role in the model. Therefore, we recommend using the total score as the primary measure, while using the subscale scores with greater caution. Nevertheless, the

subscale scores are useful for determining which dimension contributes to an elevated overall total score. In deciding whether to use a bifactor model comprising of a general factor and three orthogonal specific factors or a correlated factor model consisting of a total score and three subscales, researchers should consider a variety of factors, such as the underlying theory guiding their study, the nature of the constructs being measured, and the specific research questions being addressed. Each of these options has its specific strengths and weaknesses. If the focus is on understanding the factor structure, exploring the model, or investigating both the general construct and its specific components while controlling for common variance, a bifactor model may be more appropriate. Conversely, if the goal is to explore interrelationships among multiple constructs or dimensions within a broader theoretical framework, or if our intention is to calculate subscale scores, then the correlated factor model would be a more suitable model, bearing in mind that the scores will not be orthogonal.

We found a strong correlation between the general factor and the specific factors, and a statistically significant correlation between the three specific factors. The results were consistent with the intercorrelation results of the Portuguese study(128) and, although slightly lower, still aligned with those of the Canadian and Swiss-German studies(88, 96). Consistent with previous research(89, 93, 95, 96), the good to excellent test-retest reliability results and the good concurrent validity with the MICA scale indicate that the Hungarian version of the OMS-HC is suitable for further use to measure stigma toward people with mental illness.

It is essential to obtain specific information on the factor structure of the scale, its reliability and validity measures in order to properly assess the stigma that psychiatrists have toward people with mental illness. By collecting data on lived experiences and evaluating stigma from the perspective of psychiatrists, a deeper understanding of this phenomenon of provider stigma can be achieved, enabling the identification of possible interventions.

First of all, we assessed the lived experiences of the sample. According to the literature, these are well-known factors that influence attitudes(6, 129). The survey revealed that 59% of the participants reported that a friend or a family member had a mental illness. Brazilian psychiatrists have recently reported higher rates, with approximately two-thirds of them (67.4%, n = 263) having a family history of psychiatric

treatment(48). The results of the current study revealed that 46% of the Hungarian sample had sought help for a mental health condition, and 19% had received medical treatment at some point in their lives. Additionally, 74% of the sample have attended psychotherapy. The porportion of people seeking help for mental illness in Hungary exceeds the figures reported in a decade-old study of Brazilian psychiatrists, where 38% of participants (n = 1414) sought help and 25.3% received prescriptions for their mental illness(47). However, the level of medical care in Hungary is somewhat lower compared to these findings (19% vs. 25.3%). Additionally, 33% (n = 106) of Canadian psychiatric residents reported a personal history of mental illness(130). In a Turkish sample of psychiatrists, 22.7% (n = 57) had a history of a psychiatric disorder in their lifetime(62).

Self-stigma is an important issue that this thesis does not address. However, when the median subscale scores were divided by the maximum possible score per subscale, the subscale Disclosure and help-seeking had the highest relative score of all subscales (40% of the available maximum for Attitude, 50% for Disclosure and help-seeking, and 40% for Social distance). This indicates that psychiatrists may have difficulty in disclosing mental illness and asking for help. The nature of their work, which involves treating and supporting people with mental illness, can sometimes make it challenging for them to acknowledge their own mental health needs and seek help when necessary. Limited research attention has been paid to this phenomenon. Nonetheless, available studies among mental health professionals shed light on the importance of the perpetuated stigma in the workplace, concerns about professional competence, and fear of negative career consequences are significant factors contributing to their reluctance to seek help for their own mental health conditions(131, 132). A Canadian study of psychiatrists only found that „career implications" (34.5%), stigma (23.4%) and professional standing (16.4%) were all important barriers to disclosure and help-seeking. Even fear of stigma makes disclosure of psychological distress experienced by mental health professionals in the workplace challenging, as outlined in a recent review article(133).

This trend is also reflected in the distribution of the responses to questions about help-seeking and disclosure, as half of the sample stated reluctance to seek help for a mental illness or disclose their condition to colleagues. In contrast, responses on attitudes and preferred social distance were largely consistent, expressing an overall positive attitude toward people with mental illness.

Regression results of the current study show that individuals who have sought help for their own mental health problems in the past are more likely to seek help currently. Additionally, those who have received medical treatment for a mental illness tend to keep less social distance from people with mental illness. Research suggests that individuals who have had positive experiences with mental health care and have experienced less stigma are more likely to have a positive attitude toward seeking help (134-136). These findings support this conclusion. Prior to this study, no data were available on the experiences of psychiatrists in Hungary.

We found statistically significant differences between groups in stigma scores for their engagement in psychotherapeutic activities, seeking help for their own mental health conditions, openness to and participation in case discussions, supervision, or Balint groups, and attitudes of close psychiatrist colleagues of participants toward patients. All these factors resulted in less stigma.

Our results are consistent with the only available study on a sample of psychiatrists, which found that training in psychotherapy was associated with less stigma(62). The question arises as to what factors in psychotherapy may influence the attitude of psychiatrists toward their clients. Psychiatrists who have received comprehensive training in evidence-based psychotherapeutic approaches may exhibit more confidence and positive attitudes when working with their clients. Furthermore, those who gain experience with diverse client populations over time may develop a deeper understanding and empathy toward their clients. Initiatives to promote empathy, cultural competence, and self-awareness are essential to overcome challenging existing biases and foster a therapeutic alliance with individuals with mental illness(137). As psychotherapists work with clients to delve into their emotions, thoughts, and behaviors, they are also prompted to reflect on their own mental states as well as those of their clients. This reflective process fosters an increased awareness of internal experiences, leading to improved mentalization abilities in therapists. The ability to mentalize is an essential skill for psychiatrists and is of utmost importance for psychotherapy. An interventional study found that mentalization-based treatment skills improved attitudes of clinicians toward people with personality disorders(138), and were also shown to be effective among psychiatric trainees(139). Psychotherapy not only provides a set of practical skills such

as empathy, mentalization and theoretical knowledge, but practice usually involves case discussions and supervision as well.

In view of this, it is not surprising that in the regression model, openness to case discussion, supervision, or Balint groups was one of the two factors that were associated with a lower total score on the stigma scale, indicating less stigma. The search for options such as case discussions may be driven by therapeutic pessimism about the likelihood of recovery, or a sense of lack of competence. Psychiatrists and other mental health professionals often feel hopeless about their ability to help people(77). This can exacerbate negative attitudes, as stigma can be reinforced or rooted in the perception of a lack of confidence and competence of providers(77), and therefore may be worth targeting with anti-stigma interventions(45). Case discussions and Balint groups not only broaden the skillset of clinicians, but also deepen their understanding of themselves and others, reduce anxiety and stress, and improve their empathic abilities(69, 77, 140, 141).

Additionally, they increase awareness of their unconscious biases, which is also important in reducing stigma(142). A recently published article investigated Balint groups from the perspective of mentalization(143), a phenomenon described above in relation to psychotherapeutic activity. The paper highlighted that group members engage in a mentalizing process of a case presented and offer various insights. Investigating the case from multiple perspectives can help professionals view the person behind the mental illness as a whole, which may impact the attitude of the whole group. Interestingly, only openness to case-discussion groups was associated with favorable attitudes in the regression model. The possibility to participate in such resulted in a statistically significant difference between the total stigma scores, but did not remain a significant predictor in the regression model. An intriguing point to note is that the personality trait of being open to new experiences in itself leads to lower levels of stigma(72).

Overall, 87% of the sample reported that they were open to case discussions, supervision or Balint groups, whereas 63% had a possibility to attend such sessions. Although this study is not representative, it is worth noting that 24% of participants (n = 51) expressed their openness to participate in such groups but are unable to do so. These platforms provide a safe space for professionals to discuss concerns and challenges, seek guidance and share the emotional burdens associated with challenging cases. Research has shown that those who lack supervisory support and opportunities to attend these

groups are more prone to burnout(144, 145), which is a fertile soil for negative attitudes toward people with mental illness(46).

Openness to these groups indicates a willingness to interact with colleagues. Building professional relationships and networks not only facilitates the exchange of valuable information, resources, and best practices, but also provides emotional support. Having less stigmatizing colleagues was one of the key factors that resulted in lower scores on almost every subscale. Those who are surrounded by less stigmatizing colleagues have more favorable attitudes and are more likely to disclose their mental illness or seek treatment for it. These findings align with a Canadian article that outlines the primary barriers caused by stigmatization in healthcare. The article emphasizes the importance of working together with accepting colleagues to facilitate the disclosure of mental illness in the workplace(77). The findings highlight the role of community and the importance of reducing stigma in workplace culture, in which healthcare managers and leaders have a pivotal role. By addressing stigmatization in healthcare workplaces, we can not only better support the well-being of healthcare professionals but also improve patient outcomes and the overall quality of care. Implementing peer-led initiatives, for instance, can make mental health professionals feel safer when disclosing their own lived experiences to colleagues(146). Additionally, comprehensive programs specifically designed for mental health professionals are available to facilitate disclosure in the workplace(147).

Interestingly, the strongest predictor of social distance in the regression model was experienced discrimination in the past for being a psychiatrist. It is worth noting that nearly half of our research population (43%) had ever faced discrimination for working as a psychiatrist. The stigma surrounding the discipline of psychiatry(148) and psychiatrists(149) is a persistent issue. This has been documented in numerous research studies, from the perceptions of psychiatric trainees(150) to the views of other healthcare professionals and the general public(151, 152). Psychiatrists may express stigma towards their patients as a result of their own professional stigma. A study of mental health professionals found a relationship between associative stigma, depersonalization, and emotional exhaustion(153). Job dissatisfaction and stress pave the way to more negative attitudes, which can have detrimental consequences for patient care(154). Associative stigma toward psychiatry in Hungary has not yet been investigated. Future research could

focus on historical, cultural, and social factors that contribute to this phenomenon. However, this research also highlights the significance of considering the impact of associative stigma toward psychiatrists within healthcare settings and society as a whole. Such discrimination affects not only the well-being of these professionals but also their attitudes toward clients. It is important to create a supportive environment for psychiatrists to ensure quality care for clients.

In terms of help-seeking and disclosure, there was a marginal statistical difference (p = 0.053) between adult and child psychiatrists, which did not result in a significant predictor in the regression analysis. No significant differences were found between groups when respondents were grouped by age, gender, professional status (trainee or specialist), years of experience in psychiatry, type and location of workplace, and having a close friend or family member with a mental health problem. The literature presents mixed findings on the relationship between age and stigma. Stigma was found to increase with age in both the Turkish study(62) and one of the two Brazilian studies(47). However, this association was not observed in the other Brazilian study, which was conducted on a different sample of Brazilian psychiatrists seven years later(48). In the current study, no other sociodemographic characteristics were found to be associated with stigmatizing attitudes.

Psychiatry is a profession with an array of possible orientations to practice and research. In an ideal world, it would be prudent to ensure that all psychiatrists have a chance to receive anti-stigma intervention specifically designed for them, and also, have an opportunity to allocate time for those in daily clinical practice. Albeit personalized anti-stigma interventions are not yet available in Hungary, this research extends our current knowledge and may provide a basis for psychiatrists to explain what factors are associated with their stigmatizing attitudes. Psychiatrists, as the main mental health care providers responsible for their patients and because of their expertise in understanding and treating mental illnesses, play a crucial role in addressing stigma associated with mental health. Their responsibility extends beyond educating the public and advocating for policies and practices that benefit their patients. They also need to engage in continuing education, training, and self-reflection on their attitudes and behaviors toward their patients and their professional role(155). Organizational policies and practices should prioritize anti-stigma initiatives, including zero-tolerance policies for

discriminatory behavior, regular evaluation of provider attitudes and behaviors, and the establishment of support mechanisms for providers experiencing burnout or compassion fatigue(46).

The results of this study suggest that changes in workplace culture and identified activities, such as case discussions and psychotherapeutic practice may have the potential to become sources of intervention to reduce the stigma among psychiatrists. Limited evidence is available on the exact level of stigma in Hungary; however, efforts against stigma remain an important responsibility of society as a whole. In Hungary, there are a few initiatives that aim at promoting equality and reducing stigma surrounding individuals with mental health conditions. Two prominent foundations with a long history of working for the quality of life of people with mental illness are the Moravcsik Foundation and the Awakenings Foundation. Steps have been taken to address the issue of stigma through the establishment of the National Mental Health Coalition and the recently initiated National Anti-stigma Program. The National Anti-stigma Program is a significant initiative to examine and implement stigma reduction strategies in the country. The process is in its initial stages, and the first step focuses on the psychometric validation of stigma measurement scales. The initiation of the program is a step toward targeted campaigns and interventions for the benefit of Hungarian people with mental illness. It will target not only the attitudes of the general population, but also those of healthcare professionals, including psychiatrists, to ensure that individuals with mental health illness receive appropriate and respectful care.

5.1. Limitations

First, this study cannot be considered representative of the Hungarian psychiatrist community. Estimating the exact number of psychiatrists in Hungary is challenging due to the lack of proper registers of such data. The numbers range between 448 (403 adult and 45 child psychiatrists who work in public service), and a total of 1732 psychiatrists, including trainees and specialists in both professions, according to the 2019 figures of the National Directorate General for Hospitals. Roughly speaking, using an average of the highest and lowest values, the current study involved 20% of psychiatrists working in Hungary. However, senior colleagues and private practitioners were underrepresented in

the study. Furthermore, the convenience sampling method used in this study is a limitation as it only allows access to individuals who are willing to complete online questionnaires.

Second, self-reported scales may include social desirability biases. People have a natural desire to fit in a group and to be liked, which might cause them to provide inaccurate or false information in response to questions about sensitive topics; therefore, social desirability bias cannot be disregarded in self-report measurement, especially on a sensitive subject such as stigma toward those whom psychiatrists see and treat every day. Furthermore, participant self-inclusion is likely to have resulted in a substantial selection bias.

Third, these findings are based on objective data, such as responses to a scale, and the additional questions are mainly dichotomous, yes or no questions. For this reason, these data lack subjective evaluations, such as the severity of mental health conditions, or the type and quantity of psychotherapeutic practices. Additionally, some questions were adversely biased, relying on the impressions of the participants, tending to make them subjective rather than objective, for example, attitudes of close psychiatry colleagues.

Fourth, other aspects of stigma (such as self-stigma, discriminatory behavior, and experienced stigma) were either not fully assessed or not assessed at all in this study.

Fifth, the OMS-HC is a scale designed to measure the attitudes of healthcare providers across various fields. Consequently, some items may be less relevant for psychiatrists than other healthcare workers who do not work closely with people with mental illness. This could affect the distribution of responses, but potentially does not impact the results of factor analysis of the scale.

Sixth, the OMS-HC measures attitudes toward people with mental illness in general and is not designed to assess stigma toward specific mental health conditions. As a result, we do not know which disorders participants are considering when completing the questionnaire. This ambiguity may influence their response choices and, consequently, their stigma scores.

Seventh, we had limited opportunities to measure concurrent validity, as there were no scales that had been validated as stigma measurement in Hungary until now. We chose the MICA-4 scale for concurrent validity measures; however, due to the lack of validation studies in Hungary, it cannot be considered a criterion-related standard.

Eighth, no information is available on the generalizability of the findings. The test-retest reliability demonstrated good agreement between two scale completions within a month. However, in special situations, such as the COVID-19 pandemic, the attitudes of healthcare professionals may have been affected by stress and overwhelming workload(156). Data collection was completed prior to the pandemic; therefore, we have no information on the post-pandemic situation.

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6. CONCLUSIONS

In conclusion, we translated the OMS-HC, examined its psychometric properties, and investigated factors related to stigmatizing attitudes among psychiatrists. The Hungarian version of the OMS-HC contains 14 items, as one item had to be deleted from the scale due to a poor fit in the model. On the basis of exploratory and confirmatory factor analyses, and after a comparison of different models, the bifactor model best explains the scale structure consisting of a general factor and three specific factors; however, its model-based reliability is lower than estimated. Therefore, we recommend using the total score as the primary measure and employing the subscale scores with caution. Nevertheless, subscale scores are useful for determining which dimension contributes to an elevated overall total score. The test-retest reliability and concurrent validity measures ensure adequacy and usability of the OMS-HC for assessing stigma among healthcare providers in Hungary.

In the current study, we focused on the following hypotheses:

1) The lived experiences of psychiatrists are associated with more positive attitudes toward people with mental illness.

Their own lived experiences of any mental disorders, including prior help-seeking behavior and medical treatment for a mental illness, were related to the scores on the subscales Disclosure and help-seeking, as well as the Social distance of the OMS-HC, which indicates their current willingness to seek help, and a decreased social distance from those with mental illness.

2) Experience in psychotherapy is related to less stigmatizing attitudes.

Active psychotherapy predicted the scores of the subscale Attitude in the regression model, indicating more favorable attitudes toward people with mental illness.

3) Participation in case discussion and supervision or Balint groups is associated with more favorable attitudes.

Whereas openness to case discussion, supervision or Balint groups were associated with the total score of the OMS-HC, there was no statistically significant relationship in the regression model for participation in case discussion groups.

4) Attitudes of surrounding psychiatry colleagues affect the attitudes of psychiatrists toward people with mental illness.

The OMS-HC total scores and the scores of the subscales Attitudes and Disclosure and help-seeking were related to the chance to work together with less stigmatizing psychiatry colleagues.

The study found that psychiatrists with lived experience of mental illness, active psychotherapeutic practice, supportive colleagues, and openness to case discussion groups had more positive attitudes toward individuals with mental illness. It suggests incorporating these practices into training programs and everyday practice.

Our findings highlight the importance of the attitudes of psychiatry colleagues and the value of active psychotherapeutic practice. Addressing stigma within the workplace culture is crucial, suggesting a need for interventions to address this issue. Encouraging psychiatrists to engage in psychotherapy training or adopt a more therapy-oriented approach can help mitigate stigma, ultimately benefiting patient care. Therefore, psychiatric institutions should consider implementing anti-stigma initiatives, supporting case discussion groups, and promoting psychotherapy training among their staff. Prioritizing organizational policies that support anti-stigma efforts is essential for creating a more inclusive and supportive work environment.

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7. SUMMARY

Stigma toward people with mental health problems has a detrimental effect on the individual. Stigma comes not only from the general public but also from healthcare professionals, resulting in a lower quality of life, reduced access to appropriate care and shorter life expectancy. Studies on stigma among mental health providers are scarce, and data on the attitude of psychiatrists are even more limited both in Hungary and worldwide. My research project, therefore, had two interrelated aims:

1. To investigate the factor structure of the Hungarian version of the OMS-HC along with validity and reliability measures.
2. To measure the stigmatizing attitudes of psychiatrists in Hungary toward people with mental illness, the relationship between their attitudes and personal and professional factors.

We designed a cross-sectional survey using the OMS-HC as a primary outcome measure to quantify stigma among specialists in general adult and child psychiatry, and trainees in Hungary.

The result from all factor analyses, taken together, was that the bifactor solution with a general factor and three specific factors showed the best model fit. As item 11 (item 14 on the original scale) showed a poor loading on each factor, we deleted it; thus, the Hungarian version of the scale has 14 items.

The study found that lived experience of any mental health conditions were quite common among Hungarian psychiatrists, with 59% of the sample having had a friend or family member with a mental illness, 46% of them having sought help, and 19% having received medical treatment for a mental illness in their lives. Having lived experience with mental illness, participating in active psychotherapy practice, having less stigmatizing colleagues, and being open to case discussion groups had a statistically significant association with less stigmatizing attitudes toward people with mental illness.

The results underline the importance of targeting stigma in workplace culture and recognize the potential impact of psychotherapy on the attitudes of psychiatrists. Incorporating such options into psychiatric training programs and exploring anti-stigma initiatives to reduce stigma in the workplace would be beneficial for everyday practice.

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Supplement 1.

Az Opening Minds Stigma Skála egészségügyi dolgozóknak szóló 15 tételes változata (OMS- HC)

Kérem, hogy értékelje az állításokat aszerint, hogy mennyire ért egyet azok tartalmával.

	Állítás (eredeti tételszám)	Határozottan nem értek egyet	Nem értek egyet	Egyet is értek meg nem is	Egyetértek	Határozottan egyet értek
1	Jobban érzem magam, ha egy olyan embernek segítek, akinek fizikális panaszai vannak, mint egy mentális betegséggel élőnek (1).					
2	Ha egy kollégám, akivel együtt dolgozom, elmondaná nekem, hogy állapota stabil és gondozás alatt áll valamilyen mentális betegség miatt, ugyanolyan hajlandósággal dolgoznék vele együtt, mint eddig. (3)					
3	Ha mentális betegséggel kezelnének engem, nem vállalnám fel ezt egyik kollégám előtt sem. (4)					
4	Gyengének látnám magam, ha mentális betegségem lenne és nem tudnám magam megoldani. (6)					

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5	Vonakodva kérnék segítséget, ha mentális betegségem lenne. (7)					
6	A munkáltatóknak a mentális betegséggel élő embert kellene felvennie, ha állapota stabil, gondozás alatt áll és ő a legjobb arra a munkára. (8)					
7	Továbbra is járnék egy orvoshoz, ha tudomásomra jutna, hogy az orvos mentális betegség miatt korábban kezelés alatt állt. (9)					
8	Ha mentális betegségem lenne, elmondanám a barátaimnak. (10)					
9	A szakmai meggyőződésem ellenére negatív reakcióim vannak a mentális betegséggel élő emberekre. (12)					
10	Keveset tudok segíteni a mentális betegséggel élő embereknek. (13)					
11	A mentális betegséggel élő emberek több mint fele nem próbál tenni elég erősen azért, hogy jobban legyen. (14)					
12	Nem akarnám, hogy egy olyan ember foglalkozzon gyerekekkel, aki mentális betegséggel él, még akkor					

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	sem, ha gondozásban részesül és állapota stabil. (17)					
13	Az egészségügyi szolgáltatóknak nem szükséges a mentális betegséggel élőkkel támogatónak lenniük. (18)					
14	Nem bánnám, ha egy mentális betegséggel élő ember lenne a szomszédom. (19)					
15	Nehezemre sajnálatot érezni mentális betegséggel élő emberek iránt. (20)					

Pontozás

A kérdőív 3 alskálából áll. A kérdőív pszichometriai jellemzőinek vizsgálata során kapott eredmények alapján a magyar változat esetében elsősorban az összpontszám figyelembevétele részesítendő előnyben az egyes alskálák pontszámaival szemben, továbbá a 11-es (eredeti számozás szerint a 14-es) tétel elhagyását javasoljuk. Ennek megfelelően az összpontszám a 14 tétel alapján 14 ponttól 70 pontig terjedhet. Az alacsonyabb pontszám kevésbé stigmatizáló attitűdöt mutat.

A fenti állítások 1-től 5-ig terjedő Likert-skálán pontozandók.

1: Határozottan nem értek egyet, 5: Határozottan egyetértek

A *-gal jelölt állítások reverz pontozásúak:

1: Határozottan egyetértek, 5: Határozottan nem értek egyet

Alskálák és hozzájuk tartozó tételek:

Egészségügyi szolgáltatók mentális betegséggel élő emberekhez való hozzáállása
1 9 10 14* 15

Felvállalás, segítségkérés
3 4 5 8*

Távolságtartás
2* 6* 7* 12 13