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„A cross cultural comparison of lay people's causal and interventional beliefs about schizophrenia and the relationship between their understanding of the condition and social distance“

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A cross cultural comparison of lay people's causal and interventional beliefs about schizophrenia and the relationship between their understanding of the condition and social distance.

Abstract

Background: The importance of mental health literacy and the consequences of a lack thereof have been shown in a variety of studies. False beliefs are connected to inadequate treatment recommendations and further stigma, making help-seeking difficult. There has been research into health care professionals' mental health literacy, but little is known about the state of lay people's knowledge.

Research Questions: This study compares and determines whether members of the general public in three European countries (UK, Austria, and Germany, N=1046) differ in recognising schizophrenia from a vignette. It investigates how demographic characteristics, cultural differences, knowledge of the diagnosis and contact with a person with mental health issues impact causational and interventional beliefs, as well as the desire for social distance.

Results: Recognition rates were low, with 32,5% in the UK and 13,4% in the Austrian/German sample. Lay diagnosis and culture most consistently influenced attributions and were largely associated with treatment recommendations and the desire for social distance.

Conclusion: The first step towards fast and adequate treatment is to enable lay people to recognise discrete mental health issues and gain further knowledge about appropriate interventions. Concluding from the data found, a combination of knowledge-based interventions about symptoms, causes and in combination with equal-status contact between the general public and people recovered from serious mental health issues would further promote help-seeking behaviour and reduce stigma.

Abstract

Hintergrund: In einer Vielzahl von Studien wurde die Notwendigkeit einer psychischen Gesundheitskompetenz, der sogenannten *mental health literacy* gezeigt. Ein Mangel dieser Kompetenzen erhöht u.a. Stigma und erschwert die Hilfesuche, was schwerwiegende Konsequenzen für den weiteren Krankheitsverlauf birgt. Der Forschungsfokus zu *mental health literacy* ist hauptsächlich auf Personen im Gesundheitsberufen gerichtet, über Kompetenzen der

Allgemeinbevölkerung ist bisher jedoch wenig bekannt.

Forschungsfragen: In dieser Studie wurden Laien aus drei europäischen Ländern (England, Österreich und Deutschland, N = 1046) bezüglich ihrer ‚mental health literacy‘ befragt und verglichen. Sind Personen der Allgemeinbevölkerung in der Lage Schizophrenie aus einer Vignettenbeschreibung zu erkennen und können kulturelle Unterschiede beobachtet werden? Beeinflussen demografische und kulturelle Faktoren, sowie der Kontakt mit Personen mit psychischen Problemen und das Wissen um die Diagnose Schizophrenie die Ursachenattribution, Hilfeempfehlungen und den Wunsch nach sozialer Distanz?

Ergebnisse: Lediglich 32,5% der englischen und 13,4% in der österreichisch / deutschen Stichprobenteilnehmer erkannten die Diagnose. Das Wissen um die Diagnose und der kulturelle Faktor waren die konsistentesten Einflussfaktoren, welche sowohl Behandlungsempfehlungen als auch den Wunsch nach sozialer Distanz maßgeblich beeinflussten.

Fazit: Zukünftige Interventionen sollten eine Kombination aus wissenschaftsbasierten Informationen bezüglich Symptomen, Ursachen und Behandlungsempfehlungen, als auch die Möglichkeit des gleichberechtigten Kontaktes mit sich in Remission befindenden Personen mit schweren psychischen Problemen beinhalten. Vielschichtige Maßnahme haben das Potenzial Wissen und Hilfesuchverhalten zu verbessern, als auch Stigma zu reduzieren.

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1. Introduction

During adolescence or early adulthood approximately 70-75% of mental disorders and adult mental health problems start to manifest (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Mojtabai et al., 2015). The lifetime prevalence of mental disorders are up to 50%, which means that in the course of a lifetime every second person will suffer from mental health issues (Kessler, Rubinow, Holmes, Abelson, & Zhao, 1997). A recent study found, after reviewing epidemiological evidence, that only a minority of people maintain enduring mental health, whereas the majority will develop a diagnosable mental disorder (Schaefer et al., 2017).

Approximately one third of the burden of illness in adolescence and young adults are caused by mental disorders (World Health Organization, 2013). If these disorders stay untreated, the predicted outcomes include difficult family and interpersonal functioning and poor occupational achievement, as well as reduced life expectancy due to medical conditions associated with mental health problems, such as diabetes, stroke, heart diseases, respiratory conditions and unnatural deaths (Mezuk, Eaton, Albrecht, & Golden, 2008; Mojtabai et al., 2015; Thornicroft, 2011; Wei, McGrath, Hayden, & Kutcher, 2015). This lack of help for people with mental health issues even in high-income countries results in a 15-year mortality gap for women and a 20-year gap for men suffering from mental health issues (Thornicroft, 2011). Despite these dire consequences and the great burden of mental health issues, research shows that between 70-80% of adolescents and adults worldwide do not receive the mental health care they require (Barwick et al., 2008). The intra-personal reasons for this lack of care include fear of perceived stigma, potential embarrassment, and problems in identifying mental health symptoms (Gulliver, Griffiths, & Christensen, 2010).

It is therefore important to collect data on lay people's beliefs about causes and possible interventions about mental health issues - in particular, severe cases like schizophrenia and its

connection to lay people's wish for social distance as a measure for stigma. This information yields important implications as to how these beliefs influence the way lay people take action, not only in helping themselves, but also in their ability to support others suffering from mental health issues. Furthermore, it shapes the way people with schizophrenia are perceived and treated by the general public and how this, to name only a few, shapes and influences their perception of themselves, their adherence to interventions, medication, and their quality of life in general. It is essential to understand the current state of lay people's knowledge about the recognition rates of schizophrenia, which causal and interventional beliefs lay people hold, and how they interact with each other. There is also a need to investigate possible connections to socio-demographic characteristics and cultural differences.

1.1 Mental Health Literacy

Knowledge about diseases, be it mental, physical or both, influences the course of action, or even more important, if any action will be taken at all. If mental health issues are experienced, it is essential to know that these are in fact mental health issues (Jorm, 2012). It is helpful to understand that other people struggle with the same issues, as is comprehending that there are ways to treat these issues and that in the course of time, with the right help, recovery can be achieved (A.F. Jorm, 2012; Kelly, Jorm, & Wright, 2007) - recovery describing the pursuit of a meaningful and satisfying life, despite the limitations caused by mental health issues (Chan & Mak, 2014). Lay people who understand that there is a potential disease can learn how to prevent it, where to find help and what courses of treatment they have available (A.F. Jorm, 2012; Kelly et al., 2007).

Due to resources devoted at a global level to promoting health literacy, the general public has an understanding of major physical diseases and how to minimise risks. Conditions such as heart disease, stroke and cancer were targeted and therefore the connection between smoking and cancer or the benefits of a healthy diet and physical activity to prevent heart disease, stroke or diabetes are widely

known (Jorm, 2012; Tay, Tay, & Klainin-Yobas, 2018). There are insights into early interventions, such as early warning signs for cancer, stroke or heart attacks. Many people are aware of the appropriate sources of professional help in order to screen for or treat major physical diseases (A.F. Jorm, 2012; Tay et al., 2018). Unfortunately, the same resources were not devoted to further knowledge about mental health literacy and therefore the same level of insight into major physical diseases is far from attained when it comes to these mental health issues (Tay et al., 2018). As mentioned above, the lifetime prevalence of mental disorders are up to 50% (Kessler et al., 1997), "[...] which means that virtually everyone will either develop a mental disorder or have close contact with someone who does" (Jorm, 2000, p. 396). The lack of knowledge is more than troubling, as a correct understanding of mental health issues is crucial in today's society in order to minimize the numerous negative consequences (A.F. Jorm, 2000; Thornicroft, 2011). A meta-analysis has shown that well developed psychological interventions have a positive effect and are necessary in order to help people achieve a better quality of life (Lipsey & Wilson, 1993). But again, in order to find or receive help, lay people first need to know and understand that there is in fact an issue and that treatments are available (Goldney, Dunn, Grande, Crabb, & Taylor, 2009).

This is why the concept of 'mental health literacy' was defined, and it is summarised as "knowledge and beliefs about mental disorders which aid their recognition, management or prevention" (Jorm et al., 1997, p. 182). Roughly described, it encompasses the skills of gaining access to, using and understanding information in ways that contribute to and help maintain good mental health (Jorm, 2000; Lauber, Nordt, Falcato, & Rössler, 2003). In more specific terms, the concept consists of several abilities: (1) the skill of recognising specific disorders or various forms of psychological distress, (2) awareness and understanding of risk factors and causes, as well as (3) possible self-help interventions, (4) knowledge of suitable and available professional help, (5) an attitude that supports awareness and perception and leads to adequate help-seeking

behaviour, and lastly (6) the ability of knowing where to find mental health information (Jorm et al., 2006).

Better knowledge concerning the different aspects of mental health literacy helps people identify discrete mental disorders and gives them an awareness of causes and risk factors, as well as the ability to seek appropriate help and information in order to ensure early detection and treatment of mental health issues for oneself or others (Goldney et al., 2009; Kutcher, Wei, & Coniglio, 2016).

Especially with schizophrenia, early interventions are crucial. If the illness is not identified at the onset of its first manifestation, patients' cognitive functioning can significantly deteriorate in an irreversible manner (Yang, Lu, Lo, Peng, & Liu, 2015). Schizophrenia, an illness which includes a neurodegenerative process, has wide-reaching consequences for the personal, family, social and professional life. During the course of the illness neurobiological and neuropathological changes in the brain can occur and deteriorate irreversibly over time (Ostojić, 2012). Therefore early recognition and identification presents an opportunity to intervene at the onset of the disease, which can delay or even prevent the development of a chronic psychotic illness (Kutcher et al., 2016; Tiffin & Welsh, 2013).

Lay people generally don't base their knowledge on diagnostic categories, but on their attitudes and beliefs gathered from observed and reported data (Scior & Furnham, 2011). Even in times of the internet, newspapers and magazines (Nawková et al., 2012), as well as television and movies, are primary sources of information about mental health. These outlets support or refute stereotypes and misconceptions (Yang et al., 2015) and have an immense impact on the general public's attitude to and knowledge of mental health issues (Ray & Hinnant, 2009). Skewed coverage by news outlets reinforce stigma of mental illnesses (Matthias C. Angermeyer & Matschinger, 2005). By reporting more often on violent crimes committed by people with schizophrenia, the media industry influences public opinion by presenting specific facts in the foreground, whilst at the same time downplaying others (Yang et al., 2015). Public interest is drawn to people suffering from schizophrenia as some of their symptoms, such

as hallucinations or delusions, are difficult to comprehend. People with schizophrenia seldom commit serious crimes; if they do, due to their symptoms, the crimes appear to be unpredictable and bizarre and are therefore given significant attention by the media (Kuehn, 2012). In an analysis of movies, the association between schizophrenia, violence and unpredictable behaviour was a common stereotype shown on screen. These stereotypical depictions were misrepresented the causes, symptoms and treatments of the illness (Owen, 2012).

A recent study has shown that less than half of the articles published in men's and women's lifestyle magazines mention any references for specific causation of mental illnesses. It was more likely that the origin of the mental health issue was attributed to individual causes, rather than social ones (Yang et al., 2015). By influencing the perception of attribution of causation, different attitudes towards people with mental illnesses are triggered (Yang et al., 2015). For example, if it is assumed that the cause of a mental illness is an individual one, blame is assigned to the individual. If, however, the cause of an illness is considered to be beyond the individual's control, such as genetic factors, the reactions by the general public appear to be more compassionate and there seems to be a greater willingness to help (Jeong, 2007). It is important to understand that the way these reports on mental illness are framed influence the individual development of a mental health literacy concept and directly impacts, among others, help-seeking behaviour, causal beliefs about mental health issues and as a consequence the attitude towards oneself and other people with mental health issues, as well as emotional reaction towards themselves or others (Jorm et al., 1997; Yang et al., 2015). Furthermore it is important to understand which treatment recommendations are made by the general public, as they in turn may influence the beliefs of people affected by mental health issues, and how they advise friends or family members presenting symptoms of mental health issues (Speerforck, Schomerus, Matschinger, & Angermeyer, 2017)

It is therefore essential to get a better understanding of lay

people's momentary beliefs of causation, attribution and intervention and how knowledge or unawareness of a diagnosis changes these beliefs, as well as the influence and impact of socio-demographic and cultural factors have on these issues.

1.2 Stigma

As mentioned above, knowledge is not only important for recognition and help-seeking behaviour, it also influences attitudes towards mental health issues and people suffering from them. The importance of furthering psychological wellbeing within the EU was made clear in the Green Book published by the European Communities (2005). Their survey stated that people with psychological disorders still to this day have to cope with social exclusion, stigma, discrimination and the violation of their fundamental rights and dignity. The World Health Organisation (WHO) considers the stigma associated with mental illness a global health problem (WHO, 2002). So, although treatments for mental disorders are available, stigma is one of the main reasons why the help-seeking gap remains large (Roskar et al., 2017)

There are many different definitions of what stigma is, and how it affects people suffering from mental health issues and those close to them. Stigma is a very broad term composed of many intertwined concepts (Karidi et al., 2015). Link and Phelan (2001) define the presence of stigma to be when the following four components coincide: (1) if human differences are distinguished and labelled, (2) if undesirable characteristics that form the stereotype are associated with the labelled person in preeminent cultural beliefs, (3) if the people concerned are seen as outsiders and (4) if the label leads to loss of status and inequity. As mentioned above, this may lead to people shying away from even seeking help in the first place (Gulliver et al., 2010).

Stereotypes are an example of stigma on a cognitive level and how knowledge about people with mental health issue is accessed by the general public. Stereotypes grant quick access to prefabricated knowledge, beliefs and expectations about individuals based on their distinct social group affiliation, in this case people with mental

health issues, specifically people who suffer from schizophrenia (Quadflieg & Macrae, 2011; Rössler, 2016). A stereotype by itself is not automatically wrong or negative (Rössler, 2016). They help us make quick decisions and adapt our behaviour in an overwhelming and ever changing world, without the need for further information (Quadflieg & Macrae, 2011; Rössler, 2016). The most significant stereotypes people with severe mental disorders have to cope with in everyday life are that they are presumed to be dangerous, erratic and unreliable; people suffering from schizophrenia are most affected by such perceptions. Stereotypes are not useful when trying to achieve a fair and rational judgement about individuals. This would require more information on an individual level. In this case, stereotypes and the stigma attached to them can, as a consequence, become an unreliable way of information processing as they typically trigger routine rather than individual response patterns. (Rössler, 2016)

Prejudice is an even more complicated concept, as it is not a cognitive but an emotional reaction to a stereotype. Prejudice concentrates on the stigma, which becomes the identity of the stigmatised person. Therefore, the perception of the illness is not only a part of a person's identity, but becomes the whole identity of the person. As an example, "a person suffering from schizophrenia", which describes only one part of their personality, becomes a dangerous "schizophrenic" (Rössler, 2016). Prejudicial behaviour can lead to rejection from job applications, the refusal of becoming a tenant or being rejected by family (Angermeyer & Matschinger, 2004, Link & Phelan, 2001). Research shows that people choose not to seek help from mental health services, as the fear of the assigned label and the prejudice and discrimination associated with it is too great (Corrigan, 2007; Gulliver et al., 2010).

The way people with mental health issues are treated influences not only their help-seeking behaviour, it also influences how they perceive and see themselves. Self-stigma defines the reaction of people with mental health issues to frequent discriminatory and hostile behaviour due to their suffering from a mental illness (Karidi et al., 2015). It affects the individual's self-concept in

a harmful way and has a direct and negative effect on their overall functioning (Chan & Mak, 2014). As a consequence, people with schizophrenia often suffer from social exclusion and a diminished sense of value and purpose. It not only influences adherence to crucial medication, but also has a negative impact on clinical outcomes of therapeutic interventions (Chan & Mak, 2014; Karidi et al., 2015; Sajatovic & Jenkins, 2007). It hinders recovery, which essentially describes the pursuit of a meaningful and satisfying life, despite the limitations imposed by illness. An example of this would be to achieve one's potential in the community. This universal desire is often sabotaged for people with schizophrenia, due to common societal stigma associated with schizophrenia (Chan & Mak, 2014). There is a consensus among researchers that stigma plays a substantial role in contributing to non-adherence to antipsychotic medication (Brain et al., 2014; Gulliver et al., 2010; Rössler, 2016; Sajatovic & Jenkins, 2007). The consequences of non-adherence are immense, as they increase the risk of relapses, hospitalisation and suicide (King et al., 2014; Novick et al., 2010).

Stigma not only affects people with mental health problems, affiliate and associative stigma affects family members and/or close friends, as they are often wrongfully blamed (Mak & Cheung, 2008). The associative stigma is linked to the caregivers' perception towards the negative public attitude, whereas affiliate stigma describes the caregivers' internalization of the public's prejudice. The affiliate stigma has more severe effects on the caregivers as (1) they identify with the stereotype and start to agree with the public's opinion towards themselves, as a consequence of the internalisation of the stigma; (2) they start to suffer from affective reactions, such as feelings of embarrassment and shame which originate from the internalized stigma and (3) they react with a behavioural response, which manifests in behaviour such as withdrawal and self-disparagement (Link & Phelan, 2001; Mak & Cheung, 2008, 2012; Shi et al., 2019).

Another important issue associated with stigma and lack of correct mental health literacy is the steadily increased burden of mental health problems in the adolescent population across the world

(Polanczyk, Salum, Sugaya, Caye, & Rohde, 2015). Although adolescents with severe psychiatric problems most commonly receive treatment, more than half of adolescents with a disorder do not receive the treatment they are in need of (Merikangas, Nakamura, & Kessler, 2009). As already mentioned previously, early detection is key and, if left untreated, mental health issues not only have the negative impact of the illness itself, they also have dire consequences for several areas of everyday life. They negatively impact general health and vocational success, and lead to a higher likelihood of unemployment, low income and stress. Adding to those illness-related consequences, people with mental health issues also have to then cope with consequences inflicted due to stigma, rejection and prejudice (Kutcher et al., 2016; Thornicroft, 2011; Y.-Y. Yang et al., 2015).

One reason for the high number of untreated adolescents is influenced by the way parents, who often facilitate the entry into formal health care, perceive mental illness themselves (Villatoro, DuPont-Reyes, Phelan, Painter, & Link, 2018). Help-seeking behaviour is prolonged or doesn't happen as parents fear being perceived as bad parents, responsible for their child's issues (Villatoro et al., 2018). Help-seeking is further influenced by the parents' perception of what the consequences of a diagnostic labels entail. The fear that their child would have to deal with stigma, stereotypes and prejudice is still a major hindrance in seeking adequate help (Corrigan, 2007). Stereotypes and prejudices the parents might share and project on to their children hinder them in providing necessary support in the help-seeking process and prevent necessary interventions (Gronholm et al., 2015; Villatoro et al., 2018). It cannot be stressed enough how important knowledge about mental health literacy is and how dire consequences of a lack thereof are (Gronholm et al., 2015).

Research has shown that there are gender difference when it comes to the perception and portrayal of mental health issues. For example, men with mental health issues are usually portrayed as being violent and dangerous, whereas women with mental health issues are usually viewed as being dependent and incompetent (Owen, 2012; Villatoro et

al., 2018; Wirth & Bodenhausen, 2009). These differences also manifest in the way the origins of mental health issues are interpreted. Women seem to be more likely to assume that depression is linked to social causes or life stress, whereas men link the causation to individual responsibilities (Swords, Heary, & Hennessy, 2011; Wirth & Bodenhausen, 2009). These differences can be put in the context of traditional gender roles, but can also be attributed to gender specific sources of information. For example, women's magazines, as a source of information, are significantly more likely to cite non-expert sources, such as people with mental illness compared to men's magazines which rely more on expert accounts (Yang, Tang, & Bie, 2017). It could therefore be assumed that men and women hold different causational and interventional beliefs, as well as a different wish for social distance as a measure for stigma.

In recent years people have developed a more differentiated view of mental health issues, for example more people understand that there can be biological causes for mental health issues. Nevertheless, due to a variety of reasons, the stereotype of the dangerous, erratic and violent person suffering from a mental illness, as well as the public's rejection of people with schizophrenia, has increased steadily (Matthias C. Angermeyer & Matschinger, 2005; Parcesepe & Cabassa, 2013).

One further aspect considered of importance in research concerned with stigma is familiarity with people with mental health issues. There is an inverse association between the familiarity and stigma. Familiarity is a complex construct, which can be defined as the knowledge of mental health issues, learned through one's own experiences (Corrigan & Nieweglowski, 2019). In this study the interaction between contact with people with mental health issues and its influence on causational and interventional beliefs, as well as stigma, will be assessed.

The wide-reaching impact and numerous consequences of stigma and how it influences society's view of people with mental health issues, their families and close friends, the way they perceive themselves, seek help, adhere to medication, the outcome of interventions, integration into the community and general quality of life, to name

just a few, show why research in this field is important. Using the desire for social distance as a measure for stigma is a widely used method. It shows individual discrimination, as the desire for distance is the last step in the stigma process. To put it another way, it makes the reluctance or acceptance of engaging on a social level with a person suffering from mental disorders visible (Link & Phelan, 2001; Makowski et al., 2016; Speerforck et al., 2017).

It is necessary to have a better understanding of lay people's beliefs about causation, attribution and possible interventions and their connection to a wish for social distance as a measure for stigma, and how these beliefs, influenced by socio-demographic and cultural factors, knowledge or unawareness of a diagnosis of schizophrenia, further or reduce the stigma associated with it.

1.3 Cultural beliefs

Culture shapes views and experiences of the world on an individual and collective level by providing a mutual and internalised frame of reference. All human behaviour and daily challenges are deeply influenced and mitigated by culture. Communication within the cultural framework of the group enables its participants to do so without having to think about every interaction and gesture. It implicitly exists in the minds of its members and is learned throughout the course of one's lifetime. This framework in extension also influences health-related knowledge, beliefs and behaviour (Kagawa, Singer et al., 2016).

In order to better understand what factors influence lay diagnosis, causal and interventional beliefs and the wish for social distance, this study will compare the respondents' cultural backgrounds as well as their personal characteristics, such as gender, age and education (Olafsdottir & Pescosolido, 2011).

1.4 Schizophrenia

Schizophrenia is defined by the World Health Organisation (WHO) in its latest version of the International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) Version for 2010 as follows:

The schizophrenic disorders are characterized in general by fundamental and characteristic distortions of thinking and

perception, and affects that are inappropriate or blunted. Clear consciousness and intellectual capacity are usually maintained although certain cognitive deficits may evolve in the course of time. The most important psychopathological phenomena include thought echo; thought insertion or withdrawal; thought broadcasting; delusional perception and delusions of control; influence or passivity; hallucinatory voices commenting or discussing the patient in the third person; thought disorders and negative symptoms.

The course of schizophrenic disorders can be either continuous, or episodic with progressive or stable deficit, or there can be one or more episodes with complete or incomplete remission. (WHO, 2010, para. F.20)

For schizophrenia, the distribution of disease or incidence, which is the number of new cases per year, ranks at about 15 per 100,000. Point prevalence, the total number of cases, recently and previously existing at a certain point in time, ranges at around 4.5 per population of 1000 (Tandon, Keshavan, & Nasrallah, 2008). The risk of developing schizophrenia over one's lifetime is estimated at 0.7%. The lifetime prevalence of depression ranks between 16.9% and 41.4%, depending on the data gathering method (Moffitt et al., 2010). There are several risk factors which increase the likelihood of developing schizophrenia. An increased risk exists if a family member is affected and if there is a background of migration (Tandon et al., 2008). Some studies claim that men are more often affected than women, others claim it is almost even (McGrath, 2007; Tandon et al., 2008). People who grew up in cities are more likely to develop schizophrenia compared to people who were brought up in the country (McGrath, 2007). The most common reason, which explains 80% of cases, is a combination of genetic factors such as gene-environment interactions, the number of chromosomal regions and the presence of genes associated with schizophrenia. Despite intensive research and advances in molecular biology, only regions on genes and chromosomes could be identified. So far no one single gene has been linked to a potential development of schizophrenia (Hilker et al., 2018; Keshavan, Tandon, Boutros, & Nasrallah, 2008). Further outside factors, such as the use of cannabis, prenatal malnutrition or infection and postnatal complication, could increase the risk of

developing schizophrenia. The relevance or nature of these outside factors is still unclear (Keshavan et al., 2008). Twin studies show that there is a substantial genetic risk factor, but the low concordance rate of 33% in monozygotic twins demonstrate that illness vulnerability is not solely influenced by genetic factors (Hilker et al., 2018). The precise interaction and mediation between neurobiological mechanisms, various genetic and environmental factors still remains unclear (Tandon et al., 2008).

The financial costs of the disease are immense. According to estimates these amount to about 106 thousand dollars per individual suffering from schizophrenia annually - these include costs such as hospital bills, pensions and loss of wages (Evensen et al., 2016). This does not even compare to the catastrophic effect of the emotional distress the disorder has on the people affected and their extended family.

Schizophrenia has a high comorbidity with suicide; a third of all people suffering from schizophrenia attempt suicide, about 15% of which are successful (Hawton, Sutton, Haw, Sinclair & Deeks, 2005). On a global level, the illness reduces the lifetime of a person by an average of 10 years (WHO, 2002). The general public perceives people with schizophrenia as being dangerous and most people would therefore socially distance themselves (Durand-Zaleski, Scott, Rouillon, & Leboyer, 2012).

Schizophrenia is a severe mental illness that affects and impacts not only the lives of the people affected by it in a devastating way, but also the lives of the people around them including their families. It exists all over the world and ranks as one of the ten leading causes of disability in people aged 18 to 44 (WHO, 2002). An important route to ensuring equality for people with mental illnesses is further recognition of the symptoms, ensuring early help seeking and interventions. A reduction in prejudice and discrimination at a societal level might also ensure a trouble free recovery and a high quality of life. To do so successfully, a better understanding of symptom recognition, attributions towards causation, available interventions and the wish for social distance

has to be found - identifying to what extent these factors are influenced by culture, socio-demographic factors, such as gender age and level of education would also be of benefit. This knowledge can render useful information for evidence based public education efforts. The current work focuses on the UK, Austria and Germany, countries which show similarities, yet also marked differences at societal and policy levels.

1.5 Research Questions

This study will compare the UK sample to the Austrian/German sample and determine 1) whether members of the general public in these three European countries (the UK, Austria, and Germany) differ in their awareness of symptoms of schizophrenia and recognition. Which factors: (a) demographic characteristics (age, gender and level of education); (b) cultural differences; (c) knowledge, recognition or incorrect identification of the diagnosis and (d) contact with a person with mental health issues, have an impact on; 2) causational beliefs of schizophrenia, 3) suitable interventions for an individual presenting with the described symptoms and 4) differences in the desire for social distance, as a measure for the level of stigma?

2. Method

2.1 Participants

A total of 1046 participants aged 17 or above, of Caucasian origin, participated in cross-sectional surveys conducted in London (UK sample, $N = 526$) and Vienna (Austria/Germany sample $N = 520$). The Austria/Germany sample consisted of two thirds Austrians ($n=342$) and one third Germans ($n=172$); significant differences at the 5% level were found in two variables between the Austrian and German group - the environmental causal beliefs and a change in lifestyle interventions. In these two conditions the groups were separated. As there were no differences in any of the other variables at the 5% level, Austria and Germany were combined for all other analysis. The UK sample was selected from a larger data set in order to be as similar as possible to the Austria/Germany sample in terms of gender, age and as far as possible educational level, as there was no access

to responses other than participants' demographic details. Women constituted around 54% of both samples, $\chi^2(1) = 0.05$, $p = .85$. The mean age of respondents was 31.3 years ($SD = 11.42$) in the UK and 32 years ($SD = 13.64$) in Austria and 31.2 years ($SD = 12.65$) in Germany, $t = -0.46$, $p = .65$. The samples differed in their educational attainments. In the UK 38% were graduates compared to 24% in the Austrian and 29 % in the German sample, $\chi^2(1) = 22.28$, $p < .001$.

2.2 Measure

The intellectual disability literacy scale for assessment of knowledge, beliefs and attitudes to intellectual disability (IDLS) designed by Scior and Furnham (2011) was used in this study. The questionnaire was translated from its original English version into German using the 'Parallel Blind Technique' and a 'Translation/Back-Translation' (Behling & Law, 2000). The questionnaire consists of the following parts:

2.2.1 Recognition

The IDLS starts with a diagnostically labelled or unlabelled vignette of a man in his early 20s, displaying the diagnostic criteria for schizophrenia (World Health Organisation, 1990), as described in Scior and Furnham (2011). Of the UK sample 265 participants received the labelled version, and 258 of the Austrian/German sample. Both vignette versions were identical other than inclusion/omission of the diagnostic label, consisting of "schizophrenia" in the UK and „Schizophrenie" in Austria and Germany. After the presentation of the vignette, for the unlabelled version, participants were asked "what would you say is going on with X?". If multiple responses were given, the response closest to the correct diagnosis was registered.

2.2.2 Causal and intervention beliefs

Respondents rated their agreement with 22 potential causes of the behaviours described in the vignette and 22 sources of help, using a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). The causal items are reduced to form four subscales: biomedical (5 items), environment (7 items), adversity (5 items) and

supernatural (5 items). The intervention items are reduced to three subscales: expert help (6 items), lifestyle changes (11 items) and religious/spiritual sources of help (5 items). Higher scores indicate increased agreement. (Scior & Furnham 2011)

2.2.3 Social distance

Participants rated their intention for social contact with someone as described in the vignette by responding to four statements relating to social contact in situations with increasing intimacy (live next door, spend an evening socialising, make friends, have the person marry into one's family), using a 7-point fully anchored Likert scale (1 = disagree strongly to 7 = agree strongly). The social distance score was determined as the mean of reversed responses, with higher scores indicating a stronger desire for social distance. (Scior & Furnham, 2011)

2.2.4 Socio-demographic characteristics

The last section of the IDLS is designed to obtain detailed socio-demographic data such as respondents' contact to people with mental health issues, age, gender and educational attainment (Scior & Furnham, 2011).

2.3 Procedure

Potential participants were approached in two ways - either via a link sent via email circulation or social networks which led to an anonymous web survey; or in person, who were given the paper and pencil version of the online survey and returned those anonymously. They were asked to complete a brief survey on their views of personal difficulties in others. Overall, 84% completed the web version, the remainder the paper version. It was not possible to calculate a response rate, given that the number who received an email invitation or an invitation via social network could not be tracked. Participants were randomly assigned the labelled or unlabelled vignette.

2.4 Data analysis

The data was analysed using SPSS version 23. Exploration of the data revealed that the beliefs in supernatural causa showed a significant positive skew, i.e. overall participants tended to

disagree. Consequently, scores were box cox transformed. All statistical analyses were carried out using the transformed data.

3. Results

3.1 Awareness of symptoms of schizophrenia

The responses to the open question, "what would you say is going on with X?" posed to the participants with the unlabelled vignette were examined to compare awareness of the symptoms of schizophrenia and the differences between the UK and Austria/Germany. Categories for the answers were formed based on the inductive categories development (Mayering, 2000). All answers were subsequently coded by two researchers independently. Discrepancies were discussed until total agreement was reached. If multiple responses were given, the response closest to the correct diagnosis was registered, if there was no correct recognition the first answer was used for coding.

Only the unlabelled data was used for this analysis. Of the 261 UK participants presented with the unlabelled vignette, 30% ($n = 78$) recognised a possible schizophrenia to only 13% ($n = 35$) of the Austrian/German sample ($n = 258$), $\chi^2 (1) = 21.1$, $p < .001$. These differences cannot be attributed to socio-demographic characteristics of the samples presented with the unlabelled vignettes - both groups had similar educational attainment, $\chi^2 (1) = 2.93$, $p = .09$. In the UK sample 74% ($n = 191$) of participants presented with the unlabelled vignette were educated to the age of 18 and 27% ($n = 69$) to graduate level. In the Austria/Germany sample 80% ($n = 195$) were educated to the age of 18 and 20% ($n = 49$) were graduates. The mean age of respondents was similar, 30.1 years ($SD = 11.98$) in the UK and 31.6 ($SD = 13.57$) in Austria/Germany, $t (521) = -1.35$, $p = .18$. The gender ratios in both samples were also similar, with 53% of those presented with the unlabelled vignette female in each locality, $\chi^2 (1) = 1.0$, $p = .54$. Prior contact with someone with mental health problems was noted by 68% ($n = 177$) in the UK sample and by 75% ($n = 196$) in the Austrian/German sample $\chi^2 (1) = 3.16$, $p = .08$.

Of the UK sample 32.5% recognised the diagnoses correctly, 8.3% recognised a symptom relating to schizophrenia and 29.2% stated that

the reason for the behaviour was a mental health issue. Compared to these results only 13.4% of the Austrian/German sample recognised schizophrenia, 9.9% described a symptom relating to schizophrenia and 23.4% a general mental health issue. The Austrian/German sample favoured some form of social (18.7%) or neurological/biological issue or trauma with 8.3% of the answers compared to only 2.5% and 3.3% respectively in the UK sample. Both groups had a high rate of falsely recognising depression instead of schizophrenia with 15.5% and 12.3% of the answers in the UK and Austrian/German sample. Although the vignette specifically stated that drugs were not involved, 4.2% of the participants in the UK believed that they were the cause for the behaviour compared to 1.2% of answers given in the Austrian/German sample.

3.2 Causal beliefs and interventional beliefs

Two way ANOVAS were conducted for three of the subscales of causal believes (adversity, biomedical and spiritual/fate causation) and two subscales of interventional believes (expert help, religion). Here a two-way analysis of variance having two levels for country (UK; Austria/Germany) and three levels for knowledge of diagnosis (diagnosis known, diagnosis not known/recognition, diagnosis not known/no recognition). As there were significant differences at the 5% level between the Austrian and German group for the environmental causal believe subscale, the two-way analysis of variance was conducted on three levels for country of origin (UK, Austria, Germany) and two levels for diagnosis (knowledge of diagnosis + diagnosis not known/recognition, diagnosis not known/no recognition) as there were no differences between knowledge of diagnosis and recognition of diagnosis at the 5% level. In the lifestyle change as interventional belief, there was a significant difference at the 5% level for Austria and Germany, as well as for the three diagnostic variables (known, recognised, not recognised).

3.2.1 Adversity causal believe

There was a significant main effect of country, $F(1, 1039) = 24.55$, $p < 0.001$, $\eta_p^2 = .02$. The Austrian/German sample agreed more with adversity as a cause ($M = 3.97$, $SD = 1.47$), than the UK sample ($M = 3.31$, $SD = 1.38$).

There was also a main effect for diagnosis, $F(2, 1039) = 16.35$ $p < 0.001$, $\eta^2 = .03$. Participants who neither knew nor recognised the diagnosis were more inclined to believe in adversity as a cause ($M = 3.97$, $SD = 1.36$) than those who knew the diagnosis due to the labelled questionnaire ($M = 3.43$, $SD = 1.51$) or recognised the diagnosis ($M = 3.42$, $SD = 1.35$).

There was also a significant interaction between the country and the diagnosis, $F(2, 1039) = 9.7$ $p < 0.001$, $\eta^2 = .02$. The Austrian/German Sample believed strongest in adversity in the case of unlabelled questionnaire and no recognition ($M = 4.05$, $SD = 1.4$) and in the labelled condition of the questionnaire ($M = 3.94$, $SD = 1.53$). The least likely group to believe in adversity in the Austrian/German sample were the people who recognised schizophrenia correctly ($M = 3.76$, $SD = 1.41$). The UK sample agreed less with adversity as a cause, especially the people who received the labelled questionnaire ($M = 2.94$, $SD = 1.32$), followed by the UK participants who recognised the diagnosis ($M = 3.26$, $SD = 1.3$). In the UK sample most people agreed with adversity as a cause who did not know and not recognise schizophrenia as a diagnosis ($M = 3.87$, $SD = 1.31$).

3.2.2 Biomedical causal belief

There was only one main effect for diagnosis $F(2, 1039) = 29.65$ $p < 0.001$, $\eta^2 = .05$. Participants who received the labelled questionnaire agreed most with biomedical reasons as being a cause for schizophrenia ($M = 4.18$, $SD = 1.44$), followed by the participants who recognised the diagnosis from the unlabelled questionnaire ($M = 4.04$, $SD = 1.15$); unlabelled/no recognition ($M = 3.44$, $SD = 1.48$). There was neither a significant effect for country nor a significant interaction effect.

3.2.3 Supernatural causal belief

The belief in supernatural causes had to be box cox transformed as very few people believed in supernatural causes and the assumption of normality was violated. In order to give a complete picture the results are nevertheless reported. There was only one significant main effect for diagnosis $F(2, 1039) = 33.34$ $p < 0.001$, $\eta^2 = .06$. Participants who knew about the diagnosis disagreed the most with

fate as a cause ($M = .12$, $SD = .17$), followed by participants, who recognised the diagnosis ($M = .13$, $SD = .17$) and least but still strongly disagreeing participants who did not recognise the diagnosis ($M = .22$, $SD = .2$). The main effect for country and the interaction effect were non-significant.

3.2.4 Environmental causal belief

As Austria and Germany differed at a 5% level the countries were separated in this condition. In the analysis of knowledge of diagnosis the countries did not differ at a 5% level, and therefore the categories were combined. There was a main effect for country $F(2, 1033) = 24.2$ $p < 0.001$, $\eta^2 = .05$, with Austrian participants agreeing the most with environment as a cause for schizophrenia ($M = 2.87$, $SD = 1.27$), followed by German participants ($M = 2.56$, $SD = 1.21$) and the UK participants agreeing the least ($M = 2.23$, $SD = 1.1$).

There was also a significant main effect for diagnosis $F(1, 1033) = 75.6$ $p < 0.001$, $\eta^2 = .07$. There was greater agreement for participants who didn't recognise the diagnosis ($M = 2.95$, $SD = 1.2$) compared to those who knew or recognised the diagnosis ($M = 2.19$, $SD = 1.12$).

There was no significant interaction effect.

3.2.5 Expert help intervention

There was a significant main effect for country $F(1, 1039) = 12.49$ $p < 0.001$, $\eta^2 = .01$. The UK participants agreed significantly stronger with expert help ($M = 5.58$, $SD = .96$) than the Austrian/German sample ($M = 5.21$, $SD = 1.21$).

There was also a significant main effect for diagnosis $F(2, 1039) = 13.61$ $p < 0.001$, $\eta^2 = .03$. Participants who recognised the diagnosis agreed strongest with expert help as intervention ($M = 5.69$, $SD = .84$), followed by the participants who knew about the diagnosis ($M = 5.52$, $SD = .99$). Participants who did not recognise schizophrenia as a diagnosis were least likely to agree with expert help as an intervention ($M = 5.16$, $SD = 1.25$).

There was no significant interaction effect.

3.2.6 Religious intervention

There was a significant main effect for diagnosis $F(2, 1039) = 19.74$ $p < 0.001$, $\eta^2 = .37$. Participants who recognised schizophrenia from the unlabelled questionnaire agreed least with religion as an intervention ($M = 1.45$, $SD = .79$), followed by people who knew the diagnosis ($M = 1.61$, $SD = .98$). People who didn't know and didn't recognise schizophrenia agreed most with religion as an intervention ($M = 2.0$, $SD = 1.29$).

There was no significant main effect for country and no significant interaction effect.

3.2.7 Lifestyle intervention

There was a significant main effect for diagnosis $F(2, 1030) = 23.2$ $p < 0.001$, $\eta^2 = .04$. Participants who recognised the diagnosis agreed least that lifestyle changes would be an effective intervention for schizophrenia ($M = 2.66$, $SD = 1.10$), followed by participants who knew about the diagnosis ($M = 3.25$, $SD = 1.23$). People who did not recognise schizophrenia agreed strongest with the notion that lifestyle changes could be considered as an intervention ($M = 3.72$, $SD = 1.30$).

There was no significant main effect for country nor a significant interaction effect.

3.3 Social distance

A two-way ANOVA was conducted for the wish for social distance, a two-way analysis of variance having two levels for country (UK; Austria/Germany) and three levels for knowledge of diagnosis (diagnosis known, diagnosis not known/recognition, diagnosis not known/no recognition). Due to scaling, lower scores indicate a higher wish for social distance.

There was a significant effect for country $F(1, 1038) = 116.99$ $p < 0.001$, $\eta^2 = .10$. Austrian/German participants expressed a higher wish for social distance ($M = 2.6$, $SD = 1.32$) compared to the UK participants ($M = 3.89$, $SD = 1.52$).

There was also a significant main effect for diagnosis $F(2, 1038) = 3.83$ $p < 0.001$, $\eta^2 = .01$. Participants who did not recognise

schizophrenia reported the highest wish for social distance ($M = 3.10$, $SD = 1.54$) followed by the participants who recognised the diagnosis ($M = 3.19$, $SD = 1.36$). Participants who knew about the diagnosis had the least wish for social distance ($M = 3.38$, $SD = 1.62$).

3.4 Predictors for recognition, causations, interventions and wish for social distance

In order to examine the influences on whether the diagnosis was recognised or not a logistic regression analysis was conducted. For the causational beliefs, interventional beliefs and wish for social distance, linear regressions were used.

3.4.1 Predictors for recognition of diagnosis

A logistic regression using a stepwise forward method was calculated to predict the recognition of diagnosis based on whether participants had contact with people suffering from mental health issues (0 = no, 1 = yes), age, gender (0 = female, 1 = male), educational level (0 = education to age 16, 1 = education to age 18/ 0 = education to age 16, 1 = graduate) and country (0 = UK, 1 = Austria/ Germany). Only the unlabelled questionnaires were used ($n = 523$), of which 22 were excluded due to missing data. A significant regression equation was found $\chi^2 = 43.03$, $p < 0.001$, with an R^2 (Nagelkerke) = .10. Significant predictors were country, contact with people with mental health problems, and age. People from the UK $OR = 0.37$ [0.24, 0.59], $p < 0.001$, as well as participants who had contact with people suffering from mental health problems $OR = 2.22$ [1.31, 3.78], $p = .003$ and older people were more likely to recognise the diagnosis $OR = 0.97$ [0.95, 0.99], $p = .008$.

3.4.2 Predictors for causations

A linear regression was calculated to predict the causal beliefs subscales and the interventional beliefs subscales. The same predictors could be used for three of the causal belief subscales (adversity, biomedical, fate/spiritual). These included: whether participants had contact with people suffering from mental health issues; age; gender; educational level; country; and knowledge of diagnosis (0 = not recognised, 1 = recognised and knowledge of

diagnosis).

Due to significant differences at the 5% level, countries had to be divided into three groups for the environmental causal belief subscale (0 = UK, 1 = Austria / 0 = UK, 1 = Germany); all other predictors were the same. The subscale fate/spirituality was, as mentioned above, cox box transformed.

Table 1

Predictors for causational beliefs for schizophrenia

	B	SE B	β	R^2
Adversity $F(4,1000) = 71.84^{***}$				.13*
Constant	4.49	0.14		
Country	0.59	0.09	.20***	
Age	-0.03	0.004	-.21***	
Knowledge of diagnosis	-0.48	0.09	-.16***	
Education (16/graduate)	-0.20	0.10	-.07*	
Biomedical $F(1,1003) = 58.88^{***}$				.06***
Constant	3.46	0.07		
Knowledge of diagnosis	0.71	0.09	.24***	
Fate $F(3,1001) = 24.32^{***}$				.07*
Constant	0.24	0.02		
Knowledge of diagnosis	-0.09	0.01	-.23	
Age	-0.001	0.00	-.09	
Gender	0.02	0.01	.07	
Environment $F(6,993) = 29.50^{***}$				.15*
Constant	2.86	0.13		
Knowledge of diagnosis	-0.67	0.07	-.27***	
Country (UK/Austria)	0.53	0.08	.21***	
Gender	0.20	0.07	.08**	

Country (UK/Germany)	0.25	0.10	.08*
Education (16/ Graduate)	-0.29	0.13	-.16**
Education (16/18)	-0.26	0.12	-.11*

* $p < 0.05$, * $p < 0.01$, ** $p < 0.001$

Adversity as a cause was more likely endorsed by Austrian and German participants, older participants, and participants who had no knowledge of the diagnosis, and less likely stated by participants with a higher educational level.

Participants were more likely to endorse biomedical causes for schizophrenia if they had knowledge of the diagnosis.

The opposite was true for fate as a cause for schizophrenia, participants who had no knowledge of the diagnosis were more likely to endorse fate. Women and people of lower age were more inclined to believe in fate as a cause for schizophrenia.

Environment as a cause was endorsed by participants who had no knowledge of the diagnosis. Austrian and German participants, as well as women and people with a lower educational background, were more likely to endorse environment as a reason for schizophrenia.

3.4.3 Predictors for interventional beliefs

A linear regression was calculated to identify predictors for the interventional beliefs subscales. The predictors used were the four causal belief subscales (adversity, biomedical, fate/spiritual, environment), whether participants had contact with people suffering from mental health issues, age, gender, educational level, country (0 = UK, 1 = Austria / 0 = UK, 1 = Germany) and knowledge of diagnosis.

Due to significant differences at the 5% level, the knowledge of diagnosis had to be divided into three groups for the lifestyle interventional belief subscale (0 = recognition, 1 = no recognition/ 0= recognition, 1= knowledge of diagnosis); all other predictors were the same. The subscale fate/spirituality was cox box transformed.

Table 2

Predictors for interventional beliefs for schizophrenia

	B	SE B	β	R^2
Expert Help $F(7, 992) = 49.04^{***}$				.26***
Constant	4.37	0.12		
Cause Biomedical	0.29	0.02	.39***	
Gender	-0.25	0.06	-.11***	
Country (UK/Austria)	-0.33	0.07	-.14***	
Country (UK/Germany)	-0.30	0.09	-.10**	
Contact	0.17	0.07	.07**	
Cause Environment	-0.14	0.03	-.15***	
Cause Adversity	0.11	0.03	.15***	
Fate $F(6, 993) = 46.90^{***}$				.22**
Constant	0.76	0.15		
Cause Fate	1.89	0.194	.32***	
Cause Environment	0.24	0.04	.26***	
Age	0.01	0.00	.08**	
Cause Adversity	-0.09	0.03	-.12**	
Cause Biomedical	0.08	0.02	.10**	
Knowledge of diagnosis	-0.19	0.07	-.08**	
Lifestyle $F(5, 994) = 151.96^{***}$				.43***
Constant	1.33	0.11		
Cause Environment	0.69	0.03	.65***	
Country (UK/Germany)	-0.45	0.09	-.13***	
Country (UK/Austria)	-0.28	0.07	-.10***	
Recognition/Knowledge	0.56	0.10	.22***	
Recognition/No Recognition	0.53	0.11	.20***	

$*p < 0.05$, $**p < 0.01$, $***p < 0.001$

Expert help as an intervention was endorsed by people who believed that the cause for schizophrenia was biomedical or due to adversity. It was less likely to be endorsed by women, participants from Austria and Germany in comparison with the UK, and participants who believed in environmental causes for schizophrenia. Participants who were in contact with people with mental health issues also agreed more with expert help as an intervention.

Fate as an intervention was more likely endorsed if participants believed that there were spiritual, environmental or biomedical causes for schizophrenia. Younger participants, participants who believed in adversity as a cause, and participants with knowledge of the diagnosis were less likely to believe in fate as an intervention.

A change in lifestyle as an intervention for schizophrenia was endorsed if participants believed that the cause for schizophrenia was an environmental one; people from the UK believed more in this intervention than Austrian and German participants. Participants who recognised the diagnosis opposed to those who only knew or didn't recognise the diagnosis were less inclined to believe in lifestyle as an intervention.

3.4.4 Predictors for the wish for social distance

A linear regression was calculated to identify predictors for the wish for social distance. The predictors used were the four causal belief subscales (adversity, biomedical, fate/spiritual, environment), the three interventional belief subscales (expert help, fate, lifestyle change), whether participants had contact with people suffering from mental health issues, age, gender, educational level, country (UK, Austria, Germany) and knowledge of diagnosis (recognition/no recognition/knowledge).

Table 3

Predictors for the wish for social distance

	B	SE B	β	R^2
Social Distance	$F(9,989) = 30.24^{***}$			.22*
Constant	3.30	0.167		
Country (UK/Austria)	-1.35	0.11	-.40***	
Country (UK/Germany)	-1.32	0.13	-.31***	
Contact	0.40	0.10	.12***	
Recognition/Knowledge	0.26	0.09	.08**	
Intervention Lifestyle	0.14	0.05	.12**	
Cause Environment	-0.12	0.05	-.09*	
Education (16/Graduate)	-0.25	0.10	-.08*	
Intervention Religion	0.12	0.05	.08*	
Cause Fate	-0.62	0.28	-.07*	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Austrian and German participants had a higher wish for social distance compared to UK participants. Participants who were in contact with people with mental health issues had a lesser want for social distance, as well as people with a lower educational background and people who identified lifestyle change and religion as an intervention. Participants who had knowledge of the diagnosis, being from recognition or the labelled questionnaire, had a lesser want for social distance than those with no knowledge of the diagnosis. More social distance was endorsed by participants who thought spiritual or environmental reasons were the cause of schizophrenia.

4. Discussion

Knowledge about diseases, be it mental, physical or both, about the specific symptoms, precise recognition, and assumptions about the

underlying causal beliefs are all influences on the course of action, or even more important, if any action will be taken. If mental health issues are experienced, it is essential to know that these are in fact mental health issues and which specific mental health issue it is (Jorm, 2012). It also influences the way people with mental health issues are perceived and how people with mental health issues perceive themselves. This in turn, among other things, influences help-seeking behaviour and adherence to medication. It is therefore surprising how little progress is being made in furthering the lay public's knowledge into mental health literacy.

4.1 Recognition

In this study, similar to other results, most lay people were unable to recognise schizophrenia as the mental illness described in the vignette (Coles et al., 2016; Durand-Zaleski et al., 2012; Furnham & Swami, 2018; Speerforck et al., 2017). The vignette in this study was based on the specific symptoms used in the international classification of diseases to diagnose schizophrenia (Scior & Furnham, 2011). These are the symptoms a person would need to be able to recognise, in order to ensure treatment or support for themselves or others.

Diagnoses by lay people reveal important information about the cultural framework, especially lay people's perception of the cultural belief system, regarding response pathways and social problems influenced by those cultural beliefs (Olafsdottir & Pescosolido, 2011). Here, the comparison describes how lay people within and across two Western countries judged a summary of one of the most serious mental illnesses. Cultural comparisons are often between Western and Eastern countries, as there are some fundamental differences in underlying beliefs (Angermeyer, Matschinger, Carta, & Schomerus, 2014; Furnham & Swami, 2018). In our study, the cultural factor was an important predictor for most outcomes measured.

The UK and Austrian/German recognition rate was low compared to other similar vignette studies (Olafsdottir & Pescosolido, 2011). Although 85.5% of the UK and 59% of the Austrian/German sample recognised the vignette to be some kind of mental health issue, 67.5%

of the UK participants and 86.6% in the Austrian/German sample were unable to make the correct connection with schizophrenia. For comparison, data collected in the course of the Stigma in Global Context - Mental Health Study (SGC-MHS), a coordinated cross national study, which assessed public attitudes and beliefs towards mental health issues, found that 93.4% of a UK and 88% of a German sample identified a mental health issue. In the same study, 62.2% of the UK and 78% of the German sample were unable to recognise schizophrenia from the vignette (Olafsdottir & Pescosolido, 2011). This seems to show that in both studies the vignettes indicate vaguely that the symptoms described implies something being wrong likely relating to a mental health issue. There is, however, no comprehensive health literacy so far. This finding indicates that the mere description of symptoms fails to illicit a specific lay diagnosis. One of the issues with this low recognition rate is that in a first, very important step, people depend on their individual assessments. The illness manifest at the onset with specific symptoms, which need to be recognised by the individual before seeking any further professional help (Olafsdottir & Pescosolido, 2011). It is therefore not surprising that the general public's inadequacy in recognising the specific symptomology has been one of the factors leading to a treatment gap of up to three years for psychosis (O'Callaghan et al., 2010). The consequences of which include irreversible neurodegenerative processes and higher suicide risks to name just two (Ostojić, 2012). Therefore early recognition and identification present an opportunity to intervene at the onset of the disease, which can delay or even prevent the development of a chronic psychotic illness (Kutcher et al., 2016; Tiffin & Welsh, 2013)

Within the cluster of general mental health issues are the respondents who falsely recognised schizophrenia as depression. 12.3% of the Austrian and 15.5% of the UK sample mistakenly identified depression as the diagnosis. This mistake has also been reported in other research, but the reason for this misidentification is so far not known (Farrer, Leach, Griffiths, Christensen, & Jorm, 2008). One explanation may be that there is a predominant emphasis

on depression in public health programs and in the public discourse (Farrer et al., 2008). This false diagnosis could however change the course of action substantially. As already stated, recognition is the first step to understanding and facilitating help-seeking behaviour. It can't be stressed enough that, especially with schizophrenia, early recognition and intervention is key to preventing dire consequences that can arise from, or as a consequence of, the illness (O'Callaghan et al., 2010).

4.2 Causational beliefs

Knowledge influences the causational beliefs of the respondents substantially. The underlying causational beliefs in turn influence, among other things, which course of action will be recommended, how people with schizophrenia are perceived, perceive themselves, and how affected families are judged.

Participants who received the unlabelled vignette and did not recognise schizophrenia favoured adversity, environment, and fate as likely causes of schizophrenia. The supernatural cause subscale had to be box cox transformed as very few people believed in supernatural causes and the assumption of normality was therefore violated. In order to provide a complete picture, the results were nevertheless reported, but cannot be generalised. The items were included to facilitate cross cultural comparisons. In Western countries, mental health issues are more likely to be attributed to biomedical or social reasons, whereas in African and Asian countries mental health issues are also explained by supernatural or religious causes (Scior & Furnham, 2011).

Having no knowledge of the diagnosis made people more likely to believe in an environmental cause. This cause included items explaining the symptoms of schizophrenia as being due to getting overly spoiled as a child, having an absence of daytime occupation, poor schooling, a broken home, a lack of intimate relationships, and being detached from their extended family (Scior & Furnham, 2011). Unawareness of the diagnosis also made people endorse items describing adversity as a cause. Adversity items in the questionnaire combine causations such as financial worries, family arguments,

recent traumatic incidents such as a traffic accident, suffering abuse as a child and the recent death of a relative or a close friend (Scior & Furnham, 2011). These two causes, as mentioned earlier, were endorsed by participants who had no knowledge of the diagnosis. Especially the environmental cause appears to indicate a tendency to attribute blame towards the family. This assumption could further affiliate stigma for family members and impact their ability to support (Clement et al., 2015; Shi et al., 2019). It could also impact the help-seeking behaviour of the person if confronted with such stereotypes (Shi et al., 2019). This combination of favouring social causes coupled with a lack of knowledge was also observed in other studies (Angermeyer, Holzinger, & Matschinger, 2009; Olafsdottir & Pescosolido, 2011).

Environment as a cause was more likely to be favoured by women. One explanation for this gender difference could be that women are more likely to link mental health issues to social causes or life stress (Swords et al., 2011; Wirth & Bodenhausen, 2009).

In contrast, participants who had knowledge of the diagnosis, either due to recognition or because they had received the labelled vignette, were more likely to endorse biomedical causes. This result is also found in other studies. It seems that knowledge of a specific mental health issue elicits the belief in an underlying genetic or biomedical causation (Olafsdottir & Pescosolido, 2011).

It cannot be stressed enough how important it is to further a better understanding of the underlying causes for mental health issues. False knowledge of causal beliefs impact the stigmatised perception of people affected, their families, general help-seeking behaviour, and support.

The cultural background strongly influenced the respondents underlying causal belief. The Austrian/German sample favoured adversity and environment as causations. This finding could be attributed to the lower recognition rate within the Austrian/German sample. The cultural component was a strong predictor; in most cases it explained more of the variance than the intrapersonal predictors, such as gender or age. This finding supports other research describing mental health knowledge as being less likely to be

associated with who people are on an individual level, and rather being ingrained into people's cultural belief systems (Olafsdottir & Pescosolido, 2011).

People adapt their attitudes and beliefs according to information gathered from observed and reported data (Scior & Furnham, 2011). One factor influencing this knowledge gap is the lack of reporting on causations by the media (Yang et al., 2017). Newspapers and magazines, as well as television and movies, support or refute stereotypes and misconceptions (Nawková et al., 2012; Yang et al., 2015). They have an immense impact on the general public's attitude and knowledge about mental health issues (Ray & Hinnant, 2009). More than half of the articles in US men's and women's health and lifestyle magazines concerned with mental health issues failed to depict any mention of the underlying causations (Yang et al., 2017). If a cause was reported, psychosocial stress was found to be most prominently discussed in women's magazines. In addition, stereotypical depictions of schizophrenia in news and movies often misrepresented the causes, symptoms, and treatments of the illness (Owen, 2012). Public opinion is influenced by the media's presenting specific facts in the foreground whilst at the same time downplaying others (Yang et al., 2015). Interventions therefore have to have a focus on communicating not only knowledge of the specific symptoms, but also the underlying cause to lessen stereotypes and stigma.

4.3 Interventional beliefs

In this study, in accordance with other studies, the connection between underlying causal belief and treatment recommendation could be confirmed (Jorm, 2012; Kelly et al., 2007; Villatoro et al., 2018).

The causal belief that schizophrenia was due to biomedical reasons triggered respondents to recommend expert help. This connection was corroborated in other studies (Olafsdottir & Pescosolido, 2011; Speerforck et al., 2017). Biomedical causal beliefs have in other studies prompted the endorsement of all suggested interventions (Speerforck et al., 2017). In this study, however, this phenomenon could not be observed; people who endorsed

biomedical causes did not believe that a change in lifestyle was a suitable intervention for schizophrenia.

Similar to other studies, the belief in adversity as a cause led participants to recommended expert help (Speerforck et al., 2017). Adversity included items such as the recent death of a family member or close friend (Scior & Furnham, 2011).

Fate as an intervention, which included items such as praying, seeing a religious person/clergy, a spiritual or faith healer, and being more religious, was considered helpful if participants believed in spiritual, environmental or biomedical causes. Only participants believing adversity to be the cause negated fate as a useful intervention.

Respondents who believed that schizophrenia was caused by environmental factors did not endorse expert help as a viable intervention. They were more inclined to endorse a change in lifestyle as an appropriate intervention. The items for the change in lifestyle cluster include suggestions such as getting a good talking to from parents, socialising more, and finding a job (Scior & Furnham, 2011). These beliefs could lead to further public stigma and be harmful to the person affected and their family members (Olafsdottir & Pescosolido, 2011). Family members have to cope with their social network consisting of neighbours, friends, and co-workers assigning blame to them for their relative suffering from mental health issues. If people believe in inadequate interventions, such as a good talking to from the parents, as a helpful intervention for people suffering from schizophrenia, this belief could lead to an increased stressor for the person with mental health issues and their family. Studies report that people within the social environment express disapproval if they perceive the family member's recovery as too slow. This external stress can lower the family's ability to be an asset and support help-seeking behaviour (Clement et al., 2015).

In other studies, the ability to recognise the diagnostic label correctly influenced the treatment recommendations (Anthony F. Jorm, Mackinnon, Christensen, & Griffiths, 2005; Olafsdottir & Pescosolido, 2011). Surprisingly, in this study knowledge did not

influence the decision on whether expert help was a suitable intervention. However, participant who had knowledge of the diagnosis, including those who recognised, as well as those who were told in the vignette about the diagnosis, were less likely to endorse fate as a suitable intervention. Participants who were able to identify schizophrenia correctly from the vignette were less likely to endorse a lifestyle change as an intervention.

Cultural differences could again be observed. Respondents from the UK tended to endorse biomedical and lifestyle changes more than participants from Austria/Germany. Tendencies towards favouring lifestyle change as an intervention could also be observed in studies conducted in Australia and China (Chen et al., 2017; Anthony F. Jorm et al., 2005; Wu et al., 2017). As mentioned above, favouring lifestyle intervention as an intervention could further stigma towards people suffering from mental health issues and their families (Clement et al., 2015).

Studies have shown that contact is a promising factor in increasing the general public's knowledge and reducing stigma (Chisholm et al., 2016). In the socio-demographic part of the questionnaire, participants were asked whether they had contact with anyone with a mental health problem. If they had contact, it increased the belief that expert help was the appropriate intervention for the issue described in the vignette. This result supports other findings which concluded that any intervention should include different aspects. It should provide knowledge on symptoms and underlying causes, as well as knowledge on evidence based treatment options. But it should also provide some kind of contact, for example equal status interactions between people recovering from mental health issues and the general public (Corrigan & Nieweglowski, 2019; Wang & Lai, 2008). These ideas are based on the stigma reducing effects of familiarity, which have been shown to have a positive effect (Corrigan & Nieweglowski, 2019; Jensen, Morthorst, Vendsborg, Hjorthøj, & Nordentoft, 2016; Svensson & Hansson, 2014).

Similar to other studies there is a clear need for better mental health literacy, as the beliefs held by lay participants seem to

lead to inadequate help-seeking behaviour and are delaying necessary and potentially life-saving interventions (Wu et al., 2017).

4.4 Wish for social distance

Two recent meta-analyses have identified that stigma, especially individual stigmatizing attitudes and self-stigma, appear to be major obstacles to seeking help when affected by a mental health issue (Angermeyer, van der Auwera, Carta, & Schomerus, 2017; Clement et al., 2015). Considering the dire consequences of delayed interventions and the average three-year gap before seeking help, interventions have to find a way to reduce this unnecessary burden from an already difficult situation (O'Callaghan et al., 2010).

Measuring the desire for social distance in order to assess stigma is widely used as a method. Making individual discrimination visible, the desire for distance is the last step in the stigmatisation process, as it represents the reluctance or willingness of engaging with someone suffering from mental health issues on a social level (Link & Phelan, 2001; Makowski et al., 2016; Speerforck et al., 2017).

In this study German and Austrian respondents had a greater wish for social distance than people from the UK. There was no explanation found in other studies. It could be due to different cultural tendencies of answering in a socially desirable way, but no direct comparison in this respect could be found.

Contact with someone with mental health issues was a stigma reducing factor. This fact was confirmed in other research (Angermeyer et al., 2017; Sowislo et al., 2017). As mentioned above, this implies that interventions should not only convey information and knowledge about mental health literacy, but also provide opportunities for the general public to gain familiarity with people recovering from mental health issues (Corrigan & Nieweglowski, 2019; Sowislo et al., 2017). This could counter stereotyping of people with mental health issues. Stereotypes by themselves are not automatically wrong or negative, but not useful when trying to achieve a fair and rational judgment about individuals. In order to reduce these, more information on an individual level is needed,

which could be achieved by enabling the general public, through equal-status interactions, to better understand people with severe mental illness (Corrigan & Nieweglowski, 2019; Rössler, 2016).

This study found a connection between people who had no knowledge of the diagnosis and those favouring environmental causes as the root for presenting schizophrenia specific symptoms. These respondents also presented with a higher wish for social distance. The answers in this cluster assign blame to the individual suffering from schizophrenia and their family. These beliefs could lead to increased self-stigma and affiliate stigma, which has a detrimental effect on help-seeking, the family, and the support provided (Shi et al., 2019). The feelings of shame and distress, due to the internalisation of the public's stereotypical prejudice towards themselves and the family's assumed role in their illness can affect the relationship, increase the feeling of burden, affect the ability to provide the care needed and the capacity of everybody working closely with health care professionals to ensure the best possible care (Shi et al., 2019).

In contrast, people who believed in an underlying biomedical reason for schizophrenia indicated a lower wish for social distance than respondents believing in adversity or environment being the underlying cause. These findings are in accordance with other research stating that the perception of attribution of causation elicits different attitudes towards people with mental illnesses (Jeong, 2007; Yang et al., 2015). The want for less social distance could be explained by findings which show a connection between the causal attribution for mental health issues associated with outside factors and less not with individual responsibilities. Meaning, if the cause of an illness is considered to be beyond the individual's control, such as genetic or biomedical factors, the reactions by the general public appear to be more compassionate and there seems to be a greater willingness to help (Jeong, 2007).

The study's findings contradicts other research which found that knowledge about the diagnosis of schizophrenia increased the wish for social distance (Angermeyer et al., 2009; Corrigan, 2007). In

this study knowledge lowered stigma.

As the concepts of knowledge and belief of causation are so intertwined with recommendations for interventions and stigma it is important to design interventions which address all of these in an appropriate way; not only conveying knowledge, but also including an exchange between people with mental health issues and the general public to reduce unhelpful and damaging stereotypes.

5. Conclusion

Studies have shown that mental health issues cannot be considered an aberrant experience, affecting only a stigmatised minority. The expectation of suffering some form of diagnosable mental disorder during one's lifetime is becoming the norm (Schaefer et al., 2017).

The differences in knowledge and causational beliefs do not only influence which help is recommended, but also among other things affects the way people suffering from mental health issues are perceived and perceive themselves. This in turn influences quality of life, help-seeking behaviour and the positive or negative course of the illness.

This study supports the view that knowledge about the specific diagnosis and contact with people dealing with mental health issues lowered the wish for social distance.

As contact has been shown to reduce stigma (Angermeyer et al., 2017; Sowislo et al., 2017), it should be considered an important resource to include when designing future interventions (Corrigan & Nieweglowski, 2019).

Another valuable input to consider is the involvement of people with mental health issues. They are experts on what helps and hinders help-seeking and how to cope with stigma (Clement et al., 2015).

A hopeful change is the improvement of stigmatising attitudes within the young generation and should therefore further encourage the implementation of school-based anti-stigma and mental health literacy programmes (Angermeyer et al., 2014).

Interventions should provide general mental health knowledge, but also specific symptom descriptions, underlying causations and

appropriate interventions, which lead to decisions mostly based on mental health literacy (Speerforck et al., 2017). Additionally, incorporating the stigma reducing concept of familiarity, the possibility of interactions with people who are recovering from serious mental health issues should be included (Clement et al., 2015).

5.1 Limitations

Several limitations of the current study should be noted. The results of the respondents that received the unlabelled vignette should be viewed with caution as most participants failed to recognise schizophrenia. Therefore, their social distance and belief ratings referred to other presumed causes of the difficulties presented. To lessen this issue half of the sample was presented with an identical diagnostically labelled version of the vignette.

In both locations a convenience sampling approach was employed. We matched participants from the UK and Austria/Germany on socio-demographic characteristics to allow for a meaningful comparison. Caution should nevertheless be exercised in generalising the findings to the general public.

As always in questionnaires with self-reported attitudes and beliefs, social desirability affects self-reported attitudes. It cannot be assumed that the results are a genuine reflection of the respondents' attitudes or their likelihood to behave in certain ways in real life situations.

5.2 Future research

This and other studies have shown the influence of culture on mental health literacy. Culture is a very complex and diverse concept influenced by countless factors. There was, however, a lack of knowledge describing the specific factors leading to the cultural differences in knowledge. Future research should try to control confounding influences, such as differences in socially desirable answering patterns. This could help achieve a better understanding of the underlying cultural differences.

Future research should employ alternative ways of assessing

attitudes. For example, by studying implicit attitudes (Greenwald, McGhee & Schwartz, 1998; Wilson & Scior, 2014) and by further investigating the relationship between self-reported attitudes and actual behaviour.

In the current post-factual climate, it is important that research becomes more tangible and accessible to the general public (Greenhalgh et al., 2019). Many new strategies exist to include the general public and service users in the research process. One idea of citizen science is, for example, the involvement of people who have first-hand knowledge of mental health issues and the recovery process. Because of their input into research topics, study design, data gathering, data analysis, and writing the publications in lay terms, research could become more relevant and increase its reach (Veseth, Binder, Borg, & Davidson, 2017). Based on the results in this study and others confirming the dire need of furthering the general public's mental health literacy, experts by experience should be involved in designing new studies and interventions. They have intimate knowledge of the many obstacles they themselves encountered and had to overcome.

Besides the involvement in study and intervention designs, experts by experience should be part of the interventions themselves. The stigma-reducing effect of contact with people with mental health issues could be shown in this and other studies (Chisholm et al., 2016; Corrigan & Nieweglowski, 2019; Wang & Lai, 2008).

Although current mental health knowledge is something to be worried about, a positive attitude change has been observed in the younger generations (Angermeyer et al., 2014). Future research should evaluate the knowledge of different groups within the general population. Based on this, targeted interventions should be designed including experts by experience and contact with people recovered from mental health issues.

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