How threatening are people with mental disability? it depends on the type of threat and the disability

Benoite Aubé, Odile Rohmer, Vincent Yzerbyt

Current Psychology
https://doi.org/10.1007/s12144-022-03655-1

How threatening are people with mental disability? it depends on the type of threat and the disability

Benoite Aubé[1] · Odile Rohmer[2] · Vincent Yzerbyt[3]

Accepted: 12 August 2022

Abstract
There is clear evidence that people with mental disability suffer from discrimination at school, at work, and in society. Less is known about the psychological processes and perceptions that guide such behaviors and even less if these perceptions vary according to the type of disability. Our objective was to build on well-established social psychological models and investigate the perceptions (i.e., stereotypes, perceived threats, and emotions) of people towards different types of mental disability. Participants from two francophone countries completed a questionnaire measuring their perceptions towards 18 mental disabilities and their familiarity with disability (N = 560). As expected, results revealed heterogeneous perceptions across groups. Moreover, perceived threats mediated the link between the stereotype of warmth and emotions. Surprisingly, greater familiarity with mental disability went along with greater derogation. This research nuances the overly generalized perceptions often associated with mental disability. We discuss implications for the reduction of discrimination against people with mental disability.

Keywords Mental disability · Discrimination · Stigmatization · Stereotypes · Perceived threats and intergroup emotions

The majority of European countries has ratified the International Convention on the Rights of Persons with Disabilities (CRPD; United Nations, 2006). In addition to this large-scale initiative, several countries also implemented laws to promote the social inclusion of persons with disabilities. Still, in spite of the positive legislation meant to ensure equal opportunity for all, persons with disabilities continue to be the victims of considerable discrimination and social inequities. For example, in many European countries, unemployment for people with disabilities is approximately twice what it is for people without disabilities (Vornholt et al., 2018). The figures are even more dramatic for people with mental disability. Whether at school or at work, they suffer from strong prejudice and discrimination (Aromaa et al., 2011; Brouwers, 2020; Brouwers et al., 2020; Jury et al., 2021; Russinova et al., 2011; Schomerus et al., 2012; Vornholt et al., 2018). For example, they are up to 7 times less likely to be employed than people with no disability (Brouwers, 2020). This phenomenon of discrimination is far from being a minor problem, as mental health disabilities affect more than 300 million people across the world and about 27% of the European working-age population (World Health Organization, 2017). It is therefore crucial to identify and remove barriers that come in the way of the inclusion of persons with disabilities. In line with this ambition, the present research aims to provide a comprehensive overview of people's beliefs and feelings towards persons with mental disabilities as these aspects play a key role in the exclusion process.

Prejudice towards persons with mental disabilities: Stereotypical beliefs and emotional reactions

According to the World Health Organization, mental disabilities, also called mental disorders or mental illnesses, are generally characterized by some combination of

✉ Benoite Aubé
benoite.aube@cogx.fr

[1] Laboratoire de Psychopathologie Et Processus de Santé, EA 4057, Université Paris Descartes, Sorbonne Paris Cité, 71 Avenue E. Vaillant, 92100 Boulogne-Billancourt, France

[2] Laboratoire de Psychologie Des Cognitions (UR 4440), Université de Strasbourg, Strasbourg, France

[3] Psychological Sciences Research Institute, Université Catholique de Louvain, Ottignies-Louvain-la-Neuve, Belgique

Published online: 07 October 2022

disturbed thoughts, emotions, behaviors, and relationships with others. Obviously, there is a wide variety of mental disabilities with a multitude of profiles. Mental disability can be defined as some form of impairment that results in severe dysfunction interfering with or substantially limiting one or several major life activities. The definition proposed by the US National Institute of Mental Health includes three dimensions: diagnosis, chronicity, and associated disability (Ruggeri et al., 2000). It is estimated by the World Mental Health (WHO) Surveys that the annual prevalence of SMI reaches 10.7% of the global population.

Next to the official criteria defining disabilities, a critical aspect has to do with the way non-professionals appraise persons with disabilities. In line with this concern, the present endeavor focuses on lay beliefs and feelings about mental disabilities. Our research therefore examines what people think and feel that mental disability is rather than what mental disability really is. In the remainder of this paper, we use the term "mental disability" to refer to a set of difficulties that lay people can recognize as "invisible disability" (Santuzzi et al., 2014). This includes psychosis (e.g. schizophrenia), anxiety or mood problems (e.g. depression), social deviances (e.g. addictions), and mental or cognitive impairments (e.g. Alzheimer) (Phelan et al., 2000; Sadler et al., 2012).

As far as research on the stigma of mental disability is concerned, there is clear evidence that persons with mental disabilities come across as less capable and intelligent than average individual (Boysen, 2020; Sadler et al., 2012, 2015). Consequently, perceivers see them as unable to make good decisions not only in general, like for their financial assets, but also with respect to their medical treatment (Pescosolido et al., 1999). They are usually described as unproductive and unmotivated, preventing them from accessing employment (Corrigan, 2016; Rüsch et al., 2005; Villotti et al., 2018). These findings, widely illustrated in the literature on the stigmatization of people with mental disability, resonate with current social psychological approaches of social evaluation (Abele & Wojciszke, 2007; Fiske, 2015; Yzerbyt, 2016; for recent integrative reviews, see Abele et al., 2020; Koch et al., 2020). Indeed, contemporary models show that social groups are described in terms of two broad dimensions, with important consequences for the regulation of social interactions.

The first of these dimensions refers to social and moral qualities (reflected by characteristics such as warm, kind, and honest). This so-called horizontal dimension is strongly related to issues of interpersonal relationships. The key question concerns whether others have friendly or hostile intentions towards us (Kervyn et al., 2015). The second dimension refers to intellectual qualities and skills (with characteristics such as intelligent, capable, and ambitious). This so-called vertical dimension is directly tied to the domain of competence and focuses on individuals' ability and motivation to act in order to achieve their goals (Abele et al., 2020; Carrier et al., 2014). Together, these two dimensions structure our relationships with our social environment.

The research building on this bi-dimensional approach has proven extremely fruitful with respect to a large number of social targets (for reviews, see Fiske, 2015; Yzerbyt, 2016). At the same time, only a limited number of empirical efforts investigated the perception of persons with disabilities using the so-called Big Two (Abele et al., 2020). The few results that are available in this regard reveal that people with disabilities are generally described more positively on the horizontal dimension than on the vertical one, that is, they are described as more sociable than competent (for a synthesis, Rohmer & Louvet, 2018; Wu & Fiske, 2019). Even fewer research has been devoted to stereotypes about persons with mental disabilities (Sadler et al., 2012, 2015). As a case in point, these data have been collected on American respondents (Sadler et al., 2012) and indicate that the perception of sociability and warmth varies according to the type of disability. Whereas people with intellectual disabilities or Alzheimer's disease trigger a positive judgment on this dimension, sociopaths or addicts individuals come across as particularly unsociable (Sadler et al., 2012).

Importantly, one consequence of stereotypical views towards people is that they form the basis for a set of emotional responses (Abele et al., 2020; Cuddy et al., 2007). For example, groups judged positively on the horizontal dimension but negatively on the vertical dimension are likely to awaken feelings of compassion and pity. As it turns out, the latter emotions are precisely those that people usually feel for persons with physical disabilities. Interestingly, these emotions then trigger positive actions towards disability while they also give way to limited motivation to get involved personally (Wu & Fiske, 2019). In comparison, individuals who come across negatively on both dimensions of judgment will stir up anger and disgust, possibly resulting in aggressive or reject behaviors.

As is the case for stereotypes associated with social groups in general, recent studies in social perception address the issue of how mental disabilities give way to specific emotions (Sadler et al., 2015). To the extent that people's impressions about persons with mental disabilities generally associate mental disability with unpredictable behaviors and loss of control, these persons trigger emotional reactions such as fear (Angermeyer & Dietrich, 2006; Boysen & Vogel, 2008). To be sure, people with mental disabilities have been shown to be associated with other negative emotions, such as anger (Corrigan et al., 2006; Sadler et al., 2012), disgust (Dawydiak et al., 2020), embarrassment and shame (Angermeyer et al., 2010; Hinshaw, 2009). Although less frequently so, some studies also report more positive emotions such as pity (Angermeyer & Matschinger, 2003; Sirlopu et al., 2008).

Understandably, however, to the extent that anger and fear are the emotions most often sparked by persons with mental disabilities, exclusion is a common outcome (Ozawa et al., 2016; Sadler et al., 2015). Interestingly, although its consequences are the same as those ensuing anger, fear seems more readily guided by the perception of some danger (Carver & Harmon-Jones, 2009; Sadler et al., 2015).

Perceived threat towards persons with mental disabilities

The above section suggests that it is possible to make sense of the stigmatization of persons with mental disabilities by relying on a two-dimensional model of social evaluation (Fiske et al., 2002). According to this view, our behaviors towards persons with mental disabilities would be determined by specific emotional reactions, themselves shaped by our lay stereotypical beliefs. Although this model has been successfully tested on an American population (Sadler et al., 2015), a number of theoretical lines of work and empirical data suggest that it may be fruitful to enrich this stereotype-emotion perspective by taking into consideration the intervening role of perceived threats. That is, specific stereotypical beliefs about social groups in general and stigmatized groups in particular presumably lead perceivers to anticipate one or several negative outcomes during the interactions. Depending on the stereotyped perception, people may fear exploitation, physical damage, or contamination, or over unpleasant effects (Alexander et al., 1999; Stephan et al., 2008).

One relevant approach in this respect is the socio-functional model of prejudice (Cottrell & Neuberg, 2005). According to this view, outgroups (i.e. groups that are different from one own group) are perceived as posing different kind of threats for ingroup resources or social functioning. These perceived threats result in a chain reaction of emotions and behaviors directed towards the target group. For example, African Americans are perceived to pose a threat for physical safety for Native Americans, resulting in fear feeling and distancing from African Americans (Cottrell & Neuberg, 2005). The originality of the sociofunctional model is to consider a number of perceived threats that can be evoked by social groups such as threat to ingroup property, freedoms, social coordination, health or else physical safety (see Cottrell & Neuberg, 2005 for details about the nature of threats). In other words, rather than looking at a general negative threat (and hence a general negative emotional reaction), the model argues that social groups evoke a rich and diverse panel of threats. Similarly, the Revised Integrated Threat Theory (Stephan & Renfro, 2002) focuses on the link between perceived threat and emotional and behavioral reactions.

Building on these efforts, we suggest that stereotypes guide the perception of a specific threat for a social group and hence the emotional and behavioral consequences. For example, psychopaths are generally stereotyped as quite intelligent but also unpleasant people (Sadler et al., 2012). Based on these stereotypes, it is reasonable to think that this group will trigger a sense of threat to trust relations or to physical safety. Another example can be taken with drug addicts who are generally stereotyped as being responsible of their situation and possibly dishonest (Corrigan et al., 2009; Sadler et al., 2012). These stereotypes signal a threat for a balanced reciprocal relationship, which in turn lead to anger and aggressive behaviors. In short, we suggest that perceived threat mediates the link between stereotypes associated to social groups and emotional reactions.

Goals of the present study

A substantial amount of work shows that people with mental disability are marginalized and are denied basic rights and social life (Boysen, 2020; Robinson et al., 2019). To change this state of affairs, some researchers focused on such strategies as promoting contact (Corrigan & Shapiro, 2010; Maunder et al., 2019) or providing better knowledge about the diseases and the impairments (Boysen & Vogel, 2008; Mannarini & Rossi, 2019). Very few studies considered mechanisms leading to discrimination by building on well-established social psychological models (for exceptions, see Sadler et al., 2012, 2015). Still, this would appear a necessary step to understand why the outcomes of the positive actions do not always live up to expectations. Moreover, no research to date has integrated stereotypes and emotions about mental disabilities by including perceived threats along the way. A first goal of the current research was thus to explore how specific evaluations on the two fundamental dimensions of judgments have people experience specific threats, ultimately leading them to feel specific emotions.

Our second goal was to cover a wide variety of mental disabilities. As a matter of fact, studies dealing with prejudice towards people with mental disabilities either examined beliefs and/or feelings towards the very general category "mental disability", selected only a single disability such as schizophrenia or depression in order to represent the overarching group of persons with mental disabilities, or, at best, included a rather heterogeneous set of disabilities with little or no justification (for a synthesis, see Angermeyer & Dietrich, 2006). Working under these conditions makes it difficult to achieve a comprehensive understanding of social perceptual mechanisms leading to discrimination towards persons with mental disabilities. Although there are similarities between the various mental disabilities when it comes to beliefs and feelings, there are also marked differences

(Sadler et al., 2012, 2015). It is thus important to extend the existing knowledge by distinguishing sub-groups of persons with mental disabilities to better understand the various causes of discrimination towards them. If not, an evidence-based program developed to fight against discrimination of one type of mental disability (e.g., schizophrenia) may turn out to be inefficient for another type of mental disability (e.g., Down syndrome). In other words, ensuring that one encompasses the full spectrum of mental disabilities constitutes an essential preliminary step for proposing effective social inclusion policies.

A third goal of the present endeavor concerns the origin of the respondents. Previous comparisons between countries reveal non-trivial differences when it comes to perceptions about people with mental disabilities. These differences pertained to such factors as stereotypical beliefs, emotional feelings, perception of dangerousness, or need for avoidance (Angermeyer & Dietrich, 2006; Mannarini et al., 2018; Schomerus et al., 2012). However, to the best of our knowledge, there is a dearth of data coming from different cultural context in general and from francophone countries in particular. Indeed, we know of only one study that has been conducted on Switzerland, a country that is partially francophone, and this study took place two decades ago (Lauber et al., 2004). Moreover, this study is descriptive and simply compares avoidance tendencies as a function of respondents' language. To be sure, more comprehensive studies are available but these were restricted to populations issued from the USA, using predominantly female and young respondents (Sadler et al., 2012). In sharp contrast, the present study focused on a large panel of francophone respondents issued from two European countries, France and Belgium. It is important to note that France and Belgium share a long history of mobility for people with disabilities, with a facilitated cross-border intake. These individual practices have even benefited for more than 10 years from a European agreement formalizing exchanges to welcome people with disabilities in French speaking structures (Vallée et al., 2010). As such, this allowed us to consider that two countries as one sample.

To sum up, the present research aims to improve our knowledge about the perceptions of and indeed prejudice towards persons with mental disabilities on three counts. First, we wanted to rely on firmly-established models of social evaluation while taking into consideration a key mediator, namely perceived threats. We thus expect that stereotypes of warmth and competence should predict emotions felt towards people with mental disabilities, and that this relation should be mediated by the perceived threat associated to people with mental disabilities. Of note, we also verified whether participant's familiarity with mental disability were related to their perceptions of these groups. Specifically, we expected that the more participants were familiar with mental disabilities, the more positive their perceptions should be.

Second, we wanted to examine the perceptions of a very large spectrum of mental disabilities by including the various subgroups that have been considered in previous work into one comprehensive study. Although mental disabilities are likely to be associated with specific profiles of stereotypes, perceived threat, and emotions, the present work builds on the assumption that the stereotype content model (Cuddy et al., 2007) offers a useful framework to examine the relations between these constructs for the various mental disabilities.

Third, we wanted to depart from the traditional English-speaking respondents and examine the perceptions of persons with mental disabilities in a large sample of French-speaking respondents.

Method

Participants

A total of 560 participants from France (N = 390; 70%) and Belgium (N = 170; 30%) completed the online questionnaire (383 women, 176 men, and 1 other; $M_{age} = 38.68$; $SD_{age} = 18.77$). To secure these participants, we asked psychology students to answer the questionnaire and to recruit five additional participants each (ideally, one under 35 years old, two between 35 and 55 years old, and two over 55 years old). See Table 1s in online supplementary material for more details about distribution of the samples across countries (the dataset and the supplementary material is available in OSF repository, https://osf.io/zvpfw/). Informed consent was obtained from all individual participants included in the study.

We removed participants who self-reported a mental disability or a psychological illness ($n = 41$). We did so because we wanted to avoid the interference of some form of ingroup bias (Brewer, 1999; Tajfel, 1981; Tajfel et al., 1971) that would lead participants to be more favorable toward their specific subgroup.

Materials and procedure

The questionnaire comprised three main parts measuring the degree to which participants perceive threats, stereotypes, and feel specific emotions with respect to a variety of mental disabilities (see Table 3 in Appendix). Upon answering the questionnaire, each participant was presented with a random selection of five mental disabilities out of a total of 18 (i.e., Game addicts, Alcoholic, Persons with Alzheimer's

disease, Anorexics, Anxious persons, Autistic persons, Bipolars, Bulimic, Persons with intellectual disability, Persons with depression, Persons with mental disability, Paranoid, Phobics, Psychopaths, Schizophrenics, Persons with obsessive–compulsive disorder, Drug addicts, Persons with Down syndrom). These groups were selected on the basis of previous research (Boysen, 2020; Sadler et al., 2012, 2015) and adapted to the French and Belgian contexts.

Participants first completed the questions on the perceived threats, stereotypes, and emotions toward a first randomly selected group before repeating the same procedure for four other randomly selected groups.

Finally, participants completed socio-demographic data and declared if they considered themselves to be familiar with the issue of disability, mental disability, and mental illness (with a 7-point scale, 1 = not at all, 7 = absolutely). If they indicated that they were familiar with one of these categories, they could then choose one or more explanations for their answer (i.e., "I myself am mentally handicapped or mentally ill", "I work with mentally handicapped or mentally ill people in my studies or in my workplace", and/or "I have relatives or friends who are mentally handicapped or mentally ill").

Stereotypes

For stereotypical beliefs, participants had to assess groups on a list of adjectives measuring the degree of warmth related to the horizontal dimension of social judgment (6 items) and competence for the vertical dimension (6 items).[1] Participants responded with a 7-point scale (1 = no, not at all, 7 = yes, absolutely). The PCA with oblimin rotation revealed the expected factors of warmth (37.8% of the variance, $\alpha = 0.88$) and competence (30.6% of the variance, $\alpha = 0.86$; see Table 2s in online supplementary material).

Perceived threats

From the sociofunctional model (Cottrell & Neuberg, 2005), we selected six potential threats based on their relevance regarding lay beliefs about mental disability and operationalized each of them by two items. As for stereotypes, participants responded on a 7-point scale (1 = no, not at all; 7 = yes, absolutely). We conducted a principal component analysis (PCA) with oblimin rotation (see Table 3s in online supplementary material). The two items measuring threat to economic resources loaded on two separate factors, indicating poor relevance of the items. After removing them from the analysis, the factorial analysis revealed three factors instead of five. The first factor comprised items measuring threat to safety, threat to reciprocity, and threat to trust relations (34.4% of the variance, $\alpha = 0.86$). This factor can be interpreted as reflecting a threat to the quality of the relationship between groups, i.e. to what extent members of the target group fail to behave in accordance with accepted standards for a proper relation. We called this factor "interactional threat." The second factor included the two items about moral standing (17.2% of the variance, $\alpha = 0.75$). The last factor included the two items measuring threat to health (15.6% of the variance, $\alpha = 0.60$).

Emotions

We measured seven emotions for which we assume they are associated to mental disability. Among them, five emotions are directly linked to the perceived threats according to the sociofunctional model of prejudice (Cottrell & Neuberg, 2005; anger, fear, disgust, pity, and guilt), and the two others (admiration and envy) stem from the Stereotype Content Model (Fiske et al., 2002). For each emotion, participants responded on two items using a 7-point scale (1 = no, not at all, 7 = yes, absolutely). A PCA (with oblimin rotation) revealed three factors (see Table 4s in online supplementary material). The first factor included the items measuring fear, anger, disgust, and shame (34% of variance, $\alpha = 0.87$). This factor refers to those emotions linked to the derogation of the targets. The second factor included the two items measuring pity (14,7% of variance, $\alpha = 0.66$). Finally, the third factor comprised the items of guilt, admiration, and envy (13,5% of variance, $\alpha = 0.56$) and denotes the consideration of the targets.

Results

Descriptive statistics

One goal of the present research was to secure an overview of the perceptions of our respondents regarding people with a mental disability. Tables 5s, 6s, and 7s in online supplementary material show the mean scores and standard deviations of stereotypical beliefs, perceived threats, and emotional feelings for each group.

Cluster analyses

We performed a K-means cluster analysis using the two dimensions of stereotypes, namely, warmth and competence.

[1] In addition to the standard adjectives used to measure warmth and competence (see Yzerbyt, 2018), the questionnaire also originally included three items measuring stereotypes on effort (courageous, conscientious, and motivated), that might have been relevant for judging groups with a disability (Louvet et al., 2019). Because the PCA did not single out these items in one meaningful factor, we removed these data from the present report for the sake of parsimony.

Although the elbow method suggested that the optimal number of clusters may be 3, we decided that this level of aggregation was too restrictive because it brought together some mental disabilities that showed substantially different scores on stereotypes. Closer examination of additional solution led us to opt for a 5-cluster solution which offered a satisfactory level of fit with previous efforts (Sadler et al., 2012).

The first cluster (Cluster 1) included only one group, namely psychopaths. Cluster 2 included people with obsessive–compulsive disorders, phobics, anxious people, Down syndrome, bulimics, anorexics, and autistic persons. Cluster 3 included paranoids, game addicts, schizophrenic and bipolars. Cluster 4 comprised people with intellectual disability, people with mental disorders and people with Alzheimer's disease. Finally, Cluster 5 included persons with depression, alcoholics, and drug addicts. As shown in Table 1, each cluster evokes a distinct panel of stereotypes, threats, and emotions. For each component, we compared the mean levels of each construct within and between each cluster in order to highlight its specific profile.

Stereotypes

To test the differences between the means of warmth and competence, we conducted a mixed model analysis (lmer function in R) with dimensions and clusters as fixed factors and participants and groups as random factors. The cluster main effect was significant, confirming that the five clusters differed when combining the two stereotype dimensions, $F(4, 13) = 21.73$, $p < 0.001$, $\eta_p^2 = 0.11$.[2] The dimension main effect also proved significant, indicating that participants rated the groups significantly warmer than competent, $F(1, 4649) = 43.31$, $p < 0.001$, $\eta_p^2 = 0.01$. More interestingly, the interaction was significant, $F(4, 4649) = 227.83$, $p < 0.001$, $\eta_p^2 = 0.09$.

Follow-up comparisons revealed that Cluster 1 came across as very competent but not warm at all. In comparison to the other clusters, Cluster 1 obtained the highest score on competence, scoring significantly higher than all clusters, except the other "high competence" cluster, i.e., Cluster 2. Cluster 1 also obtained the lowest score on warmth, differing significantly even from the "low warmth" Clusters 3 and 5. Participants perceived Cluster 2 as high on warmth and moderately high on competence, significantly warmer than competent. Specifically, Cluster 2 obtained the highest score of warmth, at the same level than the other "high warmth" cluster, i.e., Cluster 4, and equaled the moderately competent

[2] Note that effect size of multi-level model analyses is typically smaller than those of classical analyses of variance. As a case in point, the present analysis takes into consideration both the random effect of participants *and* that of groups. Consequently, the portion of variance accounted for by any fixed effect is smaller.

Table 1 Descriptive means and standard deviations of perceived threats, stereotypes and emotions according to clusters

Cluster Number	Groups	Cluster	Stereotypes		Perceived Threats			Emotions		
			Warmth	Comp	Inter	Moral	Health	Derog	Pity	Consid
1	psychopaths	Low warmth, High competence	2.40^{1a}	4.57^{2d}	5.32^{2c}	2.49^{1a}	2.25^{1ab}	4.86^{3d}	2.59^{2a}	1.91^{1a}
2	people with obsessive–compulsive disorders, phobics, anxious people, Down's syndrome, bulimics, anorexics and autistic persons	High warmth, Middle/High competence	4.25^{2b}	3.82^{1cd}	2.95^{2a}	3.47^{3a}	2.24^{1a}	3.05^{3a}	4.48^{2c}	2.16^{1a}
3	paranoids, game addicts, schizophrenic and bipolars	Low warmth, Middle/low competence	3.12^{1a}	3.65^{2bc}	4.32^{3bc}	2.83^{2a}	2.40^{1ab}	3.64^{2bc}	3.67^{2b}	1.91^{1a}
4	people with intellectual disability, people with mental disabilities and people with Alzheimer's disease	High warmth, Low competence	4.10^{2b}	3.13^{1ab}	4.02^{2b}	4.25^{2b}	2.11^{1a}	3.24^{2ab}	5.11^{3d}	2.20^{1a}
5	persons with depression, alcoholics and drug addicts	Low warmth, Low competence	3.06^{2a}	2.74^{1a}	4.67^{2bc}	3.07^{1a}	3.19^{1b}	4.10^{2cd}	4.21^{2bc}	1.91^{1a}

score of Cluster 3. Cluster 3 scored low on warmth, similar to the other low warmth clusters, i.e., Clusters 1 and 5, and moderately low on competence, like other clusters with low and middle competence scores. Cluster 4 came across as high on warmth, significantly different from all clusters, except the other "low warmth" clusters, Cluster 1 and 3and low on competence, similar to clusters low or moderately low on competence, i.e., Clusters 3 and 5. Finally, respondents rated Cluster 5 as low on warmth, not different from Cluster 1, and low on competence, not different from Cluster 4, the other "low competence" cluster.

In sum, clusters are distributed over the four quadrants resulting from the crossing of the two dimensions of stereotypes. Only Cluster 1 (i.e. psychopaths) clearly stand out by its extreme competence and its great coldness.

Perceived threats

We examined perceived threats using the same statistical procedure as for stereotypes. Both the cluster, $F(4, 12.9) = 4.96$, $p = 0.01$, $\eta_p^2 = 0.04$, and the perceived threat main effect, $F(2, 7238) = 932.51$, $p < 0.001$, $\eta_p^2 = 0.16$, as well as the perceived threat by cluster interaction were significant, $F(8, 7238) = 149.70$, $p < 0.001$, $\eta_p^2 = 0.11$, indicating that the 5 clusters showed distinct patterns of perceived threats.

According to the respondents, Cluster 1 evokes a high level of interactional threat and more so than the two other threats, that do not differ from each other. The level of interactional threat was similar to that observed for Cluster 3 and 5. The moral and health threats received the same low scores as other clusters, except Cluster 4 for moral threat and Cluster 5 for health threat.

Cluster 2 emerges as the most threatening cluster for moral standing. Cluster 2 evokes significantly lower interactional threat than the other clusters and emerged at a similar level on the other threats, except for Cluster 4 for moral threat and Cluster 5 for health that stand out from the rest.

Cluster 3 shows a pattern that is very close to the one observed for Cluster 1, i.e., high interactional threat and low moral threat and health threat.

For Cluster 4, the interactional and moral threats emerge at the same level whereas the level of health threat came out significantly lower. Compared to the other clusters, Cluster 4 shows a moderate to high level of interactional threat similar to Clusters 3 and 5 and the same low level of health threat as the other clusters with the exception of Cluster 5. Interestingly, Cluster 4 significantly differs from the other cluster on moral threat, as it evokes high moral threat.

Finally, Cluster 5 shows a similar pattern to Clusters 1 and 3 as it evokes more interactional threat than moral threat and health threat.

To sum up, all clusters evoke a high level of interactional threat, except Cluster 2 that stands out due to its particularly low score on this threat. Clusters 1, 3 and 5 show globally similar profiles, namely high interactional threat, low moral threat, and low health threat. Finally, Cluster 4 triggers a particularly high level of moral threat compared to the other clusters.

Emotions

As for stereotypes and perceived threats, we analyzed the emotions associated with each cluster using a mixed model analysis with emotions and clusters as fixed factors and participants and groups as random factors. The main effect of emotion was significant, $F(2, 7228) = 1697.04$, $p < 0.001$, $\eta_p^2 = 0.25$, but not that of cluster, $F(4, 12.9) = 2.40$, $p < 0.11$, $\eta_p^2 = 0.02$. More importantly, the emotion by cluster interaction was significant, $F(8, 7228) = 151.53$, $p < 0.001$, $\eta_p^2 = 0.11$.

Follow-up analyses revealed that Cluster 1 evokes a high level of derogation, more so than pity, itself more so than consideration. Comparisons between clusters reveals that Cluster 1 evokes more derogation than all other clusters, except Cluster 5. Cluster 1 also triggers particularly little pity compared to all other clusters. Strikingly enough, all clusters evoke the same particularly low level of consideration. Cluster 2 evokes significantly more pity than consideration and derogation, with the latter being equally low as for Cluster 4. Cluster 3 shows similar moderately levels of derogation and pity, and the same low level of consideration as the other clusters. Cluster 4 triggers a particularly high level of pity compared to derogation and consideration, as well as to other clusters. Finally, Cluster 5 evokes as much derogation as pity, not unlike the pattern observed for Cluster 3.

In sum, all five clusters trigger a similarly low level of consideration. As a reminder, consideration comprised such emotions as admiration, envy, and guilt. Moreover, Clusters 1 and 5 evoke a high level of derogation, although Cluster 5 is also associated with positive feelings such as pity. Clusters 2 and 4 show a similar pattern, mainly evoking pity. Finally, Cluster 3 evokes a moderate level of derogation and pity.

Impact of familiarity with mental disability on perceptions

As expected, the two items tapping familiarity with mental disability and familiarity mental illness were significantly correlated ($r = 0.66$, $p < 0.001$). We averaged and centered them to create a score of familiarity with mental disability. We then conducted a mixed model analysis on threat scores with perceived threat and familiarity with mental disability as fixed factors and participants and groups as random factors. The main effect of threat was significant, $F(2, 518) = 751.40$, $p < 0.001$, $\eta_p^2 = 0.13$. The main effect of familiarity also proved significant, $F(1, 518) = 9.14$, $p < 0.001$, $\eta_p^2 = 0.004$, indicating that the more participants were familiar with

Table 2 Results of mediation analyses

	Step 1: IV to DV								
	Derogation			Pity			Consideration		
	b	*t*	η^2	*b*	*t*	η^2	*b*	*t*	η^2
Warmth	-0.74***	-5.76	0.69	0.78***	5.47	0.67	0.19**	3.40	0.44
Competence	-0.07	-0.43	0.01	-0.70**	-3.72	0.48	0.02	0.25	0.00
	Step 2: IV to Mediator								
	Interactional			Moral			Health		
Warmth	-1.00***	-4.85	0.61	0.65**	3.61	0.46	-0.29*	-2.61	0.31
Competence	-0.42	-1.55	0.05	-0.45	-1.91	0.19	-0.43**	-2.91	0.36
	Step 3: (IV + Mediator) to DV								
	Derogation			Pity			Consideration		
Warmth	-0.09	-0.30	0.01	0.05	0.19	0.00	0.003	0.05	0.00
Competence	0.35	1.39	0.14	-0.42	-1.81	0.21	0.26**	4.10	0.58
Interactional	0.55**	3.07	0.44	-0.24	-1.42	0.14	-0.02	-0.48	0.02
Moral	0.04	0.20	0.00	0.78***	4.57	0.63	0.35***	7.68	0.83
Health	0.40	1.23	0.11	0.05	0.18	0.00	0.21*	2.55	0.35

*** means $p < .001$; ** means $p < .01$; * means $p < .05$

disability, the higher their threat score (whatever the nature of threat). However, familiarity did not interact with perceived threat, $F(2, 518) = 1.80$, $p = 0.17$, $\eta_p^2 = 0.00$.

We repeated the exact same analysis using stereotype dimension and emotion as fixed factors instead of perceived threat. Regarding the analysis using stereotype dimension, there was only a significant main effect of stereotype dimension, $F(1, 518) = 26.85$, $p < 0.001$, $\eta_p^2 = 0.003$. As to the analysis using emotion, the main effect of emotions was significant, $F(2, 518) = 2209.91$, $p < 0.001$, $\eta_p^2 = 0.31$. This time, familiarity significantly interacted with emotion, $F(2, 518) = 8.47$, $p < 0.001$, $\eta_p^2 = 0.002$. Simple effect analyses showed that familiarity significantly interacted with derogation, $t(1080.71) = 4.53$, $p < 0.001$. The more participants reported being familiar with mental disability, the more they derogated people with a mental disability. In contrast, simple effects were not significant for pity, $t(1079.50) = 1.69$, $p = 0.09$, or consideration, $t(1079) = 0.69$, $p = 0.49$.

Mediation Analyses

Next, we conducted a series of three mediation analyses in order to explore if perceived threat mediate the link between stereotypes and each emotion (derogation, pity and consideration were our dependent variable). The unit of analysis was the group and data were aggregated across participants accordingly. For each mediation analysis, we followed a three-step procedure (for a recent presentation, see Yzerbyt, 2018). Because our study ambitioned to eventually predict the emergence of three emotions, for clarity of presentation we decided to examine the mediational model relevant to each emotion in turn. Specifically, we first regressed the emotion on both stereotype dimensions (warmth and competence). Next, we independently regressed each perceived threat (interactional, moral, and health) on both stereotype dimensions. Finally, we regressed the emotion on both stereotype dimensions and the three perceived threats (see Table 2). We repeated this procedure for each emotion.

Derogation

We first regressed derogation on both warmth and competence. Warmth significantly predicted derogation, $b = -0.74$, $t(17) = -5.76$, $p < 0.001$, but competence did not, $b = -0.07$, $t(17) = -0.43$, $p = 0.67$. The second step consisted of regressing each perceived threat on both stereotype dimensions. Warmth predicted interactional threat, $b = -1.00$, $t(17) = -4.85$, $p < 0.001$, but competence did not, $b = -0.42$, $t(17) = -1.55$, $p = 0.14$. Similarly, warmth predicted moral threat, $b = 0.65$, $t(17) = 3.61$, $p = 0.002$, but competence did not, $b = -0.45$, $t(17) = -1.91$, $p = 0.08$. Both stereotype dimensions predicted health threat, $b_{warmth} = -0.29$, $t(17) = -2.61$, $p = 0.02$, $b_{comp.} = -0.43$, $t(17) = -2.91$, $p = 0.01$. Finally, when we regressed derogation on both stereotype dimensions and all three perceived threats, only intersectional threat remained significant, $b = 0.55$, $t(17) = 0.55$, $p = 0.009$. Importantly, warmth, $b = -0.09$, $t(17) = -0.30$, $p = 0.77$, and competence, $b = 0.35$, $t(17) = 1.39$, $p = 0.19$, were no longer significant. This suggests that interactional threat mediated the relationship between stereotypes and derogation. The less welcoming the groups come across, the more threatening they look and the more derogation they evoke.

Pity

As far as the first step was concerned, both warmth, $b = 0.78$, $t(17) = 5.49$, $p < 0.001$, and competence, $b = -0.70$, $t(17) = -3.72$, $p = 0.002$, significantly predicted pity. The warmer respondents see the group, the more they feel pity. Inversely, the more competent respondents see the group,

the less they report feeling pity. Turning to the second step, warmth positively predicted interactional threat and health threat, but negatively moral standing threat. Finally, with respect to the third step, warmth, $b = 0.05$, $t(17) = 0.19$, $p = 0.85$, and competence, $b = -0.42$, $t(17) = -1.81$, $p = 0.10$, no longer predicted pity whereas moral threat was significant, $b = 0.78$, $t(17) = 4.57$, $p < 0.001$. In other words, the warmer respondents see the group, the more they perceive it as threatening on moral standing and the more pity they feel.

Consideration

We followed the same three-step procedure as above with consideration. First, warmth significantly predicted consideration, $b = 0.19$, $t(17) = 3.40$, $p = 0.004$. The warmer respondents rated the groups, the more they reported consideration. In contrast, competence had no impact, $b = 0.02$, $t(17) = 0.25$, $p = 0.80$. Second, warmth significantly predicted the three threats whereas competence only predicted health threat (see Fig. 1). Finally, whereas moral threat, $b = 0.35$, $t(17) = 7.68$, $p < 0.001$, and health threat, $b = 0.21$, $t(17) = 2.55$, $p = 0.02$ (but not interactional threat) significantly predicted consideration, warmth was no longer significant, $b = 0.03$, $t(17) = 0.05$, $p = 0.96$. Interestingly, competence now predicted consideration, $b = 0.26$, $t(17) = 4.10$, $p = 0.001$. This pattern offers a nice illustration of what is known as suppression (Judd et al., 2014). Specifically, when we control for the perceived threats associated to groups, we find out that the more respondents attributed competence to the groups the more they also reported consideration.

In sum, mediation analyses showed that only interactional threat mediated the link between warmth and derogation. The less welcoming the groups come across, the more threatening they look and the more derogation they evoke. Then moral threat mediated the links between warmth and pity and warmth and consideration. The warmer the groups are judged to be, the more they pose a threat to the moral stance of the participants and the more they evoke pity and consideration.

Discussion

The aim of the present research was to explore people's perception towards a wide variety of persons with mental disabilities in two francophone contexts. We specifically assessed stereotypical beliefs, perceived threats, and feelings toward 18 common mental disabilities in France and Belgium. Our data first revealed how each of these three constructs is organized. Stereotypical beliefs comprise two broad dimensions, the first referring to social qualities (the horizontal dimension, i.e., warmth) and the second to abilities (the vertical dimension, i.e., competence). This organization of stereotypical beliefs is in accordance with current psychological models of social evaluation (for recent integrative reviews, see Abele et al., 2020; Koch et al., 2020). The value of measuring stereotypes lies in the fact that they are often considered to be at the origin of emotions felt towards social groups (Abele et al., 2020; Cuddy et al., 2007). In light of the present results, we see that emotions felt towards individuals with mental disabilities are organized into three sets of emotions. The first set encompasses emotions linked to the derogation of people with disability (fear, anger, disgust, and shame). The second set refers to pity. The third set relates to the consideration of individuals (guilt, admiration, and envy).

As a key contribution of the present efforts, we proposed that stereotypical beliefs and feelings towards people with mental disabilities are linked to different kind of threats for social functioning (Cottrell & Neuberg, 2005). Our data revealed that perceivers express three types of threats linked to mental disability. The first one reflects an interactional threat, that is, the failure of individuals to behave according to interactional standards. The second type encompasses the perception of a threat to our own mental or physical health. The third type is of a slightly different nature as it refers to one's moral standing. Indeed, it concerns the risk of giving a bad image of oneself by behaving in an inappropriate way. Beyond the internal organization of the three constructs of social evaluation, our findings also emphasize the importance to consider the diversity of perceptions towards mental disability. If mental disability appears to be a general category that is perceived to be warmer than competent, our data show that there is a wide variety of sub-groups and that these are evoking widely different perceptions. The subgroups were judged from the least to the most competent and from the least warm to the warmest one. This is important as it shows that stereotypes associated to subgroups are far more diverse than the very general perception often associated with mental disability. Our findings are consistent with the scant research that has been conducted in other cultural contexts (Boysen, 2017; Sadler et al., 2012, 2015). They are also in line with the work conducted on other superordinate categories such as women (Eckes, 2002), gay men (Clausell & Fiske, 2005), or even elderly (Boudjmadi et al., in process) and that yields a more accurate grasp on the way people make sense of their social reality (e.g. career women/housewives for women or senile individual/grand-parent for ageing people).

The present findings confirm that the diversity that makes up the broad category of mental disability should not be overlooked in terms of the exclusion processes that it implies. Better understanding the perceptions of others towards each sub-group is crucial to better identify the exclusion mechanism that targets people with mental disability in real life. The specific perceptions attached to each sub-group could be of particular interest to practitioners working with people with mental disability such as those

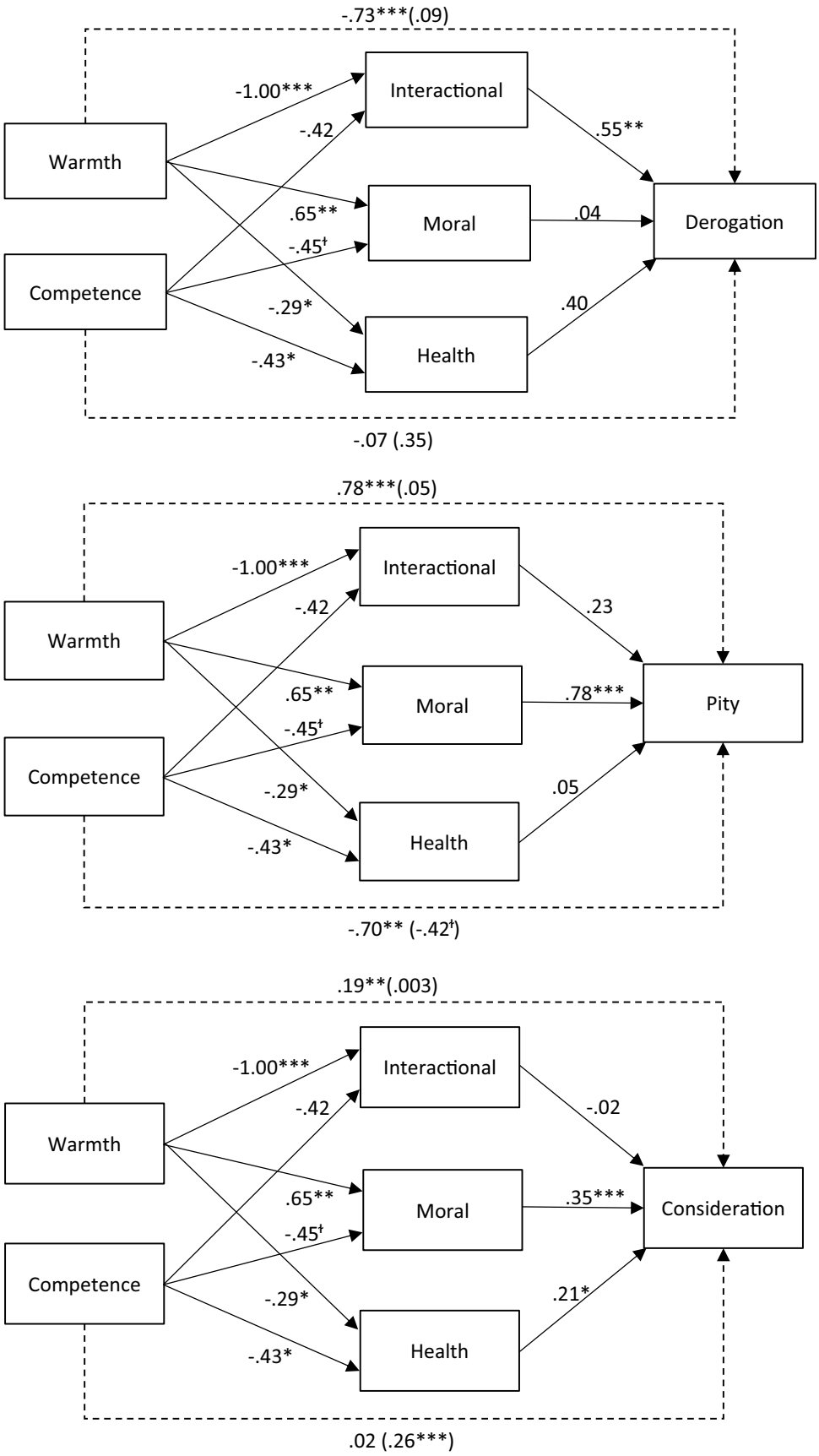

Fig. 1 Mediational model for derogation (upper panel), for pity (middle panel), and for consideration (lower panel)

who work towards the inclusion of these people at school or in work settings. Indeed, successful inclusion involves deconstructing the stereotypes, perceived threats and emotions that other people may experience towards the to-be-included person. Thanks to a detailed description of each of the groups, practitioners should be able to better target and indeed to address the reluctance and fear associated to the specific group of people with whom they are working.

Although the subgroups differ from each other in terms of the stereotypes, threats, and emotions that they evoke, it is nevertheless noticeable that some are similar enough to be grouped into clusters. To the extent that the two dimensions of stereotypical beliefs structure our relationships with our social environment (Abele et al., 2020), we constructed these clusters on the basis of these dimensions. The disabilities are grouped into five main clusters, confirming the results obtained by Phelan et al. (2000) who was interested in naïve conceptions of mental disability based on open responses.

Interestingly, psychopaths stand out from other groups and form a cluster of their own. Just like sociopaths and criminals in Sadler et al.'s (2012) study, psychopaths evoke very little sympathy but are endowed with certain skills. They appear to be defined on the basis of anti-social characteristics and with sufficient intellectual capacity for harm to make them dangerous (Angermeyer & Dietrich, 2006). In addition, as in Sadler et al.'s (2012) data, psychopaths are distinguished from the cluster that groups schizophrenia, paranoia, bipolar, and personality disorders (cluster 3) and the cluster that includes alcoholism, drug addictions, and depression (cluster 5). Following Sadler et al. (2012), one can see the latter two clusters as bringing together impairments perceived either as psychosis (C3) or as neuro-cognitive deficits (C5). Moreover, these two clusters have in common with psychopaths that they deal with individuals considered to be cold (with slight variations from one cluster to the other). However, on the competence dimension, the psychosis cluster (C3) is believed to have fewer capacity for harm in comparison to the neuro-cognitive deficits cluster (C5), itself having less capacity for harm than psychopaths. This ordering could be explained by the fact that people appraise these disabilities somewhat differently. Indeed, respondents may believe that certain pathologies related to neural deficits are biologically based, stable, and unchanging when this is less the case for others (Demoulin et al., 2006).

When some pathology is seen as more biologically based, then people might consider that these persons find it difficult to control their behavior or to make appropriate decisions, leading observers to perceive dangerousness and experience fear (Angermeyer & Matschinger, 2003; Corrigan et al., 2006; Dietrich et al., 2006). However, when a pathology is considered as controllable and open to treatment, perceivers might consider that persons with mental disability are less dangerous (Corrigan et al., 2006). The latter approach may hold for drug addicts, persons with depression, and alcoholics who are all perceived as having less capacity to harm others compared to psychopaths. Still, although these groups are not seen as endangering other people's physical safety, they are still seen as threatening people's health, meaning that these specific pathologies are perceived to be transmissible to people somewhat more than other mental disabilities. So, whereas groups from the neuro-cognitive deficits cluster (C5) do not come across as having the capacity to harm, perceivers may still fear that the disability might be transmitted to them.

This ambiguous perception is also found in the emotions of derogation and pity. Indeed, derogation might result from the fact that groups in the neuro-cognitive deficits cluster (C5) fail the interaction standards due to their altered state, but without being dangerous for the persons with whom they interact. Pity, in turn, is an emotion that emerges when someone is seen as suffering (Florian et al., 1999). This emotion could come from the fact that people know that they too can be affected by this disability and this would trigger feelings of sympathy towards the victim.

Turning to the last two clusters, we note that they point to a very specific threat. Indeed, these clusters threaten to compromise the image we project to others if we do not behave with dignity and exclude the most vulnerable among us. Cluster 2 brings together obsessive–compulsive, bulimics, phobic, anxious people, and individuals with down syndromes. Following previous work (Phelan et al., 2000; Sadler et al., 2012), we can consider that this cluster represent groups that experience mood difficulties. Cluster 4 comprises mental disability, intellectual handicap, and Alzheimer's disease and can be labelled the mental deficiencies cluster. These two clusters share the fact that individuals with these specific disabilities come across as demonstrating a rather high degree of sociability but few abilities, especially when it comes to the mental deficiencies cluster(C4) This gives the impression that these people are equated with their deficit. Indeed, in the mood difficulties cluster (C2), this makes them more dangerous for themselves than for others. In the mental deficiencies cluster, they are no longer perceived as enjoying the necessary capacities for them to be dangerous (Boysen, 2020; Sadler et al., 2012). Not surprisingly, these pathologies awaken pity, an emotion that is felt when someone is suffering (Florian et al., 1999). It is worth noting that this pattern of results is very close to what is generally observed for people with physical disability (Cuddy et al., 2007; Wu & Fiske, 2019).

Next to this cluster analysis, we also explored the mediating role of perceived threats in the link between stereotypes and emotions. Results show that warmth plays a major role in predicting perceived threat and emotions. Warmth predicts the three emotions, but via different threats. Specifically, the groups that are judged to be the warmest are also those (1) that evoke the least interactional threat and derogation, (2) that evoke the most threat to moral standing and the most

pity and consideration as emotion; (3) that appear to be the least threatening in terms of health, leading to consideration. In other words, the stereotype dimensions are not enough to predict the emotions towards mental disabilities. Perceived threats allow to specify the content of the stereotypes so as to better predict the emotional and finally the behavioral consequences of entertaining these specific stereotypes.

Regarding the dimension of competence, the only noticeable point is that it predicts the emotion of consideration, but this is the case only when all the threats are controlled for. This suggests the presence of a suppression effect in that the effect of competence on consideration is in the opposite direction of the links between competence and threat and between threat and consideration (Judd et al., 2014). This makes sense because the more competent perceivers judge someone, the more they consider the person. At the same time, the more competent perceivers judge someone the less the person is perceived as a threat and the less threatening the person is perceived to be, the more positive emotions the person provokes. Although this effect is not our main concern, it is important to highlight for researcher interested in studying the link between stereotypes and emotions. In sum, our model makes the link between two types of models, some of them more concerned with the link between stereotypes and emotions (see Abele et al., 2020 for a review) and others more focused on threats and emotions (e.g. Cottrell & Neuberg, 2005; Stephan & Renfro, 2002). Although our model has been tested on specific groups that are persons with mental disability, the present findings should encourage researchers to investigate different social groups.

We also checked whether the degree of familiarity with mental disability had an impact on the perception of people on mental disability. Results showed that the more participants reported being familiar with mental disability, the more they derogated people with a mental disability. At first glance, this result may seem surprising. However, in a recent literature review, Corrigan and Nieweglowski (2019) reported contrasting results with respect to the link between familiarity and stigma. Specifically, one study out of three concludes that there is an absence of relationship between familiarity and stigma or that the relation goes in the opposite direction of what would be expected. The authors suggest a U-shaped relationship between familiarity and stigma, with a stronger negative perception of mental disability within the nuclear family due to the level of stress and the amount of change in the quality of life. Although further research is needed to substantiate this U link, it is fair to assume that the impact of the pathology on the quality of life of the person's relatives is largely dependent on the nature of the difficulty.

Of interest, various studies have also shown that familiarity with the disability (rather than with the individual) has negative effects on the perception of people with a physical disability (Rohmer & Louvet, 2004) or with a mental disability (Holzinger et al., 2003; Pinfold et al., 2005). Apparently, people's knowledge of the disability leads them to focus on the difficulty that they associate with the pathology rather than on the person as a whole. Here too, this work calls into question the spontaneous prediction of a positive link between familiarity and perceptions of people with a mental disability (Corrigan & Nieweglowski, 2019). Having said this, more research is definitely needed to deepen our understanding of these phenomena.

Beyond the aim to investigate the perceptions of people towards mental disability, a broader ambition of the present research is to contribute to the improvement of the perception of mental disability and, ultimately, to the better inclusion of people with disability in society. In this regard, a number of interventions have been developed to improve perceptions of mental disability. In a first series of efforts, researchers have tried to improve the larger public's knowledge about mental diseases. As it turns out, these interventions have not shown to have a significant impact (Angermeyer & Matschinger, 2003; Mannarini & Rossi, 2019; Schomerus et al., 2012). Somewhat paradoxically, knowing more about a disease might awaken latent threats about the danger that this type of pathology represents for ourselves or our loved ones. For example, the information could trigger feeling of danger for our physical integrity or it could make us aware that we could be affected by the disease.

In a second body of work, researchers argue for the recognition of people with mental disabilities as being fully human (Corrigan et al., 2015; Maunder et al., 2019). According to this viewpoint, going beyond the person's pathology and acknowledging that this person with a disability is a unique individual is what would lead to more positive perceptions and reduce the weight of stereotypes and of mistrust with respect to the differences. Clearly, the promotion of direct contact between people with and without mental disabilities seems to remain the most effective way of combating fears and negative perceptions (Boysen, 2020). The enhancement of relationships via social networks (Maunder et al., 2019), professional settings (Corrigan & Nieweglowski, 2019), or between peers within schools are only some examples of how it possible to promote the inclusion of people with mental disabilities (Aubé et al., 2020).

To sum up, the present study allows examining in more detail people's perceptions of different mental disabilities. Our data and analyses also advance our understanding of the processes involved in the stigmatization of this specific population. This being said, the message merging from our data should be treated with some caution as the work also shows some limitations.

A first issue is that the present data collection remains a cross-sectional questionnaire. Although the assumed relation from stereotypes to emotions via perceived threat builds on a rich body of evidence accumulated by researchers on social evaluation, one should complement the present efforts by longitudinal data that would substantiate the underlying

causal model. Clearly, more empirical work is needed to investigate the exact direction of these links.

As another issue, the Cronbach's alphas of the threat to health and consideration dimensions remain modest in size (0.60 and 0.56, respectively). Although these levels are so low that they would invalidate the present results, future research could benefit from better internal consistency by improving the formulation of the items.

At a more general level, developing this line of research by further exploring the various mechanisms underlying social behaviors seems an essential step to understand the persistent barriers that pave the way to social inclusion for people with mental disability. Such knowledge should allow the development of remediation programs that, we hope, will prove efficient in fighting discrimination in this specific yet immensely important aspect of our society.

Appendix

Table 3 Items measuring perceived threats, stereotypes, and emotions

Perceived threat to…		Items
Physical safety	1	Most people fear the danger that *[people with mental disability]* pose to their physical safety
	2	Most people feel a physical threat from *[people with mental disability]*
Reciprocity relations because of inability	3	Most people fear that *[people with mental disability]* are not able to contribute as much as we do to the prosperity of our society
	4	Most people are alarmed that *[people with mental disability]* need to receive more from society than they are able to give back
Moral standing	5	When most people are confronted with *[people with mental disability]*, they are alarmed by the way they are treated with little consideration
	6	Most people are concerned about the extent of discrimination faced by *[people with mental disability]*
Health via contagion	7	When confronted with *[people with mental disability]*, most people fear that the illness will rub off on them
	8	Most people fear that *[people with mental disability]* increase their risk of getting sick
Trust relations	9	Most people are afraid to trust *[people with mental disability]*
	10	Most people fear that *[people with mental disability]* are unreliable
Economic resources	11	When confronted with *[people with mental disability]*, most people fear for their own job prospects
	12	Most people fear that *[people with mental disability]* are a threat to the economic balance of our country
Stereotypes		For most people, *[people with mental disability]* are…
Warmth	13	pleasant
	14	sociable
	15	warm
	16	trustworthy
	17	honest
	18	sincere
Competence	19	competent
	20	effective
	21	gifted
	22	ambitious
	23	determined
	24	self-confident
Effort	25	courageous
	26	conscientious
	27	motivated
Emotions		For most people, *[people with mental disability]* cause…
Anger	28	anger
	29	irritation
Fear	34	fear
	35	apprehension
Disgust	32	disgust
	33	repulsion
Pity	36	pity
	37	compassion
Guilt	30	guilt
	31	shame
Envy	38	envy
Admiration	39	admiration

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s12144-022-03655-1.

Authors contribution All authors contributed to all steps of the study.

Data availability The datasets generated during the current study are available in the OSF repository, https://osf.io/zvpfw/.

Declarations

Competing interests The authors have no competing interests to declare that are relevant to the content of this article.

Ethics approval All aspects of the study were in accordance with the ethical standards of both institutional and national research committees, and were consistent with the 1964 Helsinki Declaration and its later amendments. Moreover, an institutional ethics committee approved the research (accreditation number: CER/ Unistra /2018 09).

References

Abele, A. E., Ellemers, N., Fiske, S. T., Koch, A., & Yzerbyt, V. (2020). Navigating the social world: Toward an integrated framework for evaluating self, individuals, and groups. *Psychological Review*. https://doi.org/10.1037/rev0000262

Abele, A. E., & Wojciszke, B. (2007). Agency and communion from the perspective of self versus others. *Journal of Personality and Social Psychology, 93*(5), 751–763. https://doi.org/10.1037/0022-3514.93.5.751

Alexander, M. G., Brewer, M. B., & Hermann, R. K. (1999). Images and affect: A functional analysis of out-group stereotypes. *Journal of Personality and Social Psychology, 77*(1), 78–93. https://doi.org/10.1037/0022-3514.77.1.78

Angermeyer, M., & Matschinger, H. (2003). The stigma of mental illness: Effects of labelling on public attitudes towards people with mental disorder. *Acta Psychiatrica Scandinavica, 108*(4), 304–309. https://doi.org/10.1034/j.1600-0447.2003.00150.x

Angermeyer, M. C., & Dietrich, S. (2006). Public beliefs about and attitudes towards people with mental illness: A review of population studies. *Acta Psychiatrica Scandinavica, 113*(3), 163–179. https://doi.org/10.1111/j.1600-0447.2005.00699.x

Angermeyer, M. C., Holzinger, A., & Matschinger, H. (2010). Emotional reactions to people with mental illness. *Epidemiology and Psychiatric Sciences, 19*(1), 26–32. https://doi.org/10.1016/j.eurpsy.2008.06.010

Aromaa, E., Tolvanen, A., Tuulari, J., & Wahlbeck, K. (2011). Personal stigma and use of mental health services among people with depression in a general population in Finland. *BMC Psychiatry*. https://doi.org/10.1186/1471-244X-11-52

Aubé, B., Follenfant, A., Goudeau, S., & Derguy, C. (2021). Public stigma of autism spectrum disorder at school: Implicit attitudes matter. *Journal of Autism and Developmental Disorders, 51(5)*, 1584–1597.

Boysen, G. A. (2017). Explaining the relation between masculinity and stigma toward mental illness: The relative effects of sex, gender, and behavior. *Stigma and Health, 2*(1), 66.

Boysen, G. A. (2020). Mental illness and mate value: Evidence for reduced mate value among romantic partners perceived as having mental illness. *Evolutionary Behavioral Sciences.* Advance online publication.https://doi.org/10.1037/ebs0000255

Boysen, G. A., & Vogel, D. L. (2008). Education and mental health stigma: The effects of attribution, biased assimilation, and attitude polarization. *Journal of Social and Clinical Psychology, 27*(5), 447–470. https://doi.org/10.1521/jscp.2008.27.5.447

Brewer, M. B. (1999). The psychology of prejudice: Ingroup love and outgroup hate? *Journal of Social Issues, 55*(3), 429–444.

Brouwers, E. P. M. (2020). Social stigma is an underestimated contributing factor to unemployment in people with mental illness or mental health issues: Position paper and future directions. *BMC Psychology, 8*, 36. https://doi.org/10.1186/s40359-020-00399-0

Brouwers, E. P. M., Joosen, M. C. W., van Zelst, C., & Van Weeghel, J. (2020). To Disclose or Not to Disclose: A Multi-stakeholder Focus Group Study on Mental Health Issues in the Work Environment. *Journal of Occupational Rehabilitation, 30*(1), 84–92. https://doi.org/10.1007/s10926-019-09848-z

Carrier, A., Louvet, E., Chauvin, B., & Rohmer, O. (2014). The primacy of agency over competence in status perception. *Social Psychology, 45*, 347–356. https://doi.org/10.1027/1864-9335/a000176

Carver, C. S., & Harmon-Jones, E. (2009). Anger is an approach-related affect: Evidence and implications. *Psychological Bulletin, 135*(2), 183–204. https://doi.org/10.1037/a0013965

Clausell, E., & Fiske, S. T. (2005). When do subgroup parts add up to the stereotypic whole? Mixed stereotype content for gay male subgroups explains overall ratings. *Social Cognition, 23*(2), 161–181.

Corrigan, P., Michaels, P. J., & Morris, S. (2015). Do the effects of antistigma programs persist over time? Findings from a meta-analysis. *Psychiatric Services, 66*(5), 543–546.

Corrigan, P. W. (2016). Lessons learned from unintended consequences about erasing the stigma of mental illness. *World Psychiatry: Official Journal of the World Psychiatric Association (WPA), 15*(1), 67–73. https://doi.org/10.1002/wps.20295

Corrigan, P. W., Kuwabara, S. A., & O'Shaughnessy, J. (2009). The Public Stigma of Mental Illness and Drug Addiction: Findings from a Stratified Random Sample. *Journal of Social Work, 9*(2), 139–147. https://doi.org/10.1177/1468017308101818

Corrigan, P. W., & Nieweglowski, K. (2019). How does familiarity impact the stigma of mental illness? *Clinical Psychology Review, 70*, 40–50.

Corrigan, P. W., & Shapiro, J. R. (2010). Measuring the impact of programs that challenge the public stigma of mental illness. *Clinical Psychology Review, 30*(8), 907–922. https://doi.org/10.1016/j.cpr.2010.06.004

Corrigan, P. W., Watson, A. C., & Miller, F. E. (2006). Blame, shame, and contamination: The impact of mental illness and drug dependence stigma on family members. *Journal of Family Psychology, 20*(2), 239. https://doi.org/10.1037/0893-3200.20.2.239

Cottrell, C. A., & Neuberg, S. L. (2005). Different Emotional Reactions to Different Groups: A Sociofunctional Threat-Based Approach to "Prejudice." *Journal of Personality and Social Psychology, 88*(5), 770–789. https://doi.org/10.1037/0022-3514.88.5.770

Cuddy, A. J., Fiske, S. T., & Glick, P. (2007). The BIAS map: Behaviors from intergroup affect and stereotypes. *Journal of Personality and Social Psychology, 92*(4), 631–648. https://doi.org/10.1037/0022-3514.92.4.631

Dawydiak, E. J., Stafford, H. E., Stevenson, J. L., & Jones, B. C. (2020). Pathogen disgust predicts stigmatization of individuals with mental health conditions. *Evolutionary Psychological Science, 6*, 60–63. https://doi.org/10.1007/s40806-019-00208-x

Demoulin, S., Leyens, J. P., & Yzerbyt, V. (2006). Lay theories of essentialism. *Group Processes & Intergroup Relations, 9*(1), 25–42.

Dietrich, S., Matschinger, H., & Angermeyer, M. C. (2006). The relationship between biogenetic causal explanations and social distance toward people with mental disorders: Results from a population survey in Germany. *International Journal of Social Psychiatry, 52*(2), 166–174.

Eckes, T. (2002). Paternalistic and envious gender stereotypes: Testing predictions from the stereotype content model. *Sex Roles, 47*(3), 99–114.

Fiske, S. (2015). Intergroup biases: A focus on stereotype content. *Current Opinion in Behavioral Sciences, 3*, 45–50. https://doi.org/10.1016/j.cobeha.2015.01.010

Fiske, S. T., Cuddy, A. J., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology, 82*, 878–902. https://psycnet.apa.org/doi/https://doi.org/10.1037/0022-3514.82.6.878.

Florian, V., Mikulincer, M., & Hirschberger, G. (1999). The anatomy of a problematic emotion—the conceptualization and measurement of the experience of pity. *Imagination, Cognition and Personality, 19*(1), 3–25.

Hinshaw, S. P. (2009). *The mark of shame: Stigma of mental illness and an agenda for change*. Oxford University Press.

Holzinger, A., Beck, M., Munk, I., Weithaas, S., & Angermeyer, M. C. (2003). Stigma as perceived by schizophrenics and depressives. *Psychiatrische Praxis, 30*(7), 395–401.

Judd, C. M., Yzerbyt, V. Y., & Muller, D. (2014). Mediation and moderation. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (2nd ed., pp. 653–676). Cambridge University Press.

Jury, M., Perrin, A. L., Desombre, C., & Rohmer, O. (2021). Teachers' attitudes toward the inclusion of students with autism spectrum disorder: Impact of students' difficulties. *Research in Autism Spectrum Disorders, 83*.

Kervyn, N., Fiske, S. T., & Yzerbyt, V. Y. (2015). Forecasting the primary dimension of social perception: Symbolic and realistic threats together predict warmth in the stereotype content model. *Social Psychology, 46*, 36–45. https://doi.org/10.1027/1864-9335/a000219

Koch, A., Yzerbyt, V., Abele, A. E., Ellemers, N., & Fiske, S. T. (2020). Social evaluation: Comparing models across interpersonal, intragroup, intergroup, several-group, and many-group contexts. *Advances in Experimental Social Psychology*. https://doi.org/10.1016/bs.aesp.2020.11.001

Lauber, C., Nordt, C., Falcato, L., & Rössler, W. (2004). Factors influencing social distance toward people with mental illness. *Community Mental Health, 40*, 265–274. https://doi.org/10.1177/07067437050500120 3

Mannarini, S., Boffo, M., Rossi, A., & Balottin, L. (2018). Etiological beliefs, treatments, stigmatizing attitudes towards schizophrenia. What do Italians and Israeli think? *Frontiers in Psychology, 8*, 2289. https://doi.org/10.3389/fpsyg.2017.02289.

Mannarini, S., & Rossi, A. (2019). Assessing mental illness stigma: A complex issue. *Frontiers in Psychology, 9*, 2722. https://doi.org/10.3389/fpsyg.2018.02722

Maunder, R. D., White, F. A., & Verrelli, S. (2019). Modern avenues for intergroup contact: Using E-contact and intergroup emotions to reduce stereotyping and social distancing against people with schizophrenia. *Group Processes & Intergroup Relations., 22*(7), 947–963. https://doi.org/10.1177/1368430218794873

Ozawa, A., Kikuchi, E., & Yaeda, J. (2016). Causal Analysis of Employer Attitude Formation Toward Employing Individuals with Psychiatric Disabilities. *Journal of Vocational Rehabilitation, 44*(2), 201–212. https://doi.org/10.3233/JVR-150791

Pescosolido, B. A., Monahan, J., Link, B. G., Stueve, A., & Kikuzawa, S. (1999). The public's view of the competence, dangerousness, and need for legal coercion of persons with mental health problems. *American Journal of Public Health, 89*(9), 1339–1345. https://doi.org/10.2105/ajph.89.9.1339

Phelan, J., Link, B., Stueve, A., & Pescosolido, B. (2000). Public Conceptions of Mental Illness in 1950 and 1996: What Is Mental Illness and Is It to be Feared? *Journal of Health and Social Behavior, 41*(2), 188–207. http://www.jstor.org/stable/2676305

Pinfold, V., Byrne, P., & Toulmin, H. (2005). Challenging stigma and discrimination in communities: A focus group study identifying UK mental health service users' main campaign priorities. *International Journal of Social Psychiatry, 51*(2), 128–138.

Robinson, P., Turk, D., Jilka, S., & Cella, M. (2019). Measuring attitudes towards mental health using social media: Investigating stigma and trivialisation. *Social Psychiatry and Psychiatric Epidemiology, 54*(1), 51–58. https://doi.org/10.1007/s00127-018-1571-5

Rohmer, O., & Louvet, E. (2004). Familiarité et réactions affectives à l'égard des personnes handicapées physiques. *Bulletin De Psychologie, 57*, 165–170.

Rohmer, O., & Louvet, E. (2018). Implicit stereotyping against people with disability. *Group Processes and Intergroup Relations, 21, 127–140.* Article first published online: March 28, 2016. https://doi.org/10.1177/1368430216638536.

Ruggeri, M., Leese, M., Thornicroft, G., Bisoffi, G., & Tansella, M. (2000). Definition and prevalence of severe and persistent mental illness. *The British Journal of Psychiatry: The Journal of Mental Science, 177*, 149–155. https://doi.org/10.1192/bjp.177.2.149

Rüsch, N., Angermeyer, M. C., & Corrigan, P. W. (2005). Mental illness stigma: Concepts, consequences, and initiatives to reduce stigma. *European Psychiatry, 20*(8), 529–539. https://doi.org/10.1016/j.eurpsy.2005.04.004

Russinova, Z., Griffin, S., Bloch, P., Wewiorski, N. J., & Rosoklija, I. (2011). Workplace prejudice and discrimination toward individuals with mental illnesses. *Journal of Vocational Rehabilitation, 35*(3), 227–241. https://doi.org/10.3233/JVR-2011-0574

Sadler, M. S., Kaye, K. E., & Vaughn, A. A. (2015). Competence and warmth stereotypes prompt mental illness stigma through emotions. *Journal of Applied Social Psychology, 45*(11), 602–611. https://doi.org/10.1111/jasp.12323

Sadler, M. S., Meagor, E. L., & Kaye, K. E. (2012). Stereotypes of mental disorders differ in competence and warmth. *Social Science & Medicine, 74*(6), 915–922. https://doi.org/10.1016/j.socscimed.2011.12.019

Santuzzi, A., Waltz, P., Finkelstein, L., & Rupp, D. (2014). Invisible disabilities: Unique challenges for employees and organizations. *Industrial and Organizational Psychology, 7*(2), 204–219. https://doi.org/10.1111/iops.12134

Schomerus, G., Schwahn, C., Holzinger, A., Corrigan, P. W., Grabe, H. J., Carta, M. G., & Angermeyer, M. C. (2012). Evolution of public attitudes about mental illness: A systematic review and meta-analysis. *Acta Psychiatra Scandinavia, 125*(6), 440–452. https://doi.org/10.1111/j.1600-0447.2012.01826.x

Sirlopu, D., González, R., Bohner, G., Siebler, F., Ordónez, G., Millar, A., Torres, D., & De Tezanos-Pinto, P. (2008). Promoting positive attitudes toward people with down syndrome: The benefit of school inclusion programs. *Journal of Applied Social Psychology, 38*(11), 2710–2736.

Stephan, W. G., & Renfro, C. L. (2002). The role of threat in intergroup relations. In D. Mackie & E. R. Smith (Eds.), *From prejudice to intergroup emotions: Differentiated reactions to social groups* (pp. 191–207). Psychology Press.

Stephan, W. G., Renfro, C. L., & Davis, M. D. (2008). *The role of threat in intergroup relations.* In U. Wagner, L. R. Tropp, G. Finchilescu, & C. Tredoux (Eds.), *Social issues and interventions. Improving intergroup relations: Building on the legacy of Thomas F. Pettigrew* (p. 55–72). Blackwell Publishing. https://doi.org/10.1002/9781444303117.ch5.

Tajfel, H. (1981). *Human groups and social categories: Studies in social psychology*. Cup Archive.

Tajfel, H., Billig, M. G., Bundy, R. P., & Flament, C. (1971). Social categorization and intergroup behaviour. *European Journal of Social Psychology, 1*(2), 149–178.

United Nations. (2006). Convention on the Rights of Persons with Disabilities. *Treaty Series, 2515*, 3.

Vallée, J. Duhamel, S., Moullé, F. (2010). Frontières et santé. Genèses et maillages des réseaux transfrontaliers [Borders and health. Genesis and meshing of cross-border networks]. *European Journal of Geography*. https://doi.org/10.4000/cybergeo.24769.

Villotti, P., Zaniboni, S., Corbière, M., Guay, S., & Fraccaroli, F. (2018). Reducing perceived stigma: Work integration of people with severe mental disorders in Italian social enterprise. *Psychiatric Rehabilitation, 41*(2), 125–134. https://doi.org/10.1037/prj0000299

Vornholt, K., Villotti, P., Muschalla, B., Bauer, J., Colella, A., Zijlstra, F., Van Ruitenbeek, G., Uitdewilligen, S., & Corbière, M. (2018). Disability and employment – overview and highlights. *European Journal of Work and Organizational Psychology, 27*(1), 40–55. https://doi.org/10.1080/1359432X.2017.1387536

World Health Organization (2017). Depression and other common mental disorders: global health estimates (No. WHO/MSD/MER/2017.2). World Health Organization

Wu, J., & Fiske, S. T. (2019). Disability's Incompetent-but-Warm Stereotype Guides Selective Empathy. In Dunn, D. S. (Ed.). *Understanding the experience of disability: Perspectives from social and rehabilitation psychology*. Oxford University Press.

Yzerbyt, V. (2016). Intergroup stereotyping. *Current Opinion in Psychology, 11*, 90–95. https://doi.org/10.1016/j.copsyc.2016.06.009

Yzerbyt, V. (2018). The dimensional compensation model: Reality and strategic constraints on warmth and competence in intergroup perceptions. In A. Abele & B. Wojciszke (Eds.), *Agency and Communion in Social Psychology* (pp. 126–141). Routledge.