Basic and Applied Social Psychology

ISSN: 0197-3533 (Print) 1532-4834 (Online) Journal homepage: www.tandfonline.com/journals/hbas20

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To cite this article: Diogo C. da Silva & Teresa Garcia-Marques (09 Mar 2026): Stereotyping When It Fits: How Perceived Face—Label Match Shapes Mental Illness Judgments, Basic and Applied Social Psychology, DOI: 10.1080/01973533.2026.2641105

To link to this article: https://doi.org/10.1080/01973533.2026.2641105

BASIC AND APPLIED SOCIAL PSYCHOLOGY
https://doi.org/10.1080/01973533.2026.2641105

Stereotyping When It Fits: How Perceived Face—Label Match Shapes Mental Illness Judgments

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ABSTRACT

This paper extends research on how mental illness (MI) labels affect personality inference by introducing a target face. We hypothesized that the influence of label/stereotypes is limited by how individuals perceive facial cues as fitting the label. In three experiments, participants rated targets on competence, warmth, dominance, and trustworthiness based on face photos paired with either a healthy or MI label (Experiment 1), or with labels of depression and schizophrenia (Experiments 2 and 3). As predicted, labels influenced perceptions only when facial features were seen as fitting the label. In these cases, MI and schizophrenia labels increased perceived dominance and reduced other traits. When perceived to match the face, the depression label produced a distinct stereotype profile from MI, aligning with previous findings. These findings highlight the interplay between top-down and bottom-up processes in person perception, corroborating that subtle mismatches with stereotypes can reduce the biasing effects of MI labels.

Statement of contribution

- *What is already known on this subject?*

- Diagnostic labels such as "depression" or "schizophrenia" influence social judgments.
- Stereotypes about mental illness shape perceived competence, warmth, and trustworthiness.
- Top-down and bottom-up processes both contribute to impression formation.

What does this study add?

- Shows label-face fit determines when stereotypes guide judgments.
- Reveals depression labels elicit distinct, non-stereotypic impressions.
- Identifies how top-down effects depend on bottom-up facial cues.

Introduction

Current research shows that labeling individuals as having a mental illness (MI) negatively affects how they are perceived. Simply categorizing someone as having a MI influences judgments of personality traits, leading to perceptions of them as dangerous, unpredictable, socially awkward, irresponsible, unreliable, and less capable (Asbrock, 2010; Cuddy et al., 2009; Hayward & Bright, 1997; Meyer & Asbrock, 2018; Sadler et al., 2012). This perception makes individuals targets of discriminatory attitudes, such as social distancing (Corrigan et al., 2001), rejection across all levels of relationship intimacy, and even dehumanization (Boysen et al., 2020; da Silva et al., 2025b; Svoli et al., 2018).

The reliance on stereotyping likely arises from the fact that it spares people the trouble of thinking deeply about a target (e.g., Allport, 1954; Brewer, 1988; Fiske & Neuberg, 1990; Hilton & von Hippel, 1996; Macrae & Bodenhausen, 2000). However, our cognitive system is sensitive to the applicability of the stereotype. The impact of stereotyping has been shown to be constrained by the degree of perceived applicability or match between stereotypic expectations and the target's specific features (e.g., Fiske & Neuberg, 1990; Garcia-Marques et al., 2006; Kunda & Thagard, 1996). Thus, the influence of stereotypes of how a specific target with MI is perceived may depend on how the perceiver experiences this match. In this

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Supplemental data for this article can be accessed online at https://doi.org/10.1080/01973533.2026.2641105.

paper, we examine the effects of MI stereotypes, extending evidence of MI label influence beyond settings where only the label is known.

To date most research on the influence of MI stereotypes has been examined at a category level, and specific target features perceived at an interpersonal level were disregarded, leaving open the question of their impact. Focusing on the impact of MI stereotypes at an interpersonal level is particularly relevant given the prevalence of MI in the population. One in eight persons in the world suffers from some MI (Institute of Health Metrics and Evaluation, 2021) and one in four people persons is expected to experience it during their lifetime (World Health Organization, 2001), with the COVID-19 pandemic further increasing prevalence (Clemente-Suárez et al., 2021). Given that people often interact face-to-face with individuals diagnosed with a MI, it is important to examine whether a label can be perceived as not fitting the stereotype and whether this can reduce its harmful impact. Because face-to-face meetings are typical of interpersonal encounters, we ask whether simply adding a face to the label could interfere with reliance on MI stereotypes. We ask whether face processing enables a stereotype match or mismatch experience, moderating the stereotype's impact so it negatively influences perception only when seen as applicable to the specific target. Below, we ground our hypothesis in the literature to show why this is an empirical question that deserves testing.

MI stereotypes: can their impact be restricted?

The Stereotype Content Model (SCM; Fiske et al., 2007) identifies warmth and competence as core stereotype dimensions, and labels such as "mentally ill" (Cuddy et al., 2009), "people with mental illness" (Sadler et al., 2012), or "people with mental disabilities" (Asbrock, 2010; Meyer & Asbrock, 2018) typically map MI onto a low-competence and medium/low-warmth quadrant.

A similar stereotype to general MI is associated with the specific MI label of schizophrenia (Allstadt Torras et al., 2023; Boysen et al., 2023; Fiske, 2012; Görzig et al., 2020; Görzig & Ryan, 2022; Ryan, 2015; Sadler et al., 2012, 2015; Sönmez & Karaoğlu, 2023). However, results are not so clear in what concern the specific MI label of depression. The findings describing stereotypes of depression are heterogeneous (i.e., placed in medium-competence and medium-warmth; low-competence and low-warmth; high-competence and low-warmth; or medium-competence and high-warmth), suggesting inconsistent perceptions of these targets (Allstadt Torras et al., 2023; Boysen et al., 2023; Fiske, 2012; Follmer & Jones, 2017; Görzig et al., 2020; Sadler et al., 2012, 2015).

Without people realizing it these stereotypes are constantly shaping how people perceive MI targets and how they interact with them. Their negative content leads to unnoticed negative attitudes and behaviors (Baumann, 2007; Jorm et al., 2012; Link & Cullen, 1983; Pescosolido et al., 1999; Wolff et al., 1996) as well as more subtle forms of discrimination (da Silva et al., 2025b).

One reason this influence may go unnoticed is that individuals may believe they are focusing on other cues and avoid stereotype bias when it "doesn't make sense." In fact, research shows that the influence of stereotypes on judgments is constrained by their perceived applicability to the target (Fiske & Neuberg, 1990; Garcia-Marques et al., 2006; Kunda & Thagard, 1996). Thus, individuals may believe they are not blindly relying on the label of MI, as they perceive its influence to occur only when it appears to fit the target. If that is the case, the MI stereotype influence may be restricted by their perceived applicability.

The applicability principle[1] is integrated into several key models and substantiated by extensive empirical evidence. The Continuum Model of Impression Formation (Fiske & Neuberg, 1990) posits that impressions range from rapid, stereotype-based judgments to more deliberate, individualized evaluations. When a target clearly matches a stereotype and motivation is low, perceivers rely more on categorical thinking; when the target does not fit, or when motivation or individuating information is high, perceivers form more nuanced judgments (Fiske et al., 1999; Neuberg & Fiske, 1987). Similarly, the Parallel-Constraint-Satisfaction Model of impression formation (Kunda & Thagard, 1996), argues that stereotype use depends on the consistency and applicability of available information. Empirical work shows that when information about a target is ambiguous or contradicts a stereotype, perceivers are less likely to apply the stereotype and instead integrate multiple cues (Fiske & Neuberg, 1990; Garcia-Marques et al., 2006; Kunda & Thagard, 1996).

Integrating facial cues with MI information

In interpersonal encounters, the mere presence of a face is likely to provide cues about the perceived applicability of a label. A label paired with a face can interfere with stereotyping by making it dependent on whether the facial features match stereotypical expectations. When a target's facial appearance is ambiguous

or mismatches the stereotype, this can reduce stereotype fit, limiting reliance on category-based information. This is consistent with findings that individuals whose features are less prototypical of their group are judged less stereotypically (e.g., Dixon & Maddox, 2005; Freeman & Ambady, 2009; Rodríguez-Gómez, et al., 2020; Sofer et al., 2015) and perceivers are slower or less confident in applying stereotypes to such faces (Freeman & Ambady, 2011; Kawakami et al., 2017). Thus, the fit between a face and a stereotype function as a key moderator: when the match is weak ("facial misfits"), perceivers rely less on stereotypes and may shift to individuated processing (Golubickis, et al 2024). This underscores how visual cues can either confirm or conflict with stereotypes, modulating their applicability.

What cues do perceivers rely on in a face to assess applicability? Research shows that people rapidly inferred traits such as trustworthiness and dominance in less than 100 milliseconds (Oosterhof & Todorov, 2008). These traits form the two core dimensions of the facial personality structure (Fruhen et al., 2015; Oliveira et al., 2019; Oosterhof & Todorov, 2008; Ramos et al., 2016) and partially overlap with the personality features that characterize stereotype content (Oliveira et al., 2019). Specifically, perceived trustworthiness maps onto warmth, linking face-based inferences to stereotype-relevant dimensions.

Importantly, personality inferences from faces depend on facial morphology (Flowe, 2012; Oliveira & Garcia-Marques, 2022), and morphology itself may signal MI. In fact, there is evidence that the facial features of a person with MI may inform perceivers about the illness state (Daros et al., 2016; Frowd et al., 2015; Scott et al., 2013; Ward & Scott, 2018). For example, Frowd et al. (2015) identified a "mentally ill" face type using synthetic faces, which showed significant diagnostic value (see also Daros et al., 2016; Scott et al., 2013). Ward and Scott (2018) extended this work with real targets, creating composite images of men with extreme scores on depression, schizotypy, and autism spectrum inventories. Participants rated these images for mental health, and ratings accurately reflected individuals' actual mental health, in ways not explained by other appearance variables.

Evidence that both labels (top-down processes) and facial features (bottom-up processes) shape face perception supports our claim that the latter may constrain the biases promoted by the former. The hypothesis is clear, the degree of match between the two processes can either facilitate or counteract stereotype influences.

However, there is a caveat that challenges the former hypothesis; the fact that stereotypes themselves can bias the very features perceived in a face, leading perceivers to see a stronger match than may objectively exist. Prior expectations (Kunda & Thagard, 1996; Stolier et al., 2018) bias impressions believed to stem from morphological features in universal ways (Willis & Todorov, 2006; Oosterhof & Todorov, 2008; Collova et al., 2019). Stereotypes not only shape how people interpret faces (Freeman et al., 2020; Xie et al., 2021) but also influence the core dimensions of facial impressions (Oh et al., 2020; Sutherland et al., 2015). For instance, perceived economic status can affect competence judgments (Oh et al., 2020), and race or gender can drive stereotype-consistent inferences about competence and trustworthiness (Xie et al., 2021). Similarly, MI stereotypes bias how expressions are read: Cassidy and Krendl (2018) showed that faces arbitrarily labeled as "depressed" were perceived as sadder than identical faces labeled as "healthy."

This caveat makes the question an empirical one, to be tested.

Overview

Three experiments[2] approach how MI labels impact personality trait evaluations from faces, and how perceived fit of facial features with the label moderates this process.

Personally, traits to be evaluated were selected from face processing literature, and the Stereotype-Content model, which has suggested a clear personality space to map MI. Labels were independent variables, with perceived applicability assessed as a continuum moderator. Dependent variables included the two stereotype content traits (warmth, competence) and the two face-relevant dimensions (trustworthiness, dominance). In general, we expect labels to influence these variables only when perceived applicability is present, and not when it is absent. However, if labels themselves distort perception in a way that imposes perceived applicability, this hypothesis would not be testable. In that case, all labeled faces would be perceived as fitting with the labels, eliminating conditions in which labeled stimuli are perceived as non-applicable.

In Experiment 1, participants rated neutral healthy faces, half randomly paired with a MI label, after first indicating the perceived label-face fit. Experiment 2 replicated this procedure but contrasted schizophrenia and depression labels with mental health. Experiment 3 replicated Experiment 2, adding a measure of perceived typicality for schizophrenia and depression as representing the MI category.

Our expectations of how labels influence judgments are either directly supported in research regarding the stereotype content of each category or in the relation known between traits. We expect MI labels to elicit ratings of lower competence and medium warmth compared to controls, and schizophrenia labels to elicit low competence and low warmth (Fiske, 2012). Predictions for depression were less straightforward, given the inconsistent findings in the literature (see above). Expectations for trustworthiness are inferred from its strong association with warmth (Oliveira & Garcia-Marques, 2022) and for dominance from traits stereotypically linked to MI (dangerousness, impulsiveness, aggressiveness; Angermeyer & Dietrich, 2006; Jorm et al., 2012), which are associated with high dominance (Todorov et al., 2008; Lefevre et al., 2014). Schizophrenia, often perceived as more violent, unpredictable, and dangerous than depression (Angermeyer & Dietrich, 2006; Pescosolido et al., 1999; Wood et al., 2014), was expected to amplify this pattern. In contrast, depression is associated with sadness, low energy, and fatigue (Hogg, 2011; Räty et al., 2006). In Experiment 3, we further explored whether perceived typicality clarifies the convergence of schizophrenia stereotypes with general MI and the divergence of depression stereotypes.

These hypotheses lead us to expect that, if variability in label applicability is observed, the effects of labels on trait evaluations will occur only in trials where participants perceive the label as applicable, that is, label effects should be moderated by perceived applicability. Under these conditions, we expect stereotypes to guide judgments. Accordingly, when perceived fit is high, MI and schizophrenia labels should elicit lower ratings of warmth, competence, trustworthiness, and higher ratings of dominance, whereas the depression label should produce a distinct pattern of trait evaluations.

For each of the three experiments, a minimum sample size of 64 participants was targeted to detect within-subject main effects or their qualification by a between-subject factor, assuming an effect size of f = 0.20 (a conservative small-to-moderate effect), 90% statistical power, and α = .05 (G*Power; Faul et al., 2007).

Transparency statement

The experiments and results analysis were not pre-registered[3]. Material (photos, instructions, questionnaire items, response scales, and task order used in this experiment), data, and analysis (with *Jamovi v.2.3.28*) can be consulted in *OSF* link: https://osf.io/qvg2z/?view_only=e3d6232dbc0f4529b64d4d2d709016a0. All measures, conditions, and data exclusions are disclosed.

Experiment 1

Participants and design

A sample of 75 Psychology undergraduates (90.7% female; M_{age}= 20.12, *SD*= 5.30) with 25.3% reporting have suffered some MI, participated in this ethical approved experiment, in exchange for course credits.

All participants evaluated faces with different labels (no MI vs. MI), making our design a 2 (different labels) x 2 (material order: order 1—no MI vs. MI; order 2—MI vs. no MI), with the latter being between-subjects.

Face stimuli

A total of 16 color facial photographs of young adults in a frontal view (8 men and 8 women), displaying a neutral facial expression and a direct gaze support this study (see more detailed in referred *OSF* link). The photos were selected from face databases (e.g., PAL; Minear & Park, 2004) in such that: a) faces were selected to be broadly typical for the Portuguese participant pool, to minimize the influence of salient out-group cues unrelated to MI; b) the photographs were taken under controlled and similar conditions (e.g., lighting settings and uniform background); c) the photographs did not show much visible clothing (or as little as possible) or contained standard clothing (not very colorful); d) there was no presence (or as little as possible) of accessories such as jewelry, makeup, etc.; e) the faces were of young adults.

Each gender set of 8 faces was randomly divided into two different study sets to be or not associated with the MI label, allowing counterbalance of materials.

Procedure

The Qualtrics platform supported laboratory collection of data. After consenting, participants learned that they would be presented with individual face photos, labeled as having or not having a MI; "*This person suffers from a mental illness*" or "*This person does not suffer from any mental illness*". The label wording was identical across trials and appeared simultaneously with the facial photograph. They were then randomly allocated to one of the experimental conditions that counterbalance materials and labels. The procedure follows a typical perceptual experimental paradigm, where participants are presented with multiple stimuli (trial) and required to provide rapid evaluations on simple rating scales. These simple scale responses are

designed to capture immediate perceptual or judgmental processes with minimal cognitive deliberation[4]. Each photo appeared in the middle of the screen with a white background. For each face, participants' attention was first drawn to the presence or absence of the MI label by asking them to provide an initial judgment of the perceived applicability of the diagnostic label to the individual depicted. Specifically, participants were asked to *what extent can you perceive a match between the label and the person in the photo* and provided with a 9-point scale to answer (1- *cannot perceive (a match*) at all and 9—*can clearly perceive (a match)*)[5]. Although the anchors refer to perceptibility, this measure was intended to capture perceived congruence between the label and the individual rather than perceptual visibility of specific facial features. Subsequently, participants evaluated each face on its perceived trustworthiness, dominance, competence, and warmth, on a scale from 1 (*untrustworthy/submissive/incompetent/unfriendly*) to 9 (*trustworthy/dominant/competent/friendly*).

Finally, for controlling for familiarity with MI, participants report whether they suffer from, have suffered from, or know someone who has a MI[6], along with some sociodemographic questions. After a brief debriefing, participants were thanked and dismissed.

Results

We evaluate whether a label of MI (MI-label versus No MI-label = H-label) impacted perceived personality by first approaching the pair competence/warmth, followed by the pair dominance/trustworthiness. To control for participants and face variability (through adding them as random effects), we rely on a linear mixed model (Singmann & Kellen, 2019) to estimate the effects, of Condition (MI-label vs. H-label), Trait type (warmth-competence; dominance-trustworthiness) and Fit (as a continuous factor). See Supplementary Materials (S2) for estimation of effects without considering the continuous factor and (S3) for analyses clarifying that fit did not systematically vary as a function of label.

Full model outputs and ancillary analyses are reported in Supplementary Materials (S2-S4).

Perceived stereotype applicability

The variability in how participants perceived the level of fit for each image suggests that stereotypes did not automatically impose a match onto the face. Perceived fit ratings for the images ranged from 1 to 9, with means between 3.29 and 4.89, and standard deviations ranging from 2.51 to 2.90.

Warmth—competence

Perceived fit induced differences in the extremity of the overall ratings (HPF targets, defined by +1 *SD;* $M = 5.54$, $SE = .15$ vs. LPF targets, defined by −1 *SD*; $M = 5.38$, $SE = .15$).

Crucially, for our hypothesis, fit moderates the impact of the Label. First, because it changes the differences in the extremity of the evaluations of both traits promoted by the labels. Only for HPF targets the MI-labeled faces were evaluated ($M = 5.33$, $SE = .16$) less favorably than H-labeled faces $M = 5.75$, $SE = .16$). For LPF targets this labeling contrast was reversed (MI: $M = 5.58$, $SE = .16$; H: $M = 5.17$, $SE = .16$), suggesting that stereotypes were not driven by the evaluations.

Secondly, because it clearly suggests a selective use of the stereotype is clearer when we attend to the traits being evaluated (see Figure 1). For HPF targets, MI-labeled faces were evaluated lower than H-labeled faces on both warmth ($d = 0.18$) and competence ($d = 0.09$). For LPF, the label contrast shifted direction for warmth (MI-labeled faces were evaluated as warmer than H-labeled faces; $d = 0.21$), while competence differences remained comparatively small ($d = 0.05$). Only for HPF targets these results replicate prior evidence of MI stereotype content being perceived as lower in warmth and competence (Asbrock, 2010; Cuddy et al., 2009; Meyer & Asbrock, 2018) than healthy participants.

Trustworthiness—dominance

Faces were in general evaluated as more dominant ($M = 5.20$, $SE = .11$) than trustworthy ($M = 4.59$, $SE = .11$), and perceived fit had no impact on such difference or promote itself any change in the extremity of the judgments.

However, importantly it created conditions for the label exerting its effects promoting differences in the extremity of evaluations. For HPF targets the MI-label induced lower levels of evaluation of these traits ($M = 4.69$, $SE = .12$) than the H-label ($M = 5.21$, $SE = .13$). For the LPF targets the MI-label induced higher levels of evaluation of these traits ($M = 4.97$, $SE = .13$) than the H-label ($M = 4.71$, $SE = .13$).

To clearly understand the different reliance of the stereotype content under high and low perceived fit, Figure 1 shows that for HPF targets MI-labeled faces were evaluated as less trustworthy than H-labeled faces ($d = -0.23$), while dominance differences were comparatively smaller ($d = -0.04$). For LPF targets the label contrast shifted direction for both traits, with MI-labeled faces evaluated as more trustworthy ($d = 0.23$) and less dominant ($d = 0.09$) than H-labeled faces.

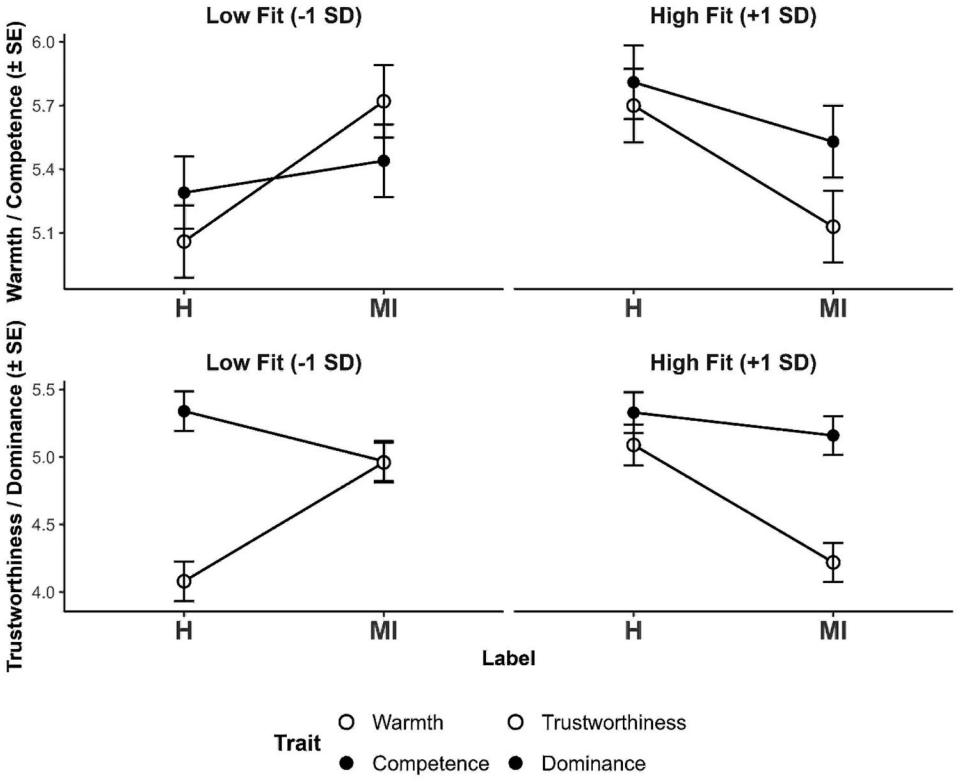

Figure 1. Mean trait ratings by diagnostic label (H-labeled vs MI-labeled) and perceived face-label fit (*LPF* vs *HPF*) in Experiment 1. *Note*: Points represent model-estimated means; error bars represent ±1 *SE*. *LPF* = low fit (−1 *SD*) and *HPF* = high fit (+1 *SD*).

Table 1. Perceived fit-contingent associations among Warmth, Competence, Trustworthiness and Dominance (Experiment 1).

	Within models		Between models	
	Warmth—Competence	Trustworthiness—Dominance	Warmth—Trustworthiness	Competence—Dominance
General	β = .33	β = −.17	β = .57	β = .12
HPF	β = .33	β = −.17	β = .57	β = .17
LPF	β = .33	β = −.17	β = .57	β = .07

Note: Entries are conditional mixed-model slopes (β) evaluated at low (LPF; *−1 SD*), mean (General), and high (HPF; *+1 SD*) levels of perceived fit.

Relationships between dimensions

We examined associations among the four trait ratings to assess convergence between the stereotype-relevant dimensions (warmth, competence) and the expected face-relevant dimensions (trustworthiness, dominance), across the two levels of perceived fit (high—HPF; low—LPF).

Results displayed in Table 1 show that the ratings of the traits within each personality space (SCM and Face perception) are not independent, having a small to moderate magnitude, with a positive pattern for the SCM and a negative pattern for the Face perception traits. Across personality spaces, we find that, replicating previous findings, warmth is strongly associated with trustworthiness, whereas competence-dominance links were comparatively weaker and varied with perceived fit. Perceived fit only influences this weaker relationship.

Experiment 2 extended Experiment 1 by replacing the general MI label with two specific diagnostic labels (depression and schizophrenia) to test whether fit-dependent effects vary across disorders.

Experiment 2

Participants and design

A sample of 74 Portuguese students (67 females; M_{age}= 19.90, *SD*= 4.99), with 25.7% reporting suffering from some MI, participated in this study in exchange for curricular unit credits in the Psychology bachelor's program.

The participants viewed (and evaluated) faces with 3 different labels (no MI vs. depression vs. schizophrenia), resulting in a 3 (different labels) x 3 (order of materials: order 1—no MI vs. depression vs.

schizophrenia; order 2—schizophrenia vs. no MI vs. depression; order 3—depression vs. schizophrenia vs. no MI) design, with the latter being between-subjects.

Face stimuli

The selection of facial stimuli followed the same criteria used in Experiment 1. A total of 18 face photographs, all of which were different from Experiment 1, were selected for this study (see more in detail in the referred *OSF* link). Gender faces were balanced in this material, and the attribution of different labels were randomized across the 18 faces.

Procedure

The procedure followed closely the one used in Experiment 1, with the difference that there were 3 (instead of 2) types of labels (no MI vs. depression vs. schizophrenia) attached to the faces, and three counterbalanced conditions associated. Diagnostic labels explicitly referred to specific mental health conditions, faces were labeled either "*This person suffers from depression*", "This person suffers from schizophrenia" or "*This person does not suffer from any mental illness*", depending on condition. These labels were presented with verbatim below each facial photograph. As in Experiment 1, perceived fit was operationalized as participants' subjective judgment of the applicability or congruence of the diagnostic label to the individual depicted. For each face-label pairing, participants first provided an initial judgment of the perceived fit between the label and the depicted individual, prior to evaluating the target on the trait dimensions.

All instructions, questionnaire items, response scales, and task order used in this experiment are available in full in the *OSF* repository.

Results

Data analysis followed closely Experiment 1, statistical details offered in sections S5-S7 of Supplementary Materials. We now contrasted three Label conditions (No MI label = H-label; schizophrenia label; depression label) with regard two trait types (warmth/competence or trustworthiness/dominance) having perceived fit as a continuous predictor.

Perceived stereotype applicability

Once more levels of variability in perceived ratings are incompatible with the hypothesis that labels are inducing faces to fit the stereotype. The perceived fit ratings for the images ranged most frequently from 1 to 9, with means between 2.70 and 4.01, and standard deviations ranging from 2.02 to 2.85.

Warmth—competence

Replicating Experiment 1, rating on these ratings were more extreme for HPF targets ($M = 5.51$, $SE = .16$) than LPF targets ($M = 5.35$, $SE = .16$).

Directly attesting the relevance of perceived fit, the impact of the labels in the extremity of evaluations of these two traits was differently exerted for HPF targets than LPF targets. For the HPF targets H-label faces ($M = 5.61$, $SE = .17$) and the depression label faces ($M = 5.72$, $SE = .17$) ratings on these two traits were more extreme than targets with the schizophrenia label ($M = 5.20$, $SE = .18$). For the LPF targets the differences between the two MI conditions were generally attenuated (depression: $M = 5.60$, $SE = .17$; schizophrenia $M = 5.36$, $SE = .17$) and the evaluation of the H-label, was reduced ($M = 5.07$, $SE = .17$).

But that pattern is only made clear when we focus on the interaction between all the factors (see Figure 2). For HPF, schizophrenia-labeled faces were evaluated less favorably both on warmth and competence than both depression-labeled (warmth: $d = -0.18$; competence: $d = -0.10$) and H-labeled faces (warmth: $d = -0.11$; competence: $d = -0.10$). However, for LPF warmth ratings were generally higher for both diagnostic labels than for the H-label (schizophrenia-labeled faces: $d = -0.17$; depression-labeled: $d = -0.06$), whereas competence differences were comparatively smaller and less differentiated across labels (schizophrenia-labeled faces: $d = 0.01$; depression-labeled: $d = -0.06$).

As such, only for HPF faces, the results replicate evidence of a negative stereotype of schizophrenia (low-warmth and low-competence: Allstadt Torras et al., 2023; Boysen et al., 2023; Fiske, 2012; Görzig et al., 2020; Görzig & Ryan, 2022; Ryan, 2015; Sadler et al., 2012, 2015; Sönmez & Karaoğlu, 2023), as well as evidence of stronger derogation of schizophrenia than depression (Boysen et al., 2023; Sadler et al., 2012).

Trustworthiness—dominance

As in Experiment 1, perceived fit did not impact the extremity of these traits ratings but determined the impact of labels. For HPF ratings of these two traits were more extreme for faces labeled as H ($M = 5.17$, $SE = .13$) than those labeled as depression ($M = 4.83$, $SE = .12$) and schizophrenia ($M = 4.68$, $SE = .13$). The pattern changes for LPF faces, where faces labeled as H ($M = 4.59$, $SE = .12$) where rated less extreme than

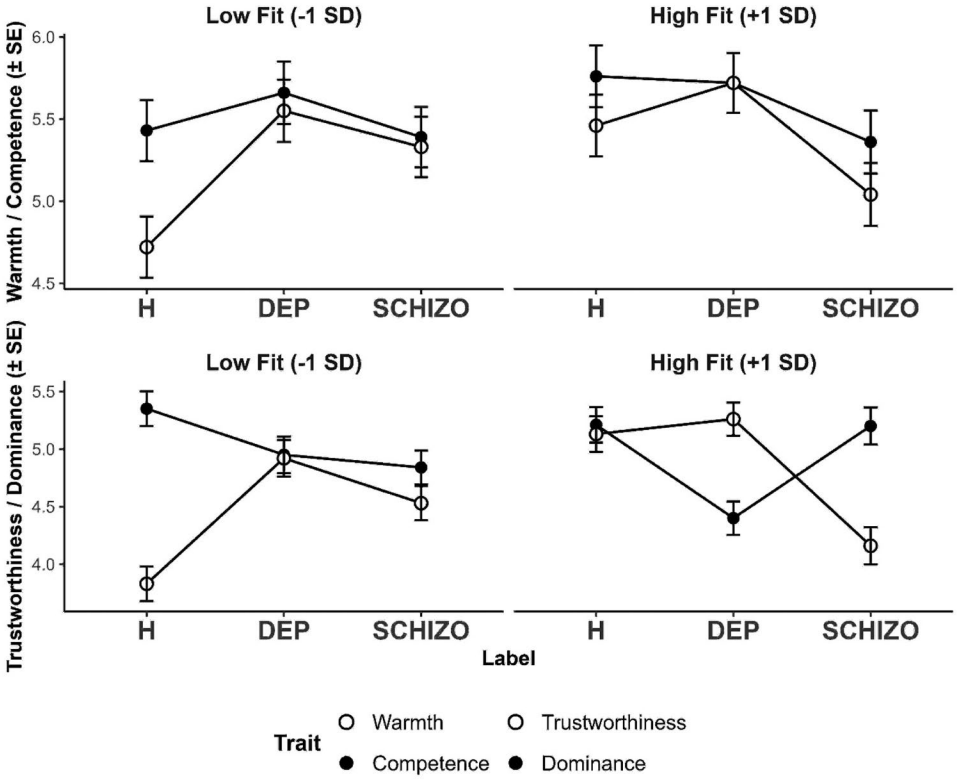

Figure 2. Mean trait ratings by diagnostic label (H-labeled vs Depression-labeled vs. Schizophrenia-labeled) and perceived face-label fit (*LPF* vs *HPF*) in Experiment 2.
Note: Points represent model-estimated means; error bars represent ±1 *SE*. *LPF* = low fit (−1 *SD*) and *HPF* = high fit (+1 *SD*). *DEP* = Depression; *SCHIZO* = Schizophrenia.

Table 2. Perceived fit-contingent associations among Warmth, Competence, Trustworthiness and Dominance (Experiment 2).

	Within models		Between models	
	Warmth—Competence	Trustworthiness—Dominance	Warmth—Trustworthiness	Competence—Dominance
General	β = .32	β = −.21	β = .56	β = .11
HPF	β = .34	β = −.22	β = .59	β = .12
LPF	β = .31	β = −.21	β = .53	β = .09

Note: Entries are conditional mixed-model slopes (β) evaluated at low (LPF; −1 *SD*), mean (General), and high (HPF; +1 *SD*) levels of perceived fit.

those labeled as depression (M = 4.93, SE = .13) and schizophrenia (M = 4.68, SE = .12).

The interpretation of these results being related to reliance or no reliance in the stereotype is clarified by separating the two-trait dimension (see Figure 2). For HPF schizophrenia labeled faces tended to receive lower trustworthiness ratings than H-labeled faces (d = −0.20) or depression labeled faces (d = −0.24), with these latter not differing from each other (d = 0.00), whereas dominance ratings were comparatively higher for H-labels and schizophrenia labels (which did not differ from each other, d = 0.00) than for depression (both *d's* = 0.18). For LPF faces, trustworthiness ratings were higher for both diagnostic labels than for the H-label (depression: d = 0.23; schizophrenia: d = 0.16), with ratings being lower to the schizophrenia than depression-labeled faces (d = −0.09), and dominance ratings tended to be highest for the H-label (depression: d = −0.09; schizophrenia: d = −0.12), with those latter not differing from each other (d = 0.00).

In short, stereotype-consistent differences (e.g., reduced trustworthiness for schizophrenia and reduced dominance for depression) emerged primarily when perceivers judged the face to fit the label (HPF).

Relationships between dimensions

As in Experiment 1, we examined relationships between trait ratings in general and dependent on level of perceived fit (see Table 2).

Results display in Table 2 closely mirror Table 1. Associations within the SCM-related pair (warmth-competence) were positive, whereas associations within the face-based pair (trustworthiness-dominance) were negative. Across pairs, warmth remained strongly coupled with trustworthiness, whereas competence-

dominance associations were comparatively weak and showed only modest variation across perceived fit.

Experiment 3

Experiment 3 aims to clarify Experiment 2 results and further investigate whether there are differences between the depression and schizophrenia labels related to each disease typically as a MI (Rosch, 1975; Rosch et al., 1976). For this we follow the procedures for assessing typicality outlined by Rosch (1975) and her collaborators (1976). Of most importance is to clarify if perceived fit with a specific label of schizophrenia or depression is less likely to clear moderate the reliance of stereotypes information.

Participants and design

A sample of 84 Portuguese students (88.1% female; *Mage* = 21.69, *SD* = 5.99), 13.1% of whom reported suffering from a MI, evaluated three sets of faces, each presented with a different label (no MI vs. depression vs. schizophrenia), and with a counterbalanced order (H-D-S; S-H-D; D-S-H).

Face stimuli

The selection of facial stimuli followed the same criteria used in previous studies.

Procedure

The procedure followed closely the previous studies, with the difference that, in addition, participants were asked to rate (at the beginning of the questionnaire) the level of typicality (see in detailed in the referred *OSF* link), i.e., how prototypical/good an exemplar each disorder (of the 16 presented) in the MI category is, using a 7-point scale (1—*Bad exemplar* to 7—*Very good exemplar*). Following the typicality ratings, participants completed the face-evaluation task using the same sequence as in the previous experiments. As in Experiment 2, labels explicitly referred to diagnostic categories and read either "*This person suffers from depression*", "*This person suffers from schizophrenia*" or "*This person does not suffer from any mental illness*", depending on condition. The exact wording of the labels was constant across trials and participants. For each face-label pairing, they first provided an initial judgment of perceived label-face fit—as in latter experiments, this was operationalized as participants' subjective judgment of the applicability or congruence of the diagnostic label to the individual depicted—followed by evaluations on the trait dimensions.

All instructions, questionnaire items, response scales, and task order used in this experiment are available in full in the *OSF* repository.

Results

Data analysis followed the procedures of the previous experiments with statistical details being presented in Supplementary Materials (S8-10).

Perceived stereotype applicability

Replicating previous results, the perceived fit ratings of each label-face pairing show high variability, ranged from 1 to 9, with means between 3.23 and 4.32, and standard deviations ranging from 2.55 to 2.92.

Warmth—competence

Result did not show evidence of more extreme rating being offered for *HPF* targets ($M = 5.37$, $SE = .14$) than *LPF* targets ($M = 5.29$, $SE = 14$).

Once more we find evidence of labels' impact on the extremity of evaluations being dependent upon perceived fit. For the HPF targets, when the label was H ($M = 5.51$, $SE = .15$) or depression ($M = 5.50$, $SE = .15$) ratings were higher than when the label was schizophrenia ($M = 5.09$, $SE = .16$). For the LPF targets, the pattern inverted, being those labeled H, evaluated less extremely ($M = 5.00$, $SE = .16$) than those labeled depression ($M = 5.50$, $SE = .16$) or schizophrenia (*LPF:* $M = 5.38$, $SE = .15$).

Figure 3 illustrates trait-specific patterns by diagnostic label across levels of perceived fit with similar patterns observed in Figure 2. For HPF targets the stereotype-consistent configuration emerged. Schizophrenia-labeled faces were evaluated less favorably on warmth than both depression-labeled ($d = 0.20$) and H-labeled faces ($d = 0.10$), and lower on competence than H-labeled faces ($d = 0.12$). Unlike Experiment 2, additional differentiation between H and depression labels also emerged under high fit, with depression-labeled faces rated warmer ($d = 0.09$) and H-labeled faces rated more competent ($d = 0.10$).

For LPF targets ratings changed. Consistently with Experiment 2, warmth ratings were lower for the H-labeled faces than both MI-labeled conditions (depression: $d = -0.20$; schizophrenia: $d = -0.18$), whereas competence differences were comparatively smaller and less differentiated across labels (depression: $d = -0.06$; schizophrenia: $d = -0.00$), with depression and schizophrenia labels not differing in both traits ($d = 0.00$).

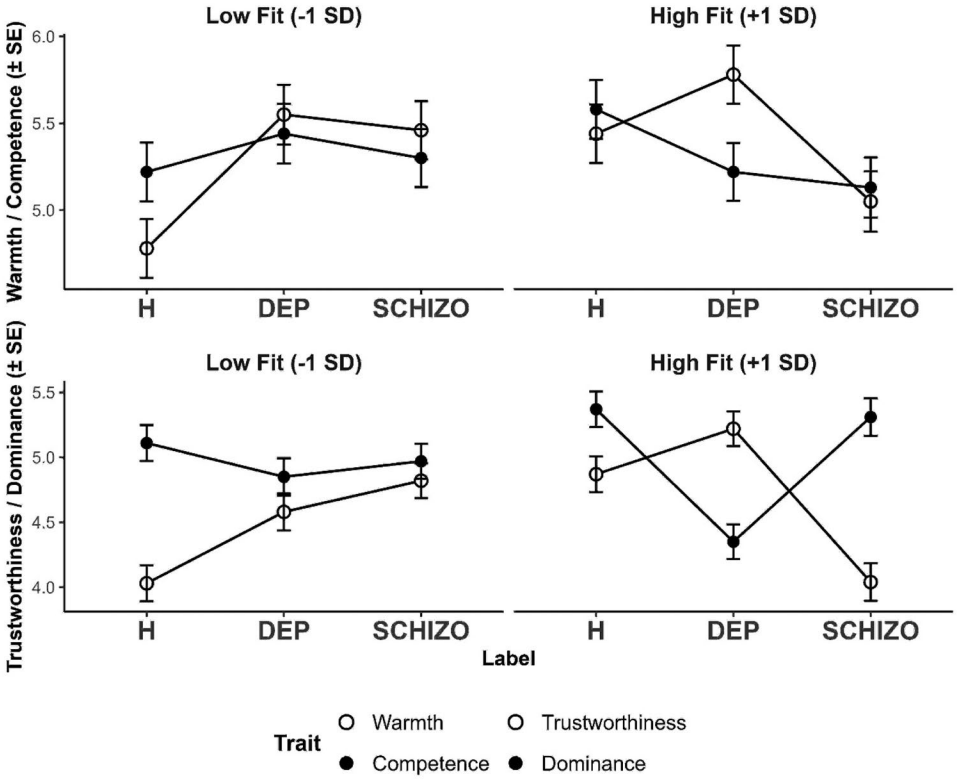

Figure 3. Mean trait ratings by diagnostic label (H-labeled vs Depression-labeled vs. Schizophrenia-labeled) and perceived face-label fit (*LPF* vs *HPF*) in Experiment 3.
Note: Points represent model-estimated means; error bars represent ±1 *SE*. *LPF* = low fit (−1 *SD*) and *HPF* = high fit (+1 *SD*). *DEP* = Depression; *SCHIZO* = Schizophrenia.

Trustworthiness—dominance

Once more perceived fit showed no clear simple effect on evaluations, but qualified labeling effect on extremity of ratings and on moderation of traits evaluation, indicating that stereotype-related differentiation was most apparent when perceived fit was high (HPF).

The moderation of label effects over extremity shows that for HPF faces ratings of these two traits were more extreme for faces labeled as H ($M = 5.12$, $SE = .11$) than those labeled as depression ($M = 4.79$, $SE = .11$) and schizophrenia ($M = 4.67$, $SE = .12$). The pattern changes for LPF faces, where faces labeled as H ($M = 4.57$, $SE = .11$) where rated less extreme than those labeled as depression ($M = 4.71$, $SE = .12$) and schizophrenia ($M = 4.90$, $SE = .11$).

Figure 3 illustrates the impact of perceived fit over stereotyping, showing evidence that for HPF targets contrary to LPF, a more stereotype-consistent configuration emerged. Schizophrenia-labeled faces were evaluated as less trustworthy than both H-labeled ($d = -0.22$) and depression-labeled faces ($d = -0.27$). Unlike Experiment 2, in this experiment evidence shows that depression-labeled faces were rated as more trustworthy than H-labeled faces ($d = 0.08$). Dominance ratings replicated Experiment 2 results, with depression-labeled faces evaluated as less dominant than both H-labeled ($d = 0.24$) and schizophrenia-labeled faces ($d = 0.22$), which did not differ from each other ($d = 0.00$). For LPF targets, ratings are almost inverted. Trustworthiness ratings differentiated labels in a graded manner: H-labeled faces were evaluated as less trustworthy than both depression-labeled ($d = -0.12$) and schizophrenia-labeled faces ($d = -0.19$), with schizophrenia-labeled faces also rated less trustworthy than depression-labeled faces ($d = -0.15$). In contrast, dominance ratings showed minimal differentiation between H and diagnostic labels (depression: $d = 0.06$; schizophrenia: $d = 0.00$), although depression and schizophrenia-labeled faces differed, with schizophrenia targets perceived as more dominant ($d = -0.18$).

Together, these results indicate that diagnostic labels shape face-based trait inferences in a fit-dependent manner. Across outcomes, schizophrenia tended to align more closely with the broader negative pattern observed for MI labels, whereas depression showed a more favorable profile, particularly on warmth and trustworthiness. Minor discrepancies between Experiments 2 and 3 suggest that depression-related

stereotypes are less stable and more context-dependent than those associated with schizophrenia.

Relationships between dimensions

As in previous experiments, we examined relationships between the four sets of trait ratings and their moderation by perceived fit.

Table 3 mirrors Experiments 1 and 2; warmth-competence slopes were positive and trustworthiness-dominance slopes were negative, with warmth strongly coupled with trustworthiness and competence-dominance remaining weak. Perceived fit-related variation was modest and primarily apparent for warmth-competence, consistent with prior Experiments.

Typicality

In this experiment, we established a further aim of examining if differences in the SCM profiles of two exemplars of the mental illness category, depression and schizophrenia, could be related to their perceived category typicality. Results showed this to be unlikely. Although typicality ratings for the two disorders were only moderately associated (r = .23), (suggesting a perceived overlap as members of the same category), the difference between ratings of typicality, schizophrenia being rated as slightly more typical ($M = 6.42$, $SE = 0.11$) than depression ($M = 6.20$, $SE = 0.14$), was and notably smaller ($d = 0.16$) than what would be implied by the differences observed in trait ratings. In addition, typicality showed little relationship with any of the trait ratings (rs < .18).

It is also informative that typicality ratings did not alter the fit-dependent label patterns reported above when included as a covariate in our analyses (see Supplement S10). Together, these results suggest that the differences observed between schizophrenia and depression do not simply reflect differences in how typical these conditions are perceived within the broader category of mental illness.

General discussion

This paper examined the role of perceived label-face fit in how MI labels influence trait inferences. In doing so, it challenges the assumption that labels inherently distort perception in a way that imposes perceived applicability, which would prevent testing our hypothesis. Across the three experiments, perceived applicability of each label showed sufficient variability, contrary to what would be expected if labels automatically altered perceptions to fit expectations. Nevertheless, if top-down reinterpretation of facial information drives perceived fit and, consequently, reliance on stereotypes, an important question for future research is why this process does not occur consistently across all trials.

Our main hypothesis was then to test if perceived label-face fit would increase top-down judgments of a face's features. Data from the three experiments support such assertion. When the target face is perceived to fit the labels, the labels of MI and schizophrenia consistently and as expected induced evaluations consistent with the stereotype content (see below). A pattern that is not detected in the evaluation of the faces that were not perceived to fit the label. This results conceptually replicate research documenting that the use of stereotypes may be constrain by the nature of the stimuli itself, in such that it does not fit expectations (Blair, 2002; .Fiske & Neuberg, 1990; Garcia-Marques et al., 2006; Kunda & Thagard, 1996) and may sustain individuals belief that they are attending to the details of the target and not simple relying on stereotypes.

A surprising finding is that when the label was perceived as not fitting the face, evaluations did not simply revert to neutral; instead, they often shifted in the opposite direction of the stereotype. Moreover, these evaluations did not align with those expected for healthy targets. This suggests that, in our experimental context, the experience of a mismatch did not trigger detailed processing (which might lead to neutrality or individuated correction) but rather led perceivers to respond against the label's expectations. In other words, the stereotype was activated but used as a comparison standard rather than as a basis for inference (Schwarz & Bles, 1992), or accessible judgments were overcorrected (Blair & Banaji, 1996), producing responses in the opposite direction.

Quinn et al. (2009) show that when people are aware a target belongs to a stigmatized group, they

Table 3. Perceived fit-contingent associations among Warmth, Competence, Trustworthiness and Dominance (Experiment 3).

	Within models		Between models	
	Warmth—Competence	Trustworthiness—Dominance	Warmth—Trustworthiness	Competence—Dominance
General	β = .39	β = −.17	β = .54	β = .10
HPF	β = .32	β = −.17	β = .57	β = .11
LPF	β = .46	β = −.16	β = .50	β = .09

Note: Entries are conditional mixed-model slopes (β) evaluated at low (LPF; −1 *SD*), mean (General), and high (HPF; +1 *SD*) levels of perceived fit.

engage in correction processes, adjusting judgments away from stereotypes, sometimes even reversing trait attributions. Similar findings come from Allan et al. (2025) in human-AI interactions, where counter-stereotypical traits reversed rather than eliminated bias, and from Shaw & Rubinstein (2025), showing highly diagnostic stereotype-contradicting information can invert implicit judgments. This suggests that a perceived mismatch may signal the stereotype's invalidity, prompting judgments in the opposite direction. Future research should investigate these mechanisms directly.

Stereotypes of MI

Our experiments offer relevant information for literature that addresses stereotype content. Our data generally replicates findings and extends evidence with regard face personality inferences (trustworthiness and dominance). Compared with a healthy label of MI and schizophrenia consistently reduced evaluations of warmth, competence, and trustworthiness, while increasing dominance. These results corroborate previous findings that general place MI in the low-competence, low-to-medium warmth quadrant of the stereotype content space (e.g., Allstadt Torras et al., 2023; Boysen et al., 2023; Fiske, 2012; Görzig et al., 2020; Görzig & Ryan, 2022; Sadler et al., 2012, 2015; Sönmez & Karaoğlu, 2023; Ryan, 2015).

For depression a perceived fit leads to less consistent evaluations across experiments 2 and 3. Nevertheless the label induces evaluation of higher warmth and trustworthiness and lower dominance (no clear impact over competence). As such, results documented differences between types of MI, with depression appearing to diverge from the broader MI stereotype. Schizophrenia maps more closely onto the broader MI profile, while depression yields a more ambivalent pattern, as previously suggested in the literature (e.g., Boysen et al., 2023; Sadler et al., 2012; Sönmez & Karaoğlu, 2023).

Our data adds to all this literature, by clarifying that if a difference occurs between how schizophrenia and depression map onto the general MI stereotype these differences cannot be explained by perceived typicality (at least as measured in the present studies). Future studies should clarify the consistency of these differences and address other possible explanations, such as perceived group heterogeneity (see da Silva et al., 2025a).

Here we assumed that how MI is mapped onto the facial trait space results from bottom-up facial cues that help perceivers distinguish between MI and mental health (Daros et al., 2016; Frowd et al., 2015; Scott et al., 2013; Ward & Scott, 2018). However, there are alternative hypotheses. Judgments can also emerge from personality structures individuals use to infer traits, and so through the perceived association between the two specific personality spaces. Consistent with previous findings (Oliveira et al., 2019), warmth and trustworthiness were positively associated across conditions. In general, prior work has documented systematic and complex relationships within personality space structures, with overlapping of trait spaces across interpersonal and group-based judgments (Koch et al., 2021). For instance, tradeoffs between agency or assertiveness and perceived competence or trustworthiness across different social targets (Hauke-Forman et al., 2021; Methner et al., 2020).

Our data also suggests the strengthen of the association between warmth and competence, traits typically considered weakly related, but not the association between trustworthiness and dominance. This may reflect distinct cognitive pathways across the two trait spaces. Warmth and competence are more malleable and subject to top-down influences such as stereotypes or contextual cues, whereas trustworthiness and dominance judgments are more anchored in facial morphology and automatic responses (Todorov et al., 2013).

Understanding top-down/bottom-up dynamics in face perception

Our results highlighted how top-down and bottom-up processes jointly shape impressions of individuals with MI. While labels can activate stereotypes, their influence depends on perceptual features of a face and the perceived label-face fit. Although it is the first time that this effect is anchored in perceptive features, results are consistent with the Continuum Model of impression formation (Fiske & Neuberg, 1990) and further convergent evidence (e.g. Craig & Bodenhausen, 2018).

One might argue that, rather than fit versus non-fit experiences supporting stereotype reliance, the observed dynamics reflect bottom-up facial processing actively changing stereotype content. Although our procedures do not rule out this possibility, we consider it unlikely. First, prior research suggests that stereotypes are resistant to change and are updated only slowly through repeated and broad representative counter-stereotypical experiences (Devine, 1989; Hilton & von Hippel, 1996; Weber & Crocker, 1983). Moreover, exemplary information has been shown to temporarily influence judgments, but not

representations (e.g., Garcia-Marques et al., 2006), with effects typically attributed to motivated correction at the judgment stage rather than to durable changes in stereotype content (Fiske & Neuberg, 1990; Gawronski & Bodenhausen, 2006).

This body of research supports interpreting our data as showing that bottom-up facial cues modulate the use of stereotypes in judgment, rather than alter stereotype representations themselves. It also helps explain why faces perceived as low in fit reduced, or even reversed, the bias typically promoted by stereotypes.

One avenue for future research is to better understand "perceived fit", contrasting different possibilities. Fit may reflect perceptual consistency with a memory template, it may be guided by previous knowledge which bias the percept itself, it may be inferred from the context, etc. In addition, although we can assume that the experience of a fit engage individuals in superficial processing and unfit activate a more individuated processing mode (e.g., Fiske et al., 1999; Garcia-Marques et al., 2016; Oliveira et al., 2022) it may be that fit influence participants' willingness to apply, reject or even oppose the stereotypic information available in memory. Future research should disentangle these factors by relying on social cognitive methods and measures, manipulating motivation, cognitive load, or prior knowledge (Fiske et al., 1999; Garcia-Marques et al., 2006; Kunda & Thagard, 1996).

Limitations and future directions

There are several limitations to the conclusion taken for this set of studies that deserve future research.

One limitation concerns the scope of the trait dimensions examined. The present research is framed around the dimensions of the Stereotype Content Model. However, over the past decade, research has moved beyond the warmth dimension, distinguishing instead between sociability and morality. This emerging perspective shows that morality is far more influential than sociability (and competence) in shaping impressions of individuals and groups, as well as related behaviors (see, e.g., Brambilla et al., 2021). Future research could extend the present paradigm by explicitly separating morality from sociability and by testing broader, multidimensional frameworks of stereotype content (Yzerbyt et al., 2025).

There is also a concern regarding the assessment of the most relevant variable in this study: the perceived applicability of the label to a face. Although some issues may arise from translation across languages, a more substantial limitation is that we do not provide clear evidence for the validity and reliability of this measure. Future studies conducted in English may benefit from using a more direct question and clearly defined scale anchors (e.g., ranging from no fit to complete fit).

An important boundary condition of our studies concerns the normative meaning of the superordinate label mental illness. As suggested by norm theory (Kahneman & Miller, 1986), perceivers may anchor such a broad category to different plausible subtypes, which can vary across individuals and contexts. Accordingly, the present findings should be interpreted as specific to the diagnostic labels examined here and should not be generalized to all mental illnesses. Depression and schizophrenia were selected because prior research suggests that they occupy different—and sometimes inconsistent—positions within the stereotype content space, allowing us to test whether fit-dependent stereotyping generalizes across diagnoses or varies systematically by disorder. Future research should therefore examine the specific information individuals retrieve when processing the label mental illness.

Finally, as is common in this area of research, the studies relied on psychology students as participants. Although frequently used in stigma research, psychology students are likely to have greater mental health literacy and sensitivity to stigma-related issues than the general population. This heightened awareness may influence how diagnostic labels are processed, for example by reducing stereotype endorsement or increasing motivated correction when labels are perceived as unjustified (Quinn et al., 2009). While prior work suggests that mental health professionals' attitudes and behaviors do not substantially differ from those of the general population (Lauber, 2008), psychology students may nonetheless constitute a distinct group in terms of mental health knowledge and normative concerns. Accordingly, future research should assess prior experience and expertise with MI, as familiarity may either amplify or attenuate reliance on stereotypical trait inferences (Garcia-Marques et al., 2016; Quinn et al., 2009).

Implications for reducing stigma

These findings suggest that stereotype activation is context-dependent: labels alone do not uniformly bias trait inferences. Interventions aiming to reduce stigma could focus on increasing awareness of label-face discrepancies and encouraging attention to individual variability rather than stereotype-consistent features. For example, training programs could emphasize that not all individuals with depression or schizophrenia

conform to stereotypical expectations, reducing biased evaluations in social and professional contexts (Angermeyer & Dietrich, 2006; Quinn et al., 2009).

Moreover, interventions targeting top-down knowledge alone may be insufficient. Effective stigma reduction should also address bottom-up perceptual processes, for instance through exposure to diverse individuals with MI to recalibrate automatic trait inferences. Understanding the conditions under which stereotypes are applied or inhibited can inform evidence-based anti-stigma programs across healthcare, workplace, and educational contexts (Ando et al., 2013; Fontesse et al., 2020).

In practical terms, these insights can be embedded at key decision points (e.g., screening and intake in clinical, educational, and workplace settings) through brief prompts that discourage treating facial appearance as diagnostic evidence and instead require alternative, individuating information. Training modules can also incorporate structured exercises in which trainees compare cases that vary in perceived label-face fit, followed by feedback emphasizing within-diagnosis heterogeneity. These components are feasible to implement within existing training formats and yield testable predictions about when labeling will most strongly bias person perception.

Notes

1. We use the terms *match*, *fit*, and *applicability* of a stereotype to a specific target, but it is important to note that each term is linked to different theoretical approaches discussed here.
2. The entire project, including the procedure, was approved by the Ethics Committee of Ispa - Instituto Universitário (Ethics Code: D-078-4-24) on April 02, 2024, and the procedures followed were in accordance with the Helsinki Declaration as revised in 2013.
3. Although no formal pre-registration was conducted, the experiments are part of a project submitted for a PhD grant to the FCT PhD program, which received approval from a panel of reviewers.
4. This design contrasts with more complex, multi-item or multi-dimensional scales often used in social psychology, which are intended to assess broader trait constructs of a smaller set of stimuli, involving the possibility of more reflective processing.
5. This wording is a translation from the Portuguese question, for which the dimension of the rating scale makes more sense.
6. Across our experiments, an average of one-fifth of the participants reported having experienced a mental illness themselves or knowing someone who has. This limits our ability to fully test familiarity as a potential moderator of our effects. However, suggesting that no, the analyses consistently showed a similar pattern when conducted without these participants.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work is funded with national funds from FCT—Fundação para a Ciência e Tecnologia, I.P., in the context of the project UID/04810/2020, DOI: 10.54499/UIDB/04810/2020 e 10.54499/UIDP/04810/2020".

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Data availability statement

The data, analysis and material that support the findings of this study are available in https://osf.io/qvg2z/?view_only=e3d6232dbc0f4529b64d4d2d709016a0.

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