# Reducing Public Stigma Towards Psychosis: A Conceptual Framework for Understanding the Effects of Social Contact Based Brief Video Interventions

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*Background and Hypothesis*: Public stigma reduces treatment-seeking and increases the duration of untreated psychosis among young people with psychosis. Social contact-based video interventions have been shown to be effective at reducing stigma; however, more research is needed regarding very brief interventions less than 2 minutes long, which are suitable for social media platforms and particularly relevant for young adults. We recently conducted three randomized control trials and demonstrated the efficacy of such videos to reduce stigma toward individuals with psychosis among young adults of the general public. However, it is unclear what elements contributed to the effectiveness of these very brief interventions. *Study Design*: The present article proposes a conceptual framework to discern what elements contributed to the efficacy of these interventions. We first review the existing literature describing social contact-based interventions and how they impact the cognitions, emotions, and behaviors of participants. *Study Results*: Then, using this lens, we suggest an alternate observation of the data from our studies by examining changes in stigmatizing views across time, rather than utilizing mean scores and conceptualizing how key characteristics of our interventions helped reduce stigma. We also highlight future research directions, including the need to look at mediators and moderators of change and the need to examine behavioral outcomes. *Study Conclusions*: By hypothesizing how these interventions are proposed to work, this framework is intended to provide a roadmap for further development of brief video-based interventions to reduce stigma.

*Key words:* stigma/young adults/schizophrenia/intervention/FEP/social contact

Schizophrenia affects approximately 20 million people worldwide with a typical age of onset of 15-35.[1,2] More than 30% of these individuals do not receive treatment, due to barriers such as stigma and shame, a preference for self-reliance, and poor mental health literacy.[3,4] Early access to care is important as it is associated with a shorter duration of untreated psychosis and better short- and long-term outcomes.[5] Public stigma, which includes negative attitudes and beliefs that lead people of the general public to avoid, fear, or reject individuals with mental illness, can contribute to social isolation, loneliness, and fear among individuals with psychosis[6,7] and may play a role in treatment seeking.[8]

Alarmingly, there is evidence that public stigma is increasing in the United States (US). A recent study examining changes in mental illness stigma among US residents from 1996 to 2018 found an approximately 10% increase in beliefs that individuals with schizophrenia are dangerous.[9] This study also showed increased support for using coerced treatments, possibly due to media linking mental illness with crime and mass shootings. Yanos, DeLuca, and Gonzales[10] speculated that gun rights advocacy organizations seeking to direct public outrage about mass shootings away from the widespread availability of guns in the US, had succeeded in mounting a national "pro-stigma" campaign blaming people with mental illness and the mental health system. Regardless of the explanation, the trends are concerning, suggesting that there is a need for organized efforts to reduce stigma in the US, specifically toward people with schizophrenia. Schizophrenia is perceived as more dangerous and unpredictable than other mental disorders[9] and was found to be perceived as the most "disruptive" of 93 potentially stigmatizing human statuses (including being an injecting drug user and having a sex offense history).[11]

Furthermore, there is a need for stigma reduction interventions targeted toward young adults as this group overlaps with the age of onset of psychosis and is a possible peer group of individuals with psychosis.

Although intuitive approaches to addressing stigma involve educating the public about mental illness, or public service announcements in which celebrities disclose histories of mental illness, Corrigan[12] has noted that such anti-stigma efforts are generally ineffective and need to take care to avoid unintended consequences that might even increase stigma. Based on research evidence, Corrigan[12] recommended that anti-stigma efforts be contact-based, involving interpersonal contact with representatives of a stigmatized group sharing their personal stories. Further, he argued that the most effective contact-based interventions are "targeted" (focusing on specific communities or subgroups in which stigma is a particular concern), "local" (taking into account local interests and factors and providing contact with members of the local community), and "credible" (providing stories that highlight recovery, but in a manner that is plausible to most community members). Prior research has also suggested that social contact-based interventions are most effective.[13–15]

Although historically conducted in-person in classrooms or community centers, these interventions have also been shown to have similar efficacy when presented in video format, which is potentially less expensive and easier to disseminate.[14,16] However, while most video interventions have lasted 7–60 min, younger audiences may prefer briefer content, similar to what they may encounter on social media[14,17] (eg, 60 s videos on TikTok or Instagram). Given the widespread use of social media among younger audiences, brief video-based interventions might allow contact to be both "targeted" and "local." To our knowledge, no prior studies have examined interventions suitable for social media platforms that are under 2 min long.

To address these gaps, we conducted a series of randomized controlled trials (RCTs), which demonstrated the efficacy of brief social contact-based video interventions in reducing public stigma toward individuals with psychosis among young adults ages 18 to 35.[18–20] In the first study, 1203 young adults were randomized to video, written vignette, or no intervention conditions.[18] In a brief 90-s video, a young woman with schizophrenia humanized her illness through her emotional description of living a meaningful and productive life. The video group had lower rates of stigma than the written vignette and control groups. In a randomized controlled replication study, 1055 young adults were randomly assigned to the same video intervention, a written vignette, and control condition.[19] The video intervention reduced stigma at post-intervention and 30-day follow-up, more than vignette and control groups, despite a small rebound. Lastly, we randomized 1993 young adults into one of four brief video conditions with varying presenters (Black/White female, Black/White male) or a non-intervention control condition.[20] A link to one of the videos is available in Appendix 1. Results showed a greater reduction in video intervention groups than in control at post-intervention and 30-day follow-up, but no differences between video groups. Matching participant and presenter race and gender had no impact. In all of the studies, we used the same 19-item assessment to measure public stigma across five domains: social distance, stereotyping, separateness, social restriction, and perceived recovery.

Although these interventions and other social contact video-based interventions have been shown to be effective, there is a lack of information on *how* exactly they work and what elements are necessary to induce change, especially among young adults.[14,21] This is especially true for very brief video-based interventions under 2 min in length where special care has to be taken to select appropriate content and information that must be included in these videos. The present article proposes a conceptual framework to discern what elements contributed to the efficacy of the brief video-based stigma reduction interventions listed above in our prior studies among youth. We first review the existing literature describing social contact-based interventions and how they impact the cognitions, emotions, and behaviors of participants. Then, we conceptualize how the key characteristics of these interventions helped reduce stigma. We conclude by highlighting future research directions.

## General Factors Contributing to Effective Stigma Reduction

As noted, prior research suggests that stigma reduction interventions should be targeted toward specific groups.[22] Examples of targeted groups include a specific age range (such as people under 30), landlords, employers, and healthcare providers, rather than the population as a whole to address specific beliefs or behaviors. Additionally, the intergroup contact hypothesis suggests that optimal contact conditions such as equal status, cooperation, common goals, and institutional support can reduce stigma by challenging preconceived notions about the group and reduce an "us" vs "them" mentality, in which members of an outgroup are seen as somehow fundamentally different or less than human.[23–26] Optimal contact conditions require that there not be a definitive power-differential between the groups, such as teacher-student or guard-inmate. However, Allport's[23] conditions are not crucial for intergroup contact to achieve positive effects. In particular, Pettigrew and Tropp[26] found that samples with no claim to these key conditions still show significant relationships between contact and prejudice. Thus, Allport's conditions may not be necessary for producing positive contact effects. Perhaps, these conditions

act as facilitating factors that enhance the tendency for positive contact effects to emerge.

Since a diagnosis of schizophrenia can be a concealable stigmatized identity that is not immediately made known to others, the presenter should seem typical of the outgroup but atypical enough to counter preconceived ideas.[21,27] This suggests that efforts geared toward youth need to feature youth who are both "relatable" and believably "unique." It is crucial to include individuals with psychosis as partners in the intervention and study design process to ensure that their voices are heard.[22,28]

## Evidence for Impact on Cognitive, Emotional, and Behavioral Components of Stigma

Broadly, stigma has been conceptualized as consisting of cognitions, emotions, and behaviors.[29] Stereotypes (ie, cognitions) are cued by "marks," or labels, such as disheveled appearance, behaviors such as talking to oneself, or knowledge of someone's diagnosis. Stigma can also include beliefs that the individual is dangerous and unpredictable, responsible for their illness, or incompetent and unable to be successful in work or school.[29] These stereotypes result in an "us" vs "them" mentality and can lead to emotional responses (eg, fear or anger) and decreased helping behavior.[21,30]

As described above, prior research suggests that contact with a person with schizophrenia who disconfirms stereotypes is the most effective in reducing stigma.[31] It leads to reduced intergroup anxiety and increased empathy and identification with the presenter.[21,26] Considering that stigma consists of cognitive, emotional, and behavioral elements, contact-based interventions should aim to target these domains. In the following sections, we will examine each component of stigma, how contact-based interventions can affect these domains, and how these elements were targeted in our studies.

In our prior studies, we solely looked at changes in mean stigma scores in these domains over time. To have a better understanding of a possible change in cognition, emotions, or behaviors, we suggest a different observation of the data. We combined the video groups participants ($n = 1945$) from the previous studies[19,20] (see Table 1 for demographic information) and examined changes from baseline to post-intervention and 30-day follow-up among participants who hold a predominant stigmatizing perception, (table 2). Due to the five domains and 19 stigma items we used Bonferroni correction and set the significance at .001. For example, 64% of the 428 participants who disagreed that a person with schizophrenia should make decisions about their own treatment changed their minds immediately following the brief video. A similar change was found between baseline and 30-day follow-up. Significant changes were found across all five stigma domains. Cohen's d effect sizes ranged from 0.44 to 0.81

**Table 1.** Demographics

| Items | Total, $N = 1945$ | |
|---|---|---|
| | Mean | SD |
| Age | 26.9 | 4.1 |
| | $N$ | % |
| Gender female | 1374 | 54 |
| Hispanic | 172 | 9 |
| Race | | |
| Asian | 34 | 2 |
| African American/Black | 829 | 43 |
| Native American | 5 | 0 |
| White | 1060 | 54 |
| Other | 17 | 1 |
| Familiarity with a person with SMI | 811 | 42 |

for baseline-post changes and 0.32 to 0.63 for baseline-follow-up changes. This suggests an overall shift in perception among those participants. Note that participants from our first study[18] were not included in this secondary analysis due to a lack of post-intervention and 30-day follow-up assessments.

### Cognition

The most common thoughts or stereotypes that occur among the general public in response to psychosis are that the individual is dangerous and unpredictable, responsible for their illness, or incompetent and unable to be successful in work or school.[22] Cognition can broadly be divided into associative and rule-based processes.[32] Associative processes are quick and automatic affective reactions that do not require much conscious effort, while rule-based processes are delayed and involve more deliberate thinking based on information provided.[32] For example, an associative process may involve equating the label schizophrenia with dangerous, while a rule-based process may involve reflection on the appropriateness of this associative response and consideration of the pros and cons of further interaction with someone who has schizophrenia.[32]

When evaluating the effectiveness of stigma programs it is important to distinguish between these two processes as they require different measurement techniques.[32] Associative processes can be measured using implicit measures, such as the Implicit Association Test[33,34] or affective priming measures[35] (see Fazio & Olson[36] for a more detailed review on implicit measures). Rule-based processes can be measured through explicit measures, such as self-report. Most prior studies have focused solely on rule-based processes, utilizing self-report measures that are subject to social desirability.[21,37] Social desirability involves the tendency for people to say what they think conforms to cultural norms rather than their actual belief.[22] Most prior studies have neglected to measure associative processes.[21,37]

**Table 2.** Level of Stigmatizing Perceptions at Baseline, Post-Intervention, and 30-Day Follow-Up, and the Percentage of Participants Changing their Mind Following the Intervention ($n = 1945$).

| | Stigmatizing Perceptions Toward Individuals with Psychosis | | | | | | Changes from Stigmatizing to Non-Stigmatizing [a] | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Baseline $n = 1,945$ | | Post $n = 1,851$ | | 30-day FU $n = 1341$ | | Baseline to Post | | Baseline to FU | |
| Items | N | % | n | % | n | % | % | $X^2$ | % | $X^2$ |
| *Social distance*: would you be willing to… | | | | | | | | | | |
| 1 …have someone with schizophrenia as a neighbor? | 466 | 24 | 228 | 12 | 216 | 16 | **50** | 915.3 | **33** | 939.6 |
| 2 …be close friends with someone with schizophrenia? | 489 | 25 | 217 | 12 | 222 | 17 | **52** | 916.1 | **32** | 906.0 |
| 3 …have a person with schizophrenia working closely with you on a job? | 589 | 30 | 266 | 14 | 227 | 17 | **53** | 731.1 | **43** | 803.8 |
| 4 …allow a child of yours to date a person with schizophrenia? | 875 | 45 | 515 | 28 | 455 | 33 | **38** | 193.6 | **27** | 247.2 |
| 5 …allow a child of yours to marry a person with schizophrenia? | 881 | 45 | 571 | 31 | 458 | 34 | **31** | 148.21 | **24** | 240.5 |
| 6 …allow a child of yours to have a baby with a person with schizophrenia? | 938 | 48 | 615 | 33 | 531 | 40 | **31** | 94.3 | **17** | 146.7 |
| *Stereotyping*: How able is a person with schizophrenia to… | | | | | | | | | | |
| 7 …make his own decisions about the treatment he should receive? | 428 | 22 | 141 | 8 | 113 | 8 | **64** | 1,140.3 | **64** | 1,207.6 |
| 8 …make his/her own decisions about managing his own money? | 438 | 23 | 147 | 8 | 126 | 9 | **65** | 1,116.6 | **61** | 1,166.2 |
| How likely is it that a person with schizophrenia would… | | | | | | | | | | |
| 9 …do something violent towards other people? | 1,082 | 56 | 729 | 39 | 490 | 37 | **30** | 11.1 | **34** | 102.3 |
| 10 …do something violent towards himself? | 1,408 | 72 | 993 | 54 | 739 | 55 | **25** | 135.3 | **24** | 31.7 |
| *Separateness* | | | | | | | | | | |
| 11 When you think of a person with schizophrenia, how different do you think he is from other people? | 1,160 | 60 | 829 | 45 | 649 | 48 | 25 | 1.14 | **20** | 12.7 |
| 12 Although a person with schizophrenia may seem just like everyone else, he is actually different in important ways | 1,325 | 68 | 1,115 | 60 | 809 | 60 | **12** | 140.7 | **12** | 24.7 |
| 13 Someone with arthritis has just one thing wrong with them, but a person with schizophrenia is very different from other people | 950 | 49 | 793 | 43 | 553 | 41 | **12** | 22.6 | **16** | 125.6 |
| 14 Although he may be like other people in many ways, a person with schizophrenia is fundamentally different from other people | 1200 | 62 | 1008 | 54 | 762 | 57 | **13** | 39.2 | 9 | 0.17 |
| *Social restriction*: a person with schizophrenia… | | | | | | | | | | |
| 15 …could be trusted to babysit small children | 1203 | 62 | 845 | 46 | 655 | 49 | 26 | 6.6 | 21 | 5.3 |
| 16 …shouldn't get married- that is, he should stay single | 348 | 18 | 286 | 15 | 143 | 11 | **17** | 911.4 | **39** | 1,213.4 |
| 17 …shouldn't have children of his own- that is, he should remain childless | 555 | 29 | 405 | 22 | 295 | 22 | **24** | 539.4 | **24** | 710.3 |
| *Recovery assessment scale*: I believe that a person with schizophrenia… | | | | | | | | | | |
| 18 …has a plan for how to stay well | 458 | 24 | 225 | 12 | 190 | 14 | **50** | 928.8 | **42** | 1,001.6 |
| 19 …can meet his current personal goals | 276 | 14 | 166 | 9 | 126 | 9 | **36** | 1,229.4 | **36** | 1,324.7 |

*Note*:
[a] Higher percentage indicates higher improvement in stigmatizing attitudes; items 9, 10, 15, 18, 19 are reverse-scored; bold indicates significance at $P < .001$ (McNemar's test). Cohen's $d$ effect sizes ranged from 0.44 to 0.81 for baseline-post changes, and 0.32 to 0.63 for baseline-F/U changes.

As also noted above, "credible" contact-based interventions, in which stories of hope and recovery are balanced with discussions of struggles and symptoms, are considered ideal.[12] Prior research has suggested that contact following the principle of moderately disconfirming stereotypes is more effective in reducing stigma than no disconfirmation and trended towards better effects than highly disconfirming conditions.[31] For example, on the one hand, contact with someone who is exhibiting acute psychosis symptoms and acting in an aggressive manner would not be expected to reduce stigmatizing attitudes or behavior. This is referred to as contact with little or no disconfirmation of prevailing stereotypes and videos like this solely mention symptoms and the negative impact of the illness on the person's life.[31]

On the other hand, high disconfirmation videos which overly focus on the person's accomplishments, while only briefly mentioning symptoms or a diagnosis, would also not be expected to be maximally effective. Similarly, interactions with celebrities with mental illness may not reduce stigma in a significant way because these individuals may be viewed as extreme exceptions to the rule (ie, high disconfirmation). Additionally, researchers in other areas such as addiction have suggested the need to use "person-first" language, and emphasize solutions and effectiveness of treatments rather than framing mental illness as

on par with chronic physical diseases.[38] They also stressed the need to use sympathetic narratives with careful attention paid to intersectional identities (eg, socioeconomic status and presence of mental illness).

We developed our studies following the principle of moderately disconfirming stereotypes.[18–20] One notable strength of our studies included creating targeted interventions towards young people that are not solely college students and utilizing presenters who were also young adults. The videos provided the opportunity for participants to virtually come in contact with same-aged peers, of equal status, who shared their stories about their recovery process, daily struggles, and engagement in relatable activities such as being in school or dating. This can disarm participants and potentially challenge their notions about people diagnosed with schizophrenia and lessen the "us" vs "them" mentality since the individuals in the videos could have been a classmate, friend, or family member. Our studies primarily measured rule-based processes as well by asking participants about explicit cognitions regarding how different individuals with psychosis are from other people (Separateness) and their abilities to make decisions about treatment or finances and behave in a dangerous manner (Stereotyping), get married or have children (Social Restriction), or recover (Recovery Assessment Scale).

Regarding cognition-related statements, we found changes in stereotyping, separateness, social restriction, and recovery domains. Some elements in our videos that could have contributed to changes in cognitions in these areas include statements regarding engaging in work or school and what their recovery process looked like: "I am in school full-time," "They helped me get a job," "I've been with my boyfriend for three years now," "It's not something that's impossible to live with," "And then slowly, but surely I started putting the pieces together and my recovery began". Following the principle of moderately disconfirming stereotypes, these recovery themes were balanced with daily struggles, such as "every day is a battle," "every day I experience auditory and visual hallucinations," "Things aren't going to be easier, they're going to be tough but you're going to get better," and reports of symptoms that were present at the beginning of illness "I went four days without sleeping," "While shopping I was having very vivid visual and auditory hallucinations." Presenting both of these themes provided participants with the opportunity to challenge their preconceived notions about psychosis, while also confirming some of their prior beliefs. Although associative processes were not directly measured, we hypothesize that these elements may have contributed to changes in this domain; however, this needs to be further studied.

*Emotions*

Emotional processes that can be targeted by contact-based stigma reduction programs include intergroup anxiety and empathy through identification with the presenter.[21,26] Contact-based interventions provide the opportunity to engage in intergroup contact with an outgroup member in the hopes that this will reduce anxiety or fear.[24] A recent study by Maunder et al[24] tested the effect of an intergroup electronic chat contact intervention on stigma reduction against individuals with schizophrenia and examined the mediating role of fear, anger, and pity. Compared to the intragroup contact and control condition, intergroup e-contact reduced fear, anger, and stereotyping toward people with schizophrenia and fear and anger were significant mediators of the intervention's effect on the desire for social distance, but pity was not. Other studies have shown similar findings regarding the mediating role of emotions. In West et al[39] contact with a person with schizophrenia improved attitudes and decreased avoidance due to reduced fear. In another study, imagining contact with a person with schizophrenia decreased stereotypes and increased intentions for future contact via reduced anxiety.[40] Maunder et al[24] note that it is unclear whether interventions impact emotions or cognitions first; however this relationship is likely to be cyclical and that the role of intergroup contact vs levels of disconfirming stereotypes should be examined further.

Empathy is also another important emotion to consider as it involves seeing the other person as a fellow human and taking their perspective.[41] Anti-stigma interventions that provide opportunities for contact with "local" representatives who can be seen as "one of us" may be most likely to be effective in fostering empathy. Tippin & Maranzan[42] suggest that empathy can be situational (present emotional response) or dispositional (a general tendency or trait) and those emotional responses can be further divided into experiencing distress from hearing about someone's experience or feeling empathic concern for the other person. If the individual's group membership is contributing to their difficulties, empathy for the presenter may generalize to the group as a whole, which in turn may increase positive beliefs.[41] In a recent study, Tippin & Maranzan[42] showed the efficacy of a photovoice-based video intervention in reducing fear and anger towards people with mental illness, perceptions of dangerousness, and desire for social distancing in 303 undergraduate students. Empathic concern was found to mediate the relationship between the video and stigma reduction.

Although not directly measured in our studies,[19,20] 30% of the 1082 participants who agreed that people with schizophrenia are violent changed their minds immediately following the brief video, suggesting that participants may have had a reduction in fear regarding individuals with schizophrenia. We hypothesize that empathy with the presenter and emotional engagement could have contributed to reductions in these areas and the desire for social distance. Some elements in our videos that could have contributed to this include having a presenter with

lived experience of psychosis who shows vulnerability and fosters audience empathy by revealing information about past and current symptoms and personal struggles that are applicable to all individuals regardless of whether they have psychosis: "I was just recovering from the death of my dad," "People who have been in your life for so many years just turn their backs on you. It took me a lot of years to get over the pain of losing all those friends." These types of elements may also be particularly "relatable" to many young people and therefore increase the "local" aspect of such interventions.

The video presenters also discussed their need to be seen as fellow humans worthy of dignity and respect: "I am just another person," "One of the best things I've learned about myself is that you're more than your diagnosis, you're a person who still has dreams." They also expressed a desire to connect with others and play a meaningful role in society: "When I was going through my own recovery I feel like if I had somebody that said 'me too' that would have been really powerful." Including these elements likely contributed to audience empathy and emotional connection and reductions in fear and anger. However, future studies should directly measure emotional engagement with the video presenter as a possible moderator to stigma reduction.

*Behavior*

Overall, there has been much less emphasis on behavioral outcomes of anti-stigma interventions with most only measuring behavioral intentions, such as willingness to interact with someone with mental illness in the future, or how much money they are willing to donate to mental health advocacy groups.[21] Large-scale anti-stigma campaigns have demonstrated impact on intended social distance toward people with mental illness,[43] but a limitation of measures that focus solely on self-report is that they might be influenced by social desirability. One method that has been used to measure behaviors includes behavioral observation, which involves following a research participant and counting how often a behavior occurs; however, this can be costly and may bias participant behavior if they are aware of the observation.[22,44] Other methods include examining archival data (eg, how many people with schizophrenia were hired or interviewed during a specific time period), utilizing videotaped observations or role plays, or utilizing confederates (eg, an actor would contact employers and reveal their schizophrenia diagnosis during the interview).[22]

There is a need to clearly define what types of behaviors need to be measured and what signifies appropriate, non-stigmatizing ways of interacting with someone with schizophrenia.[22] Four common types of discriminating behaviors include withholding help, avoidance, segregation, and coercion.[45] There should also be more of an emphasis on increasing positive behaviors rather than

decreasing negative ones.[22] Possible behaviors to measure in young people include providing interpersonal (, friendship) or instrumental support (eg. covering a co-worker's shift or taking notes for someone in class); challenging discriminating behaviors or prejudicial attitudes perpetuated by co-workers, fellow students or family members against people with schizophrenia; increasing interviews and hiring decisions, if the young person is involved in a managerial position; volunteering for mental health organizations or posting supportive messages for individuals with schizophrenia on social media; or willingness to sit next to a person with psychosis. More subtle stigmatizing behaviors (known as "microaggressions"), such as invalidating or patronizing statements might also be important targets as research indicates that they are prevalent and impactful.[46,47]

Similar to prior studies, our studies[18–20] did not measure overt behaviors; however, we did measure behavioral intentions, such as being willing to have someone with schizophrenia as a neighbor, close friend, or coworker, or allowing a child to be in an intimate relationship with someone with schizophrenia (intended social distance). Table 2 suggests that following the video interventions, 50% of the 466 participants who disagreed to be a neighbor to a person with schizophrenia changed their minds following the brief video. Elements that could have impacted behavioral intentions include reduced fear due to seeing a presenter who is similar age to participants and who is engaging in similar prosocial activities, despite still experiencing daily struggles associated with psychosis. Additionally, changes in cognitions and emotions noted above may have influenced behavior intentions.

Measuring the impact of the interventions on actual behavior requires follow-up studies that specifically measure this area. Example follow-up studies could include having participants engage in role plays or simulated scenarios where they have to engage with individuals with psychosis or challenge stigmatizing behaviors they observe in others. Another example can be utilizing booster videos aimed at changing behaviors, similar to commercials in the marketing world that are repeatedly presented to change viewer behavior. Videos could also include specific behaviors that may be helpful for individuals with psychosis, such as "I really enjoy it when people are less judgmental in their language, because it can be very dehumanizing even if people say you're acting crazy, it means more than you might realize to certain people."

**Next Steps to Address Gaps in the Literature**

Future studies should continue to examine what factors contribute to public stigma reduction and be tailored to address cognitions, emotions, or behaviors. A meta-analytic review looking at the impact of mental illness-related stigma reduction interventions broadly found significant intervention effects persisting at follow-up

for cognitive beliefs and behavioral intentions, but not for affective responses.[37] Only three studies examined mediators of change. This suggests a need to look at mediators and moderators of change such as emotions, empathy with the presenter, emotional engagement, and memorability of the videos. The empathic concern could be measured using the six-item Self-Reported Empathy Scale[42,48] and/or open-ended questions such as those utilized by Clinton & Pollini.[49] Maunder et al[24] suggest that it is important to differentiate between different types of emotions, like fear vs anger, and include "positive" emotions such as pity rather than looking at emotional reactivity as a unitary construct. To measure emotional response, the Attribution Questionnaire may be utilized to determine attributions of responsibility and fear and anger towards people with mental illness[42,50,51] or the Corrigan et al[52] 10-item Emotional Response Scale could be used to measure fear, anger, and pity.[24] A possible 3-item measure of emotional engagement was created by de Vreede et al[53]

In addition, there is an overreliance on self-report measures which increases the possibility that participants are responding in a socially desirable way and may only be capturing rule-based processes of cognition.[21,22] Studies should include measures of associative cognitive processes such as the Implicit Association Test[34] or affective priming.[54] A possible measure of social desirability that can be utilized as a control includes the 13-item Marlowe-Crowne Social Desirability scale.[55] Another option includes error choice measures which appear to be multiple choice knowledge questions but actually measure stigma.[22]

Another important area to study concerns the perceptions of stigma among youth with psychosis themselves. Community stigma is believed to lead to a "chain-reaction" which leads people diagnosed with mental illness to avoid seeking help, internalize negative stereotypes, and diminish community participation (including employment and social relationships).[56] Ultimately, the goal of reducing stigma is to improve these outcomes, so it is important for any anti-stigma efforts to demonstrate an impact on perceptions of stigma and the internalization of negative stereotypes among youth with psychosis themselves. This might be challenging to study, but if interventions were to target a specific community (eg, a small city) for an extended period (for example, one year), it might be possible to survey youth with psychosis about their perceptions of stigma before and after the implementation of such an intervention to determine if anti-stigma initiatives are impacting their perceptions of stigma.

Lastly, there is a pressing need to develop new measurements and experimental paradigms of behavioral outcomes, as most studies typically only examine behavioral intentions. Possible domains for measurement include interpersonal and instrumental support, advocacy, hiring practices, and in-vivo treatment of individuals with psychosis. In addition, rather than having participants assume what behaviors may be helpful to individuals with psychosis, it may be helpful for videos to include messages of concrete steps participants can take to assist individuals with psychosis that they encounter (eg including ways they can be a supportive co-worker or friend) or not behave in a stigmatizing manner.

## Supplementary Material

Supplementary material is available at https://academic.oup.com/schizophreniabulletin/.

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## Data availability Statement

There is no ethical approval for data sharing.

## References

1. James SL, Abate D, Abate KH, *et al*. Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. *The Lancet*. 2018;392(10159):1789–1858. doi:10.1016/S0140-6736(18)32279-7.

2. Kessler RC, Amminger GP, Aguilar-Gaxiola S, Alonso J, Lee S, Ustun B. Age of onset of mental disorders: a review of recent literature. *Curr Opin Psychiat*. 2007;20(4):359–364. doi:10.1097/YCO.0b013e32816ebc8c.

3. Kohn R, Saxena S, Levav I, Saraceno B. The treatment gap in mental health care. *Bull World Health Organ*. 2004;14.

4. Gulliver A, Griffiths KM, Christensen H. Perceived barriers and facilitators to mental health help-seeking in young people: a systematic review. *BMC Psychiatr*. 2010;10(1):113. doi:10.1186/1471-244X-10-113.

5. Correll CU, Galling B, Pawar A, *et al*. Comparison of early intervention services vs treatment as usual for early-phase psychosis: a systematic review, meta-analysis, and meta-regression. *JAMA Psychiatr*. 2018;75(6):555–565. doi:10.1001/jamapsychiatry.2018.0623.

6. Chernomas WM, Clarke DE, Chisholm FA. Perspectives of women living with schizophrenia. *PS*. 2000;51(12):1517–1521. doi:10.1176/appi.ps.51.12.1517.

7. Manuel JI, Hinterland K, Conover S, Herman DB. "I hope i can make it out there": perceptions of women with severe mental illness on the transition from hospital to community. *Community Ment Health J*. 2012;48(3):302–308. doi:10.1007/s10597-011-9442-5.

8. Parcesepe AM, Cabassa LJ. Public stigma of mental illness in the United States: a systematic literature review. *Adm*

*Policy Ment Health.* 2013;40(5):384–399. doi:10.1007/s10488-012-0430-z.

9. Pescosolido BA, Manago B, Monahan J. Evolving public views on the likelihood of violence from people with mental illness: stigma and its consequences. *Health Affairs.* 2019;38(10):1735–1743. doi:10.1377/hlthaff.2019.00702.

10. Yanos PT, DeLuca JS, Gonzales L. The United States has a national prostigma campaign: It needs a national, evidence-based antistigma campaign to counter it. *Stigma Health.* 2020;5(4):497–498. doi:10.1037/sah0000223.

11. Pachankis JE, Hatzenbuehler ML, Wang K, *et al*. The burden of stigma on health and well-being: a taxonomy of conceal-ment, course, disruptiveness, aesthetics, origin, and peril across 93 stigmas. *Pers Soc Psychol Bull.* 2018;44(4):451–474. doi:10.1177/0146167217741313.

12. Corrigan PW. *The Stigma Effect: Unintended Consequences of Mental Health Campaigns*. Oxford University Press; 2018.

13. Corrigan PW, Michaels PJ, Vega E, *et al*. Key ingredients to contact-based stigma change: a cross-validation. *Psychiatr Rehabil J.* 2014;37(1):62–64. doi:10.1037/prj0000038.

14. Morgan AJ, Reavley NJ, Ross A, Too LS, Jorm AF. Interventions to reduce stigma towards people with severe mental illness: systematic review and meta-analysis. *J Psychiatr Res.* 2018;103:120–133. doi:10.1016/j.jpsychires.2018.05.017.

15. Thornicroft G, Mehta N, Clement S, *et al*. Evidence for ef-fective interventions to reduce mental-health-related stigma and discrimination. *The Lancet.* 2016;387(10023):1123–1132. doi:10.1016/S0140-6736(15)00298-6.

16. Janoušková M, Tušková E, Weissová A, *et al*. Can video interventions be used to effectively destigmatize mental illness among young people? A systematic review. *Eur Psychiatr.* 2017;41(1):1–9. doi:10.1016/j.eurpsy.2016.09.008.

17. Tsoi O, Chan S, Chui A, *et al*. Effect of brief social con-tact video compared with expert information video in changing knowledge and attitude towards psychosis pa-tients among medical students. *Early Intervent Psychiatr.* 2021;15(2):278–285.

18. Amsalem D, Yang LH, Jankowski S, Lieff SA, Markowitz JC, Dixon LB. Reducing stigma toward individuals with schizo-phrenia using a brief video: a randomized controlled trial of young adults. *Schizophr Bull.* 2021;47(1):7–14. doi:10.1093/schbul/sbaa114.

19. Amsalem D, Markowitz JC, Jankowski SE, *et al*. Sustained ef-fect of a brief video in reducing public stigma toward individuals with psychosis: a randomized controlled trial of young adults. *AJP*. 2021;178(7):635–642. doi:10.1176/appi.ajp.2020.20091293.

20. Amsalem D, Valeri L, Jankowski SE, *et al*. Reducing public stigma toward individuals with psychosis across race and gender: a randomized controlled trial of young adults. *Schizophr Res.* 2022;243:195–202. doi:10.1016/j.schres.2022.03.011.

21. Casados AT. Reducing the stigma of mental illness: Current approaches and future directions. *Clin Psychol: Sci Pract.* 2017;24(3):306–323. doi:10.1111/cpsp.12206.

22. Corrigan PW, Shapiro JR. Measuring the impact of programs that challenge the public stigma of mental illness. *Clin Psychol Rev.* 2010;30(8):907–922. doi:10.1016/j.cpr.2010.06.004.

23. Allport, GW. *The nature of prejudice*. Reading, MA: Addison Wesley. 1954

24. Maunder R, White F, Verrelli S. Modern avenues for intergroup contact: Using E-contact and intergroup emo-tions to reduce stereotyping and social distancing against people with schizophrenia. *Group Processes Intergroup Relat.* Published online 2018:1–17. doi: 10.1177/1368430218794873

25. Gao S, Ng SM. Reducing stigma among college students to-ward people with schizophrenia: a randomized controlled trial grounded on intergroup contact theory. *Schizophrenia Bullet Open.* 2021;2(1):sgab008. doi:10.1093/schizbullopen/sgab008.

26. Pettigrew TF, Tropp LR. A meta-analytic test of intergroup contact theory. *J Pers Soc Psychol.* 2006;90(5):751–783. doi:10.1037/0022-3514.90.5.751.

27. Brown R, Hewstone M. An integrative theory of intergroup contact. In: *Advances in Experimental Social Psychology*. Vol 37. Cambridge, MA: Elsevier Academic Press; 2005:255–343.

28. Rogers ES, Palmer-Erbs V, Rogers ES, Palmer-Erbs V. Participatory action research: implications for research and evaluation in psychiatric rehabilitation. *Psychosoc Rehab J.* 1994;18(2):3.

29. Corrigan P.W, Larson J.E., Kuwabara S.A. Social psychology of the stigma of mental illness: public and self-stigma models. In: *Social Psychological Foundations of Clinical Psychology*. New York: The Guilford Press; 2010:51–68.

30. Link BG, Phelan JC. Conceptualizing stigma. *Ann Rev Sociol.* 2001;2:363–385.

31. Reinke RR, Corrigan PW, Leonhard C, Lundin RK, Kubiak MA. Examining two aspects of contact on the stigma of mental illness. *J Soc Clin Psychol.* 2004;23(3):377–389. doi:10.1521/jscp.23.3.377.35457.

32. Reeder G, Pryor J. Dual psychological processes underlying public stigma and the implications for reducing stigma. *Mens Sana Monogr.* 2008;6(1):175. doi:10.4103/0973-1229.36546.

33. Denenny D, Bentley E, Schiffman J. Validation of a brief im-plicit association test of stigma: schizophrenia and danger-ousness. *J Mental Health.* 2014;23(5):246–250. doi:10.3109/09638237.2014.951482.

34. Greenwald AG, McGhee DE, Schwartz JLK. Measuring in-dividual differences in implicit cognition: the implicit associ-ation test. *J Pers Soc Psychol.* 1998;74(6):146417–141480.

35. Hermans D, De Houwer J, Eelen P. A time course ana-lysis of the affective priming effect. *Cognition Emotion.* 2001;15(2):143–165. doi:10.1080/02699930125768.

36. Fazio RH, Olson MA. Implicit measures in social cog-nition research: their meaning and use. *Annu Rev Psychol.* 2003;54(1):297–327. doi:10.1146/annurev.psych.54.101601.145225.

37. Na JJ, Park JL, LKhagva T, Mikami AY. The efficacy of interventions on cognitive, behavioral, and affective public stigma around mental illness: a systematic meta-analytic re-view. *Stigma Health.* 2022. doi:10.1037/sah0000372.

38. McGinty EE, Barry CL. Stigma reduction to combat the addiction crisis — developing an evidence base. *N Engl J Med.* 2020;382(14):1291–1292. doi:10.1056/NEJMp2000227.

39. West K, Hewstone M, Lolliot S. Intergroup contact and prejudice against people with schizophrenia. *J Soc Psychol.* 2014;154(3):217–232. doi:10.1080/00224545.2014.888327.

40. Stathi S, Tsantila K, Crisp RJ. Imagining intergroup con-tact can combat mental health stigma by reducing anx-iety, avoidance and negative stereotyping. *J Soc Psychol.* 2012;152(6):746–757. doi:10.1080/00224545.2012.697080.

41. Batson CD, Polycarpou MR, Harmon-Jones E, *et al*. Empathy and attitudes: can feeling for a member of a stig-matized group improve feelings toward the group? *J Personal Soc Psychol.* Published online 1997:14.

42. Tippin GK, Maranzan AK. Efficacy of a Photovoice-based video as an online mental illness anti-stigma intervention and the role of empathy in audience response: a randomized con-trolled trial. *J Appl Soc Psychol.* 2019;49(6):381–394.

43. Henderson C, Robinson E, Evans-Lacko S, Thornicroft G. Relationships between anti-stigma programme awareness, disclosure comfort and intended help-seeking regarding a mental health problem. *Br J Psychiatr.* 2017;211(5):316–322. doi:10.1192/bjp.bp.116.195867.

44. Chiesa M, Hobbs S. Making sense of social research: how useful is the Hawthorne Effect? *Eur J Soc Psychol.* 2008;38(1):67–74. doi:10.1002/ejsp.401.

45. Fox AB, Earnshaw VA, Taverna EC, Vogt D. Conceptualizing and measuring mental illness stigma: the mental illness stigma framework and critical review of measures. *Stigma Health.* 2018;3(4):348–376. doi:10.1037/sah0000104.

46. Gonzales L, Davidoff KC, DeLuca JS, Yanos PT. The mental illness microaggressions scale-perpetrator version (MIMS-P): reliability and validity. *Psychiatr Res.* 2015;229(1-2):120–125. doi:10.1016/j.psychres.2015.07.061.

47. Gonzales L, Yanos PT, Stefancic A, Alexander MJ, Harney-Delehanty B. The role of neighborhood factors and community stigma in predicting community participation among persons with psychiatric disabilities. *PS.* 2018;69(1):76–83. doi:10.1176/appi.ps.201700165.

48. Batson CD. *The altruism question: Toward a logical answer*. Hillsdale, NJ: Erlbaum. 1991.

49. Clinton AJ, Pollini RA. Using positive empathy interventions to reduce stigma toward people who inject drugs. *Front Psychol.* 2021;12:616729. doi:10.3389/fpsyg.2021.616729.

50. Corrigan PW, Rowan D, Green A, *et al*. Challenging two mental illness stigmas: personal responsibility and dangerousness. *Schizophr Bull.* 2002;28(2):293–309. doi:10.1093/oxfordjournals.schbul.a006939.

51. Corrigan PW, Larson J, Sells M, Niessen N, Watson AC. Will filmed presentations of education and contact diminish mental illness stigma? *Community Ment Health J.* 2007;43(2):171–181. doi:10.1007/s10597-006-9061-8.

52. Corrigan P, Markowitz FE, Watson A, Rowan D, Kubiak MA. An attribution model of public discrimination towards persons with mental illness. *J Health Soc Behav.* 2003;44(2):162. doi:10.2307/1519806.

53. de Vreede T, Andel S, de Vreede GJ, Spector P, Singh V, Padmanabhan B. What is engagement and how do we measure it? toward a domain independent definition and scale. *Proceedings of the 52nd Hawaii International Conference on System Sciences*. Published online 2019:10.

54. Payne BK, Cheng CM, Govorun O, Stewart BD. An inkblot for attitudes: Affect misattribution as implicit measurement. *J Pers Soc Psychol.* 2005;89(3):277–293. doi:10.1037/0022-3514.89.3.277.

55. Reynolds W. Development of reliable and valid short forms of the Marlowe-Crowne Social Desirability Scale. *J Clin Psychol.* 1982;38(1):119–125.

56. Yanos PT. *Written off: Mental Health Stigma and the Loss of Human Potential*. United Kingdom: Cambridge University Press; 2018.