General Medical Clinicians' Attitudes Toward People with Serious Mental Illness: A Scoping Review

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Abstract

Individuals with serious mental illness (SMI) experience significant premature mortality due to somatic conditions but often receive sub-optimal somatic care, but little research has been done to understand how general medical clinicians' attitudes may affect care provision or health outcomes. This review describes general medical clinicians' attitudes toward people with SMI, compares these attitudes to attitudes among mental health clinicians or toward individuals without SMI, and examines the relationship between attitudes and clinical decision making. Seventeen studies were reviewed. General medical clinicians reported negative attitudes toward individuals with SMI. These attitudes were generally more negative than attitudes among mental health clinicians and were consistently more negative when compared to attitudes toward individuals without SMI. Four studies suggest that these negative attitudes have an adverse effect on clinician decision making.

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Introduction

Individuals with serious mental illnesses (SMIs) such as schizophrenia, bipolar disorder, and major depression die 10–20 years earlier than individuals in the general population [1–3]. Excess mortality in this population is tied to higher rates of, and worse outcomes for, physical health conditions such as cardiovascular disease, respiratory illness, and diabetes mellitus [4–6]. Despite the need for somatic health care to address these conditions, the literature shows that many individuals with SMI receive sub-optimal quality of medical care [7]. For example, studies have shown that relative to people without SMI, individuals with SMI are less likely to receive preventive care [8] and guideline-concordant treatment for diabetes [9] or stroke [10] and are more likely to experience adverse patient safety events during general medical hospitalizations [11].

Across cultures and countries, the general public endorses negative attitudes toward individuals with SMI. One study on attitudes of the general public in 16 countries suggested that despite cultural and language differences and knowledge of disease etiology and efficacious treatment, there is a common "backbone" of stigma toward individuals with schizophrenia or depression [12]. While magnitude of endorsement of stigmatizing attitudes varied, there was a common expression of discomfort interacting with individuals with schizophrenia or depression and fear of their being violent driving negative attitudes across cultures [12].

Clinicians' attitudes toward individuals with SMI are an important but little-studied factor that may affect somatic care provision and health outcomes in these consumers. The relationship between clinicians' attitudes and disparities in healthcare provision and resultant health outcomes has been studied in other frequently stigmatized groups including racial or ethnic minorities and gay, lesbian, bisexual, or transgender (LGBT) individuals [13–16]. These studies have found that negative clinician attitudes affect health disparities in these populations through two pathways: (1) by negatively influencing clinical decision making, e.g., one study showed that negative implicit attitudes made clinicians less likely to recommend thrombolysis for acute myocardial infarction to black patients than to white patients [17], and (2) by negatively influencing patient-provider communication, e.g., one study showed higher rates of physician-dominated communication in visits with black patients versus white patients [13]. Poor patient-provider communication is linked to lower rates of treatment adherence or care-seeking behavior among patients and lower patient satisfaction with the information provided [13–16, 18, 19].

In studies examining their perceptions of both mental and somatic healthcare, consumers with SMI have reported experiencing diagnostic overshadowing, prognostic negativity, and paternalistic treatment, which may be manifestations of negative clinician attitudes toward consumers with SMI [4, 20–22]. To date, however, little is known about the attitudes of general medical clinicians toward individuals with SMI. A recent review by Henderson et al. [23] examined studies of the attitudes of general medical and mental health clinicians toward individuals with mental illness with a focus on interventions to decrease stigma. This article found negative attitudes among general medical clinicians toward individuals with mental illness and the authors concluded that stigma-reducing interventions would be especially beneficial for mental health clinicians, men, and clinicians early in their career or with burnout [23].

This scoping review builds on Henderson et al. review to conduct a review of studies of general medical clinicians' attitudes toward individuals with SMI. Henderson and colleagues [23] did not focus purely on SMI, but included studies examining clinicians' attitudes toward people with substance use disorders or mental illness generally. This is an important distinction as stigmatizing attitudes differ across diagnoses [24] and may be more negative toward individuals with SMI (e.g., schizophrenia, bipolar disorder, or major depression) compared to individuals with more common disorders such as anxiety or depression, as SMIs are less common and are associated with higher levels of functional impairment. Further, in their review, Henderson et al. only included studies that (1) compared attitudes between one or more groups of health professionals (e.g., psychiatrists or

general internists) and a non-medical group (e.g., general population or students) or (2) compared health professional attitudes toward individuals with mental illness to those without mental illness [23]. In contrast, this review included studies measuring general medical clinicians' attitudes toward persons with SMI broadly, including surveys that did not make the comparisons required for inclusion in Henderson et al. work. Due to these differing inclusion criteria, this review includes 10 articles not previously reviewed by Henderson and colleagues [23].

This scoping review maps the literature on general medical clinicians' attitudes toward individuals with SMI. Scoping review methodology was selected as, unlike systematic reviews or meta-analysis, it allowed for an iterative process for data selection and knowledge synthesis, which best fit the diversity of samples and methods used to assess these attitudes as well as the cultural and language differences between studies [25]. This review had four objectives: (1) to describe attitudes toward people with SMI among general medical clinicians, (2) to compare attitudes toward individuals with SMI among general medical and mental health clinicians (in studies where such a comparison was made), (3) to compare attitudes of general medical clinicians toward people with SMI versus people with somatic health conditions (in studies where such a comparison was made), and (4) to examine the relationship between general medical clinicians' attitudes toward individuals with SMI and clinical decision making.

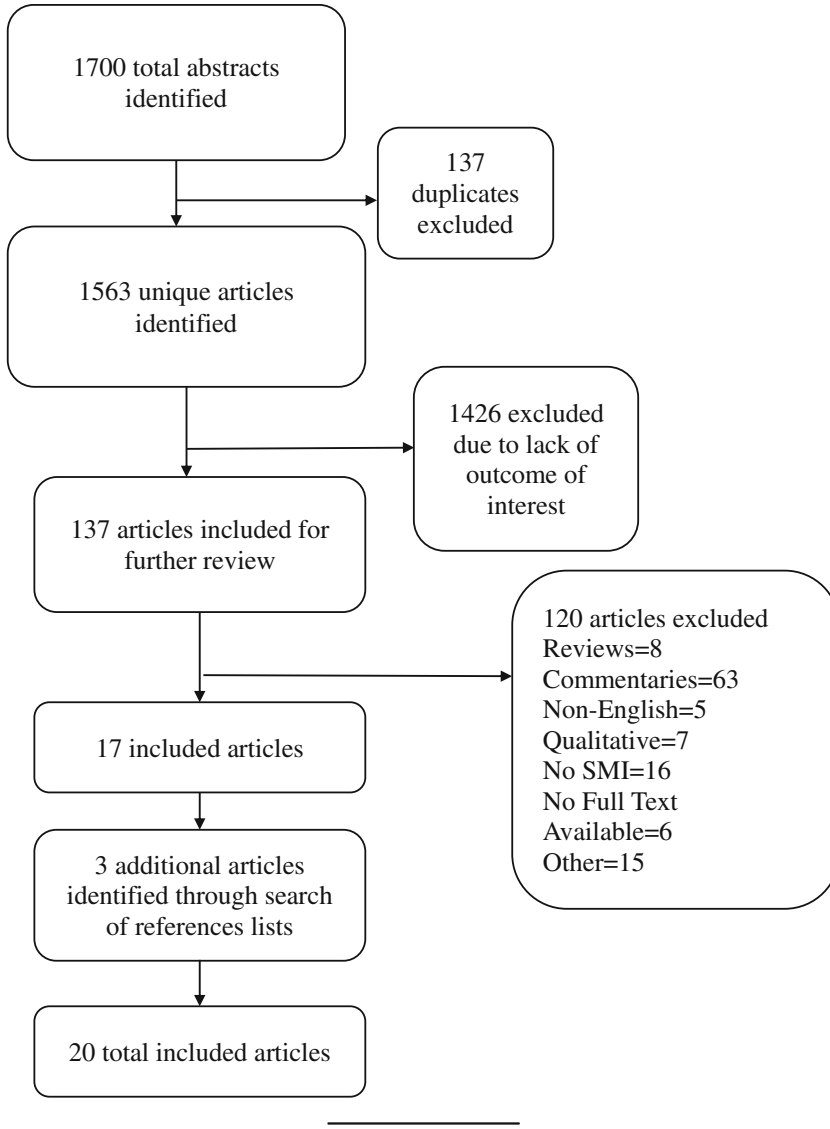
Methods

Studies included in this review were required to meet the following criteria: (1) published in English, (2) published between 1997 and 2018, (3) used quantitative measures, and (4) measured general medical clinicians' attitudes toward individuals with SMI. SMI is federally defined as "a diagnosable mental, behavioral, or emotional disorder that causes serious functional impairment that substantially interferes with or limits one or more major life activities." [26] For this study, inclusion was based on diagnoses that are generally associated with functional impairment, and therefore SMI (i.e., schizophrenia, bipolar disorder, and major depression), as most studies used diagnosis to define their measures. Studies that measured both general medical and mental health clinicians' attitudes were included if they reported measures of attitudes toward people with SMI separately for these two groups; studies that only reported attitudes among a combined group of general medical and mental health clinicians were excluded. Studies were excluded if they measured attitudes toward individuals with mental illness generally, toward individuals with diagnoses other than SMI (e.g., depression), or toward the disease itself rather than the individual.

The following keywords were used to identify relevant articles from Embase, PsycINFO, PubMed, and SCOPUS: "physician-patient relations" or "quality of health care" or "communication barriers" or "attitude" AND "severe mental illness" or "major depression" or "schizophrenia" or "bipolar disorder" AND "physicians" or "general practitioners" or "health care providers" or "primary care providers". Using this method, 1700 abstracts and 1563 unique articles were identified from a time period between 1997 and 2018: 381 from Embase, 283 from PsycINFO, 385 from PubMed, and 514 from SCOPUS. After exclusion criteria were applied, three additional studies were identified through a scan of reference lists of included articles. Twenty unique articles reporting results from 17 studies were included in this review. See Figure 1 for a flow diagram of the search and selection process.

A systematic process was used to extract study author, location, clinician sample, year of data collection, study method, and results from each study. Four categories of study results were extracted: (1) measures of the magnitude of general medical clinicians' attitudes toward individuals with SMI, such as perceived dangerousness; (2) measures comparing attitudes among general medical clinicians and mental health clinicians; (3) measures comparing general medical clinicians' attitudes toward individuals with SMI and individuals with chronic somatic conditions, such as

Figure 1
Flow diagram of search and selection process



diabetes or eczema; (4) measures of the association between general medical clinicians' attitudes toward individuals with SMI and clinical decision making.

Results

The 20 included articles were published between 1998 and 2017 (Table 1). Data for these studies was collected between 1995 and 2015. Of the 17 unique studies reported, three were conducted in the United Kingdom [37–39], two in Australia [40, 41], two in Japan [42, 43], two in Turkey [32, 44], two in the USA [45–49], and one each in Hong Kong [50], India [51], Italy [52], Pakistan [53], Sri Lanka [54], and Sweden [55]. Eight studies measured clinicians' attitudes in response to

Table 1
Summary of included studies (*N*=17 studies)

Author, publication year	Country	Sample	Year(s) data collected	Method *SMI diagnoses are underlined*
Aydin, 2003	Turkey	40 academicians, 40 resident physicians, & 40 nurses	2001	Survey of attitudes in response to Star's vignettes [27] depicting individuals with paranoid schizophrenia based on Arkar's social distance scale [28] and Eker's questionnaire on expected burden [29]
Bjorkman, 2008	Sweden	69 somatic care nurses: 44 registered nurses and 25 assistant nurses	Not described	Survey of attitudes in response to written statements about individuals with severe depression and schizophrenia based on the Swedish version of the Royal College of Psychiatrists' Campaign (RCPC)[a] Survey [30]
Chandramouleeswaran, 2017	India	57 nonpsychiatric medical residents	Jan.-March 2015	Survey of attitudes in response to written vignettes depicting individuals with schizophrenia based on the Attitudes toward Mental Illness Questionnaire (AMIQ) [31]
Fernando, 2010	Sri Lanka	574 medical students and 72 doctors from surgical and medical wards	April-Sep. 2008	Survey of attitudes in response to written statements about individuals with severe depression and schizophrenia based on the RCPC Survey [30]
Hori, 2011	Japan	112 physicians other than psychiatrists	May–June 2009	Survey of attitudes in response to written statements about individuals with schizophrenia based on Uçok et al.'s questionnaire [32] and other literature
Ishige, 2005	Japan	76 non-psychiatric care workers (health care assistants, medical case workers, and social welfare workers)	2001–2002	Survey of attitudes toward in response to statements related to individuals with schizophrenia based on the semantic differential technique [33] and the modified Social Rejection Scale (m-SRS) [34]

Table 1
(continued)

Author, publication year	Country	Sample	Year(s) data collected	Method *SMI diagnoses are underlined*
Jorm, 1999	Australia	872 general practitioners	May–June 1996	Survey of attitudes in response to a written vignette depicting a person with either major depression or schizophrenia
Lam, 2013	Hong Kong	500 primary care physicians	Dec. 2009-April 2010	Survey of attitudes in response to a written vignette depicting a person with schizophrenia
Lawrie, 1998	United Kingdom	166 general practice physicians	Not described	Survey of attitudes in response to a written vignette depicting a woman with schizophrenia who has a 5-year-old daughter
Magliano, 2017	Italy	430 general practitioners	June 2013–March 2014	Survey of attitudes in response to a statements related to a diagnosis or clinical description of a person with schizophrenia based on a revised version of the Opinion on Mental Illness Questionnaire [35]
Mittal, 2014; Corrigan 2014; Sullivan 2015; Smith, 2017[b]	United States	146 primary care clinicians: 91 nurses & 55 physicians	Aug. 2011-April 2012	Survey of attitudes in response to a written vignette depicting a man with schizophrenia seeking care for low back pain
Mukherjee, 2002	United Kingdom	184 doctors & 335 medical students	Not described	Survey of attitudes in response to written statements about individuals with severe depression and schizophrenia based on the RCPC Survey [30]
Naeem, 2006	Pakistan	99 doctors & 200 medical students	Not described	Survey of attitudes in response to written statements about individuals with severe depression and schizophrenia based on the RCPC Survey [30]
Noblett, 2015	United Kingdom	52 general hospital doctors	Not described	Survey of attitudes in response to written vignettes depicting individuals with schizophrenia based on the RCPC Survey [30]

Table 1
(continued)

Author, publication year	Country	Sample	Year(s) data collected	Method *SMI diagnoses are underlined*
				and the Attitudes to Mental Illness Questionnaire [31]
Rogers, 1998	Australia	30 general nurses	May-Aug. 1995	Survey of attitudes, asking what respondents 'should' or 'would' do in response to a modified version of the Discrimination and Devaluation Scale [36] and written vignettes depicting an individual with schizophrenia in a social setting and moving in to a flat next door
Uçok, 2006	Turkey	106 general practitioners	Not described	Survey of attitudes in response to "general myths" associated with individuals with schizophrenia
Welch, 2015	United States	256 primary care physicians	2010	Survey of attitudes in response to video vignettes depicting a man or a woman with schizophrenia with normal affect or schizophrenia with bizarre affect

[a]This survey is referred to by multiple names in the literature. Here, we refer to it as the "Royal College of Psychiatrists' Campaign (RCPC) Survey" Crisp, A. H., Gelder, M. G., Rix, S., Meltzer, H. I., & Rowlands, O. J. (2000). Stigmatization of people with mental illnesses. The British Journal of Psychiatry, 177 (1), 4–7
[b]These four publications use the same data set

written statements about individuals with SMI [32, 38, 42, 43, 52–55]. Four of these used the survey created for the Royal College of Psychiatrists' Campaign (RCPC) by Crisp, et al. [30, 38, 53–55] Nine studies measured attitudes in response to vignettes depicting an individual with SMI. Eight of these studies used written vignettes [37, 39–41, 44, 46, 50, 51] and one used video vignettes [49]. Five studies measured attitudes toward individuals with major depression or schizophrenia [38, 40, 53–55], and the other 12 measured attitudes only toward individuals with schizophrenia [32, 37, 39, 41–47, 49–52]. General medical clinician populations surveyed included physicians [32, 37–40, 42, 44–47, 49, 50, 52–54], nurses [41, 44–47, 55], medical students [38, 51, 53, 54], academicians [44], and other non-psychiatric care workers such as health care assistants, case workers, or social welfare staff [43].

General medical clinicians' attitudes toward individuals with SMI

Selected measures of medical clinicians' attitudes toward individuals with SMI are described below. Appendix 1 contains detailed information on each measure.

Perceived dangerousness was measured by 12 of the 17 studies [32, 37–40, 42, 46, 49, 52–55]. In general, beliefs about dangerousness were more negative toward individuals with schizophrenia compared to those with major depression. The four studies using the RCPC survey [30] reported levels of agreement ranging from 49 to 55% (mean score: 4.3) for beliefs that individuals with schizophrenia were dangerous to others and agreement from 12 to 28% (mean score: 1.6) for beliefs that individuals with major depression were dangers to others [38, 53–55]. One study reported that general practitioners in Australia rated individuals with major depression less likely to be violent than other patients (mean rating: − 0.2) and those with schizophrenia more likely to be violent than other patients (mean rating: 0.1) [40]. Welch et al. [49] found that attitudes on perceived dangerousness were more negative in response to vignettes depicting individuals with schizophrenia with bizarre affect (mean score: 7.6) compared to those depicting individuals with normal affect (mean score: 8.4). Magliano et al. [52] found that the majority of general practitioners (79.5%) believed that individuals with schizophrenia become dangerous if they stop taking medication.

Nine of the studies reviewed included measures on provider perceptions of clinical encounters and disease management [37–39, 49, 50, 52–55]. Most clinicians believed that individuals with schizophrenia or major depression could improve with treatment or recover [38, 52–55]. Two studies found that that while practitioners welcomed having individuals with schizophrenia on their patient panel, they also believed that these patients would take a lot of their time and would be unlikely to comply with treatment [37, 50]. On measures of ability to self-manage health, Welch and colleagues [49] reported a slightly higher perceived ability for individuals with schizophrenia with normal affect (mean score: 11.5) compared to individuals with schizophrenia with bizarre affect (mean score:10.6) and Magliano et al. [52] reported that the majority of general practitioners did not believe or only partially believed that individuals with schizophrenia were reliable in referring their mental (82.3%) or physical (77.1%) problems to medical doctors.

Desire for social distance was also measured in nine of the studies reviewed [32, 41–44, 46, 49, 51, 52]. Studies generally reported high desires for social distance among general medical clinicians and high perceptions of social distancing by others [52]. In one study, none of the measures for social distance received positive responses from all three clinician groups surveyed [44]. Welch and colleagues [49] report a higher desire for social distance toward individuals with schizophrenia with bizarre affect (mean score: 9.6) compared to individuals with schizophrenia with normal affect (mean score: 10.7) among primary care physicians in the USA. Rogers and Kashima [41] measured social distance by measuring how nurses felt they "should" respond compared to how they "would" respond in social situations with individuals with schizophrenia.

Overall scores were more negative for how nurses "would" actually respond (mean: 1189.9) compared to how they believed they "should" respond (mean: 1378.2) [41].

Five studies measured general medical clinicians' perceptions of disease attribution. Of the four studies using the RCPC survey [30], belief that individuals with schizophrenia were to blame for their illness had high levels of endorsement (53.7% agreement) in only one study of clinicians in Pakistan [53]. Other attitudinal measures were related to personal characteristics of those with SMI, such as unpredictability, being hard to talk or relate to, and abilities to maintain social relationships. All four of the RCPC surveys [30] found negative attitudes relating to the measures "unpredictable" (70.8–84.9% agreement, mean score: 4.3) toward individuals with schizophrenia [38, 53–55]. Negative attitudes toward individuals with major depression were found in the domain "hard to talk to" (50.0–62.2% agreement, mean score: 3.5) [38, 53–55]. Two studies also found that general practitioners and residents believed that individuals with major depression and schizophrenia are more likely to have poor friendships and less likely to have successful marriages relative to individuals without SMI [40, 51].

Comparisons of general medical clinicians' vs mental health clinicians' attitudes toward individuals with SMI

Comparisons between general medical clinicians' and mental health clinicians' attitudes toward individuals with SMI were made in seven studies (summarized in Table 2). Overall findings were mixed. Three studies [42, 43, 46, 48] reported more negative attitudes among general medical clinicians compared to mental health practitioners. Hori and colleagues [42] compared attitudes toward individuals with schizophrenia among general medical physicians, psychiatrists, and psychiatric staff in Japan. All measures of attitudes were significantly more negative among the general medical clinicians compared to psychiatric staff and psychiatrists. The largest differences in attitudes were found on measures of beliefs that patients with schizophrenia could harm children (58.0% of general medical clinicians vs. 22.2% of psychiatrists) and are untrustworthy (36.6% vs 5.6%) and not wanting to have a neighbor with schizophrenia (41.4% vs. 11.1%) [42]. Also in Japan, Ishige and Hayashi [43] found that both mental health nurses had more positive attitudes toward individuals with schizophrenia compared to non-psychiatric care workers in Japan. Compared to mental health nurses, non-psychiatric care workers reported significantly less accepting attitudes and greater desire for social distance [43]. In the USA, Mittal et al. [46] reported more negative attitudes among primary care nurses and physicians compared to mental health clinicians (nurses, psychiatrists, and psychologists) employed by five Veterans Affairs hospitals located in the southern USA. Ratings on measures of provider stereotyping and attribution of mental illness were more significantly more negative among the general medical clinicians [46]. Using the same data, Smith et al. [48] further divided the provider groups and found both primary care nurses and physicians reported significantly greater desire for social distance compared to psychologists and mental health nurses. Primary care physicians were also significantly more likely to endorse stereotypical beliefs toward individuals with schizophrenia compared to psychologists or mental health nurses [48].

Two studies reported mixed results. The first compared attitudes between somatic and psychiatric care nurses toward individuals with major depression and schizophrenia in Sweden. While measures of attitudes toward individuals with major depression were similar between the two groups, general medical clinicians had more negative attitudes than mental health clinicians toward individuals with schizophrenia. Significant differences were reported found on beliefs that individuals with schizophrenia are dangerous (somatic care nurses: 3.6 vs. psychiatric care nurses: 2.9), unpredictable (4.3 vs. 3.6), and hard to talk to (3.8 vs. 3.3) [55]. The second study, conducted in Australia, found that clinical psychologists generally had more positive attitudes toward people with major depression compared to either general practitioners or psychiatrists. The greatest

Table 2

Comparisons of attitudes about consumers with serious mental illness among general medical clinicians to attitudes among mental health clinicians ($N = 7$ studies)

Author, publication year	Comparison of stigma measures in general medicine practitioners versus mental health specialists				Comparison summary
Bjorkman, 2008		Somatic care nurses ($n = 69$)	Psychiatric care nurses ($n = 51$)		Mixed results
	Mean measures of attitude on a scale of 1 (most positive) to 5 (most negative); mean (standard deviation)				
	Severe Depression				
	Danger to others:	1.6 (0.9)	1.6 (0.7)		
	Unpredictable:	3.1 (1.0)	3.0 (1.0)		
	Hard to talk to:	3.5 (1.0)	3.3 (0.8)		
	Themselves to blame:	1.6 (0.8)	1.4 (0.7)		
	Not improved if treated:	1.4 (0.8)	1.2 (0.7)		
	Perceived as unusual:	3.7 (1.2)	4.0 (1.1)		
	Pulling themselves together:	2.2 (0.8)	2.1 (0.7)		
	Never recover:	1.6 (1.0)	1.4 (0.6)		
	Schizophrenia				
	Danger to others:	3.6 (1.0)***	2.9 (0.9)		
	Unpredictable:	4.3 (0.7)***	3.6 (0.8)		
	Hard to talk to:	3.8 (0.7)***	3.3 (0.8)		
	Themselves to blame:	1.3 (0.6)	1.2 (0.5)		
	Not improved if treated:	2.0 (1.0)	1.8 (1.0)		
	Perceived as unusual:	4.4 (0.8)	4.5 (1.0)		
	Pulling themselves together:	1.8 (0.9)	1.9 (0.7)		
	Never recover:	3.5 (1.2)	3.2 (1.3)		
Hori, 2011		Physicians ($n = 112$)	Psychiatric staff	Psychiatrists ($n = 36$)	More negative attitudes among general

Table 2
(continued)

Author, publication year	Comparison of stigma measures in general medicine practitioners versus mental health specialists			Comparison summary
		($n = 100$)		medicine clinicians
	Percentage of subjects who answered "I agree"			
	Patients with schizophrenia can work:	82.1***	87.0	97.2
	Would oppose if a relative would like to marry someone who has schizophrenia:	76.8*	86.0	75.0
	Schizophrenia patients can be recognized by their appearance:	24.1***	47.0	41.7
	Schizophrenia patients are dangerous:	30.4***	18.0	2.8
	Would not like to have a neighbor with schizophrenia:	41.1**	44.0	11.1
	Schizophrenia patients are untrustworthy:	36.6***	25.0	5.6
	Schizophrenia patients could harm children:	58.0**	54.0	22.2
	Schizophrenia patients should be kept in hospitals:	17.0***	11.0	0.0
Ishige, 2005		Non-psychiatric care workers ($n = 229$)	Public health nurses ($n = 83$)	Psychiatric nurses ($n = 261$)	More negative attitudes among general medicine clinicians
	Mean score (standard deviation)			
	Evaluation Scale Score (higher score indicates more accepting attitude):	6.3 (6.2)***	12.2 (6.3)	9.9 (6.5)	
	m-SRS Score (higher score indicates higher degree of distancing):	22.2 (4.0)***	18.3 (3.9)	21.0 (4.8)	
Jorm, 1999		General practitioners ($n = 872$)	Psychiatrists ($n = 1128$)	Clinical psychologists	Mixed results

Table 2
(continued)

Author, publication year	Comparison of stigma measures in general medicine practitioners versus mental health specialists			Comparison summary
			(*n* = 454)	
	Mean ratings on scale of − 1 (less likely) to 1 (more likely)[a]			
	Depression: Negative Outcomes			
	Be violent:	− 0.2	− 0.2	− 0.4
	Have poor friendships:	0.1	0.0	− 0.2
	Depression: Positive Outcomes			
	Understand other's feelings:	0.3	0.5	0.4
	Have a good marriage:	− 0.2	− 0.1	0.1
	Be a caring parent:	0.0	0.0	0.2
	Be a productive worker:	− 0.1	0.0	0.2
	Be creative or artistic:	0.0	0.0	0.1
	Schizophrenia: Negative Outcomes			
	Be violent:	0.1	0.1	0.0
	Have poor friendships:	0.6	0.8	0.6
	Schizophrenia: Positive Outcomes			
	Understand other's feelings:	− 0.4	− 0.5	− 0.3
	Have a good marriage:	− 0.6	− 0.8	− 0.6
	Be a caring parent:	− 0.4	− 0.6	− 0.4
	Be a productive worker:	− 0.5	− 0.7	− 0.5
	Be creative or artistic:	0.1	− 0.2	0.0
Mittal, 2014		Primary care providers (*n* = 146)	Mental health providers (*n* = 205)	More negative attitudes among general medicine clinicians
	Mean (standard deviation)			
	Desire for social distance score (range 5–20, higher number indicates greater desire for	11.6 (4.9)	10.6 (4.3)	

Table 2
(continued)

Author, publication year	Comparison of stigma measures in general medicine practitioners versus mental health specialists			Comparison summary
	social distance from person with schizophrenia):			
	Provider stereotyping score (range 9–63, higher number indicates more negative stereotype on semantic differential items such as valuable/worthless, clean/dirty, and safe/dangerous):	28.6 (14.0)**	26.5 (9.9)	
	Attribution of mental illness score (range 6–54, higher number indicates more negative attitudes and emotions, including endorsement of the idea that the patient is responsible for his condition, that he is dangerous, and feelings of anger and fear about the patient):	11.0 (9.4)*	9.2 (5.3)	
Rogers, 1998		General nurses ($n = 30$)	Psych. nurses ($n = 31$)	No difference in attitudes among general medicine and mental health clinicians
	Mean prejudice score			
	Low prejudice (11–21):	16.1	16.7	
	High prejudice (22–55):	26.3	25.8	
	Mean 'should', 'would', and prejudice scores (lower scores indicate more negative attitudes); mean (standard deviation)			
	Would index (indicates how respondents would actually respond in a situation based on their personal thoughts and feelings):	1189.9 (243.5)	1299.2 (216.8)	
	Thinking:	380.9 (89.1)	415.4 (78.3)	
	Feeling:	368.9 (113.0)	429.7 (93.7)	

Table 2
(continued)

Author, publication year	Comparison of stigma measures in general medicine practitioners versus mental health specialists					Comparison summary
	Behaving:	440.2 (85.8)		454.1 (80.8)		
	Should index (indicates how respondents think they should respond in a situation based on personal standards):	1378.2 (210.3)		1335.0 (201.7)		
	Thinking:	437.6 (84.7)		425.1 (64.4)		
	Feeling:	472.8 (90.5)		459.8 (89.2)		
	Behaving:	467.7 (67.1)		450.1 (74.4)		
	Average of					
	'Shoulds' and 'woulds':	1284.1		1317.1		
	Thinking:	409.3		420.3		
	Feeling:	420.8		444.8		
	Behaving:	454.0		452.1		
	Total prejudice score:	22.5		22.3		
Smith, 2017		Primary care nurse (n = 91)	Primary care physician (n = 5-5)	Mental health nurse (n = 67)	Psychiatrist (n = 62)	Psychologist (n = 76)	More negative attitudes among general medicine clinicians
	Mean (standard error)						
	Provider stereotyping (range 9–63, higher score indicates more negative attitude):	27.42 (1.00-)*	30.67 (1.04)*	26.49 (1.10)	27.21 (.87)	25.91 (0.76)	
	Attribution of mental illness (range 6–54, higher score indicates more negative attributions):	10.55 (0.64)	11.57 (0.81)	9.03 (0.59)	9.88 (0.56)	8.75 (0.33)	

Table 2
(continued)

Author, publication year	Comparison of stigma measures in general medicine practitioners versus mental health specialists					Comparison summary
	Social distance (range 5–20, higher score indicates a greater desire for social distance and more negative attitude):	11.31 (0.35)	12.06 (0.39)*	10.72 (0.42)	11.37 (0.46)	9.92 (0.32)

*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$
[a]*P* values not reported

differences between general practitioners and clinical psychologists were found on beliefs that individuals with major depression are more likely to have poor friendships (general practitioner mean score: 0.1 vs. clinical psychologist mean score: − 0.2) and less likely to have good marriages (− 0.2 vs. 0.1) or be a productive worker (− 0.1 vs 0.2). Attitudes toward individuals with schizophrenia were similar across the three groups [40]. The final study reported no difference in attitudes toward individuals with schizophrenia between general nurses and psychiatric nurses in Australia [41].

Comparisons of general medical clinicians' attitudes toward individuals with SMI vs somatic conditions

Five studies made comparisons between general medical clinicians' attitudes toward individuals with SMI and individuals with somatic conditions (summarized in Table 3). All five studies reported more negative attitudes toward individuals with SMI than toward individuals with somatic conditions. Two of the studies were performed in the USA. Mittal and colleagues [46] compared attitudes in response to written vignettes describing individuals with versus without schizophrenia. On all three measures, attitudes were more negative toward the individual depicted as having schizophrenia with significant differences found in provider stereotyping and attribution of mental illness scores [46]. Welch et al. [49] compared attitudes in response to video vignettes of individuals with schizophrenia with normal affect, schizophrenia with bizarre affect, and eczema. The most negative attitudes were directed toward individuals with schizophrenia with bizarre affect, with significant differences found on personal attributes and perceived dangerousness scores when compared to individuals with eczema. All four measures were more negative toward individuals with either schizophrenia description compared to individuals with eczema except ability to self-mange health (schizophrenia with normal affect mean score: 11.5 vs. eczema mean score: 11.4) [49].

Two studies were conducted in the UK. One compared attitudes toward individuals with controlled schizophrenia, controlled diabetes, and previously healthy individuals. Compared to individuals with diabetes, clinicians significantly more likely to report thinking that individuals with schizophrenia were more likely to be violent (schizophrenia median score: 1 vs. diabetes median score: 0), being less happy to have the patient on their list (5 vs. 6), and being more concerned about the welfare of the individual's child (3 vs. 2) [37]. The second study compared attitudes toward individuals with schizophrenia and individuals with diabetes. Compared to those with diabetes, general medical clinicians had more negative attitudes toward individuals with schizophrenia on every measure, with significant differences on beliefs that patients with schizophrenia were unpredictable (schizophrenia mean score: − 0.3 vs. diabetes mean score: 0.9), dangerous (0.2 vs. 1.1), and hard to talk to (0.3 vs. 1.2) as well as being less likely to be comfortable seeing the patient on their own (0.5 vs. 1.3) [39]. The fifth study, conducted in India, compared attitudes between individuals with schizophrenia and diabetes with medical students reporting more favorable attitudes toward patients with individuals with diabetes compared to those with schizophrenia [51].

Association between clinicians' attitudes and clinical decision making

Three US studies [45, 47, 49] and one Italian study [52] examined the association between general medical clinicians' attitudes toward people with SMI and clinical decision making. Using the study data reported by Mittal et al. [46], summarized above, Sullivan et al. [47] and Corrigan et al. [45] assessed the influence of clinician stigma and the influence of a schizophrenia diagnosis on clinicians' decisions in five VA hospitals in the southeast and south central USA. Sullivan and colleagues [47] measured the relationship between vignette type (schizophrenia or no schizophre-

Table 3

Comparisons of general medical clinicians' attitudes about consumers with serious mental illness versus those with somatic conditions ($N = 5$ studies)

Author, publication year	Comparison of measures of general medical clinicians' attitudes toward patients with mental illness versus patients with somatic conditions				Comparison summary
Chandramouleeswaran, 2017		Schizophrenia	Diabetic		
	Attitude to mental illness questionnaire scores (higher score indicates more favorable attitude)[a]				More negative attitudes about patients with mental illness
	Minimum score	− 10.00	− 3.00		
	Maximum score	10.00	10.00		
	Mean score	− 2.14	7.54		
	Standard deviation	4.43	3.02		
	95% CI	-3.28-0.93	6.71-8.24		
Lawrie, 1998		Schizophrenia	Diabetes	Healthy	More negative attitudes about patients with mental illness
	Median measures of agreement on a scale of 0 (not at all) to 6 (complete); median (interquartile range)				
	You would be happy to have this patient on your list:	5 (4–6)*	6 (5–6)	6 (5–6)	
	This person is likely to take up a lot of time:	4 (3–5)	4 (3–5)	4 (3–4)	
	This patient is more likely to be violent than most patients:	1 (0–3)*	0 (0–1)	1 (0–2)	
	She is unlikely to comply with advice or treatment given:	2 (1–3)	1 (0–3)	2 (1–3)	
	You would be concerned about the child's welfare:	3 (3–4)***	2 (1–3)	3 (1–3)	
	She arouses your sympathy:	4 (3–5)	4 (3–5)	4 (4–4)	
Mittal, 2014		Schizophrenia vs. nonschizophrenia			More negative attitudes about patients with mental illness
	Mean difference				
	Desire for social distance score (range 5–20, higher number indicates greater desire for social distance from person):	0.8			
	Provider stereotyping score (range 9–63, higher number indicates more negative stereotype on semantic differential items such as valuable/worthless,	5.1**			

Table 3
(continued)

Author, publication year	Comparison of measures of general medical clinicians' attitudes toward patients with mental illness versus patients with somatic conditions				Comparison summary
	clean/dirty, and safe/dangerous):				
	Attribution of mental illness score (range 6–54, higher number indicates more negative attitudes and emotions, including endorsement of the idea that the patient is responsible for his condition, that he is dangerous, and feelings of anger and fear about the patient):	2.1**			
Noblett, 2015		Schizophrenia	Diabetes		More negative attitudes about patients with mental illness
	Mean attitude scores on a scale of − 2 (most negative) to 2 (most positive)[b]				
	Comfortable seeing on own:	0.5***	1.3		
	Suspicious of reason:	0.6	1.0		
	Hard to talk to:	0.3***	1.2		
	Dangerous:	0.2***	1.1		
	Unpredictable:	− 0.3***	0.9		
Welch, 2015		Schizophrenia, normal affect	Schizophrenia, bizarre affect	Eczema	More negative attitudes about patients with mental illness
	Least squares mean (standard error)				
	Ability to self-manage health score (range 4–16, higher number indicates higher perceived ability to self-manage health):	11.5 (0.3)	10.6 (0.3)	11.4 (0.3)	
	Personal attributes score, i.e. competence, intelligence, confidence, warmth, sincerity, and being good-natured (range 4–24, higher number indicates more positive attitude):	17.8 (0.4)	15.2 (0.4)***	17.9 (0.4)	
	Desire for social distance score (range 1–20, higher number indicates greater willingness to be socially	10.7 (0.5)	9.6 (0.5)	11.3 (0.5)	

Table 3
(continued)

Author, publication year	Comparison of measures of general medical clinicians' attitudes toward patients with mental illness versus patients with somatic conditions				Comparison summary
	connected with person with schizophrenia):				
	Perceived dangerousness score (range 1–12, higher number indicates lower perception of dangerousness):	8.4 (0.3)	7.6 (0.3)***	9.6 (0.2)	

*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$
[a]*P* values not reported
[b]Results presented in a graph. Numbers reported here are author's interpretation

nia) and perceived treatment adherence, ability to read and understand health materials, and competence in managing health and provider referral to weight reduction, pain management, or sleep studies. They found that both general medical and mental health clinicians anticipated that individuals with schizophrenia would have lower levels of treatment adherence, competence in managing their health, and ability to understand treatment materials compared to otherwise identical patients without schizophrenia. Additionally, clinicians were less likely to say they would refer an individual with schizophrenia to a weight-reduction program compared to an individual without schizophrenia, but this relationship was not seen in responses related to referrals for pain-management programs or sleep studies [47].

Using the same data, Corrigan et al. [45] tested the relationship between stigma and health decisions accounting for familiarity with mental illness and provider discipline (general medical or mental health). They found that the relationship between negative attitudes and likelihood of treatment referral was partially mediated by perceived treatment adherence. Clinicians with more stigmatizing attitudes were less likely to believe that individuals with schizophrenia would adhere to treatment and therefore less likely to report they would refer consumers to specialists or refill medication prescriptions of a non-steroidal anti-inflammatory or a narcotic analgesic compared to individuals without schizophrenia. Familiarity with mental illness was significantly related to both provider discipline and negative attitudes, but the relationship between provider discipline and stigma characteristics was not significant [45].

Welch et al. [49] used a mixed methods approach to assess the influence of primary care clinicians' attitudes difference on clinical diabetes management among internists or family practitioners working in Massachusetts. Clinicians responded to interview questions after viewing a video vignette and completing a survey. This study found relatively few differences in clinical actions based on clinicians' attitudes. For consumers with schizophrenia with bizarre affect, clinicians were more likely to say they would rely on other sources (charts or other clinicians) for patient information and would be more likely to enter "subjective impressions" in chart notes compared to patients with eczema, depression, or schizophrenia with normal affect [49].

In Italy, Magliano et al. [52] tested whether the relationships between any stigmatizing attitudes and differential conduct toward individuals with schizophrenia were mediated by the physician's perception that those with schizophrenia were dangerous. Endorsing beliefs that individuals with schizophrenia need life-long pharmacological treatment, are unreliable in reporting health problems, and are kept at a social distance by others were significantly related to the perception of individuals with schizophrenia as dangerous. This perception of dangerousness, the belief that schizophrenia requires long-term pharmacological treatment, and the perception of others' social distance were all significantly related to more restrictive, discriminatory behaviors in non-psychiatric hospital settings (e.g., separating individuals with schizophrenia from other patients) [52].

Discussion

General medical clinicians demonstrated negative attitudes toward individuals with SMI across all 17 studies spanning 11 countries included in this review [56, 57]. Measures of desire for social distance were frequently endorsed, with one study indicating that 100% of nurses would not like their sister marrying someone with schizophrenia [44]. Measures of perceived dangerousness indicated that clinicians believed that individuals, especially those with schizophrenia, were more likely to be violent compared to those without SMI [37, 39, 40, 46, 49]. Relative to mental health specialists, many general medical clinicians in the studies reviewed had more negative attitudes toward people with SMI [42, 43, 46, 48, 55]. In addition, all five studies that compared general medical clinicians' attitudes toward individuals with SMI to those with somatic conditions found attitudes to be more negative toward consumers with SMI [37, 39, 46, 49, 51]. The four studies that assessed the impact of clinician attitudes on clinical decision making suggest that negative attitudes

adversely affect clinical decision making regarding somatic care for individuals with SMI [45, 47, 49, 52]. The negative attitudes, especially perceptions of dangerousness and desire for social distance, endorsed by general medical clinicians toward individuals with SMI were similar to those in the general public [56, 57]. As in the general public, negative attitudes were similar across cultures, reflecting the "backbone" of stigma described by Pescosolido and colleagues [12], and may be partially due to relatively less exposure of both general medical clinicians and the general public to individuals with SMI compared to mental health specialists.

Attitudes were measured in response to written vignettes about individuals with SMI in nine studies. Eight studies used written vignettes [37, 39–41, 44, 46, 50, 51] and one study used video vignettes [49]. Vignettes lead respondents to answer attitudinal questions in response to a portrayal of a specific person with SMI, while attitudinal questions asked in the absence of vignettes allow clinicians to report their attitudes based on their own interpretation of people with SMI. Vignettes that portray individuals as symptomatic, e.g., actively experiencing delusions, and prior research suggests that such depictions increase stigma relative to depictions of people with successfully treated, asymptomatic SMI [58]. In addition, vignettes—especially video vignettes—may introduce other stigmatizing attributes (e.g., race) that could affect the magnitude of the attitudes measured [24]. Despite these limitations, findings of negative attitudes were consistent across both survey and vignette methodologies. These negative attitudes may adversely affect the quality of somatic health care provided to this vulnerable population. As discussed previously, research in other populations suggests that negative clinician attitudes can adversely affect clinical decision-making and patient-provider communication [13–16]—a finding that the results of the studies by Corrigan et al. [45], Magliano et al. [52], Sullivan et al. [47], and Welch et al. [49], included in this review, suggest holds true for the population with SMI as well.

With individuals with SMI, provider-consumer interactions may be further complicated by factors including cognitive and communication deficits and lack of social support in consumers, discomfort, or limited experience treating individuals with SMI among general medical clinicians, and increased likelihood of interactions occurring in emergency room or other non-usual care settings [59]. Some of the attitudes possibly influenced by these factors, such as perceived dangerousness, are not supported in the literature [60, 61]. Others, though, may stem from providers' perceptions that individuals with SMI have lower health literacy [62] and smaller social networks [63]—perceptions that are supported by evidence and impact individuals' ability to self-manage health or maintain relationships [64].

Interventions to improve clinician attitudes toward stigmatized populations have been effective in other patient groups. Effective interventions have included implicit bias training and mindfulness practices to increase awareness and support modification of negative attitudes, decrease distractions and stressors to reduce cognitive load, and build clinicians' skills in patient-centered communication [65–67]. However, these types of interventions have not yet been adapted to address general medical clinicians' attitudes toward people with SMI. Educational interventions designed to improve healthcare clinicians' attitudes about and knowledge of mental illness in general are more common. A Canadian study examined elements of programs implemented to reduce stigma toward mental illness among general medical and mental health clinicians. Two key elements of successful programs were providing a message focused on recovery and including social interactions with individuals successfully living with mental illness, as providers often encounter individuals when they are sickest [68]. As indicated in this study, some interventions that are successful in other patient populations (e.g., interactions with individuals in the patient group) may need to be modified to successfully change attitudes about individuals with SMI. One study in this review did include an education intervention aimed at improving attitudes toward individuals with SMI. Uçok et al. [32] measured attitudes of general practitioners in Turkey before and after an interactive training session aimed at educating clinicians on schizophrenia, its treatment, the impact of stigma, and their role in the process. Post-test attitudes were more positive for all but two items compared

to the pretest. The most change was measured on items related to the course and treatment of schizophrenia [32].

Future research is needed in several areas. Only two studies included in this review were conducted in the USA, and national or other large-scale surveys are needed to comprehensively assess general medical clinicians' attitudes toward individuals with SMI in the USA. Qualitative research should be conducted to gain in-depth understanding of general medical clinicians' perceptions of consumers with SMI and their views of the challenges in working with this population. Critically, studies are needed to examine whether and how general medical clinicians' attitudes toward persons with SMI are associated with clinical care patterns and somatic health outcomes. Finally, interventions for improving clinician attitudes toward individuals with SMI need to be developed and tested for both current general medical clinicians as well as trainees.

There are three main limitations to this study. The included studies were not directly comparable as they measured clinician attitudes in multiple clinician populations and countries, used different measures to assess those attitudes, and reported outcomes in a variety of ways. Additionally, definitions of SMI may have differed across studies as some measured attitudes in response to vignettes that may have described functional impairment while others used only diagnoses and may have been interpreted as with or without functional impairment. Relevant articles may also have been missed during the search process and through exclusion of studies not published in English. An attempt to minimize this risk was made by searching the reference lists of included articles.

Implications for Behavioral Health

The limited available evidence suggests that general medical clinicians inside and outside the USA appear to have negative attitudes toward consumers with SMI. Nationally representative surveys of US clinicians are needed to comprehensively characterize general medical clinicians' attitudes toward consumers with SMI, and future research should examine the relationship between clinicians' attitudes and delivery of somatic healthcare services for this population. If, as the early research summarized in this review and research in other stigmatized populations suggests, negative attitudes toward people with SMI among general medical clinicians contributes to sub-optimal care delivery for this group, development and evaluation of interventions to modify these attitudes should be conducted.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

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