

# Social stigma during COVID-19: A systematic review

SAGE Open Medicine

Volume 11: 1–20

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DOI: 10.1177/20503121231208273

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## Abstract

**Objectives:** Stigmatization was reported throughout the COVID pandemic for COVID-19 patients and close contacts. The aim of this systematic review was to comprehensively examine the prevalence and impact of stigmatization during COVID-19 pandemic.

**Methods:** English articles were searched using online databases that included PubMed, Scopus, Embase, and Web of Science up to 24 August 2022. A two-step screening and selection process was followed utilizing an inclusion and exclusion criteria and then data was extracted from eligible articles. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses checklist was followed, and the risk of bias was assessed using the Newcastle-Ottawa Scale.

**Results:** Seventy-six studies were eligible for inclusion. Twenty-two studies reported the prevalence of social stigma due to COVID-19 infection with social isolation being the most commonly reported stigma. There were 20 studies that reported the majority of participants experienced stigma due to COVID-19 infection, which was as high as 100% of participants in two studies. Participants in 16 studies reported blaming from others as the second most common type of stigma, with various other types reported such as psychological pressure, verbal violence, avoidance, and labeling. The most common effect of the stigma was anxiety followed by depression, and then reduction of socialization.

**Conclusion:** Findings from the present review have identified that COVID-19-related stigma studies have generally focused on its prevalence, type, and outcome. Greater awareness of this topic may assist with improving public education during pandemics such as COVID-19 as well as access to support services for individuals impacted by stigmatization.

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## Keywords

COVID-19, SARS-CoV-2, stigma, social stigma, public stigma

Date received: 28 April 2023; accepted: 29 September 2023

## Introduction

People who are considered to be a possible source of disease and may constitute a threat to social life in society may be subjected to stigmatization.<sup>1</sup> Consequently, this activity is associated with unfavorable discriminating attitudes, sentiments, and behaviors against persons with specific physical, behavioral, or ethnic characteristics who are considered a risk to society.<sup>2</sup>

Historically, stigma has been related to several infectious diseases, resulting in prejudice against particular patient groups, with harmful repercussions for both people and society.<sup>3,4</sup> During epidemics or pandemics, social anxiety emerges from concern about a disease with an unknown source and potentially lethal consequence, particularly when patient safety procedures such as isolation and quarantine are used to ensure community safety.<sup>5</sup>

It seems to be a cultural tendency to accuse someone of the outbreak. This issue has deteriorated because of unproven claims about the virus. As a result, even individuals who have recovered and have passed their quarantine time may face social stigma. Groups susceptible to social stigma face discrimination in the manner of rejection by those who boycott and disregard them, as well as denial of good medical care and access to social facilities. They are also subjected to physical and verbal assault.<sup>6</sup>

After COVID-19 was announced as a pandemic,<sup>7-9</sup> individuals all over the world readily adopted stigmatizing attitudes and beliefs against COVID-19 patients and their close connections, as well as places, people, and ethnic communities suspected to be the source of the pandemic.<sup>10,11</sup> COVID-19-related stigma results in a wide range of undesirable outcomes, including hesitation to access health care services after testing positive for the COVID-19 infection and severe exacerbations of pre-existing mental health issues.<sup>12</sup>

COVID-19 patients may be charged with not obeying to stay in a safe place or neglecting to take precautions when moving outside.<sup>13</sup> Even if people have not been infected with the virus, they may be stigmatized. Someone with allergies, for instance, who has coughing and sneezing, may be embarrassed in society.<sup>14</sup>

Exploration of the impact of stigma during the COVID pandemic is of great importance in identifying its effects and developing strategies to minimize any harmful effects. The aim of this systematic review was to comprehensively examine the prevalence and impact of stigmatization during COVID-19 pandemic.

## Methods

This systematic review comprehensively explored the social stigma during the COVID-19 pandemic with regard to prevailing literature. To ensure that the outcomes reported were reliable and authentic, this review conforms to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist.

### Data sources

Four online databases were searched including PubMed, Scopus, Embase, and Web of Science for relevant articles published in English until 24 August 2022. Keywords and their combinations were used when searching the databases and are shown below:

- A. “Coronavirus disease 2019” OR “COVID-19” OR “Novel coronavirus” OR “2019-nCoV” OR “SARS-CoV2” OR “Severe acute respiratory syndrome coronavirus 2” OR “SARS-CoV-2” [Title/Abstract]
- B. “Stigma” OR “Social stigma” OR “Public stigma” [Title/Abstract]
- C. [A] and [B]

### Study selection

A two-step screening and selection process was used to identify eligible articles. Initially, seven researchers assessed titles and abstracts and cultivated appropriate articles for the second and more diligent step. This second step involved full-text screening which was carried out by another five researchers. Studies were eligible for inclusion in our investigation if they were original and descriptive articles that were written in English language and published in a peer-reviewed journal related to stigma/social stigma during COVID-19. Exclusion of studies occurred for any systematic review publications, non-human research studies, investigations lacking published data, studies including abstracts without available full text, duplicated articles, case series, case reports, conference abstracts, letters to editors, preprints, and opinions.

### Data extraction

Data extraction was performed for the studies that met the eligibility criteria. Five researchers were responsible for the

extraction of data from the full texts. Another researcher was responsible for checking the eligibility of the included papers (i.e., possible duplications of papers) and the accuracy of extracted data. Data/information extracted included ID, reference number, and country of origin of the publications, articles type of social stigma, prevalence of social stigma, outcome of social stigma, and other important findings relevant to the research topic.

### Quality assessment and bias risk evaluation

We utilized Newcastle-Ottawa Scale (NOS)<sup>15</sup> to evaluate the bias risk of the included studies. The criterion of this numerical tool is divided into three sections that include selection, comparability, and exposure/outcome. Maximum values of 4, 2, and 3 are allocated to these sections respectively. Studies are graded one point each for all items except for comparability which has the potential to score up to two points, with the minimum and maximum possible scores of 0 and 9. Studies which are rated 0–2 are considered poor quality, 3–5 are fair quality, and 6–9 are considered good/high quality. Table 1 shows ratings for individual studies by this tool.

## Results

### Description of reviewed studies

The reviewed studies were published between 2020 and June 2023, and included a total of 76 studies (Figure 1). Of these studies, 73 included both male and female subjects, while two studies exclusively included male subjects, and one study did not report. The sample size for all studies combined was 1,988,008 individuals, with data collected from both male and female participants. The findings of the studies are presented in Table 2.

### Prevalence

Out of the 37 studies that reported on the prevalence of social stigma related to COVID-19 infection, 20 studies found that the majority of participants experienced stigmatization<sup>16–20,24,26,27,29,37,41,42,44–46,51,70,83,84,86–88,91</sup>; In two studies conducted in China (28 participants) and Saudi Arabia (847 participants), the prevalence of social isolation and labeling reached 100%.<sup>19,24</sup> In another study conducted in India with 91 participants, 98% of participants reported experiencing self-stigma, rejection, and social isolation.<sup>37</sup> The remaining 17 studies reported a prevalence ranging from 3.1% to 44.56%,<sup>33,36,39,43,47,48,57,63,67,68,72,74,76,77,79,84,89</sup> the lowest prevalence of 3.1% was associated with social isolation and structural stigma and was found in a study conducted in the USA with 1366 participants.

The stigmas experienced by patients of COVID-19 in the present study were classified into three categories: personal, interpersonal, and organizational stigmas.

**Personal stigmas.** The personal stigmas identified through the literature review included attitudinal stigma, self-stigma, psychological pressure (Depression, anxiety, and symptoms of post-traumatic stress disorder), psycho-emotional stigma, internalized shame, lack of financial security, and shame.

**Interpersonal or social stigmas.** In the interpersonal domain, the following stigmas were identified: labeling, social isolation, disgrace, bullying, verbal violence, blaming, avoidance, physical violence, social rejection or avoidance, discrimination, and secondary discrimination (as presented in Table 2).

**Organizational stigmas.** Finally, at the organizational level, the study identified denial of services and discrimination in medical settings as forms of stigma.

The most important stigmas were the interpersonal or social stigmas. The most common was social isolation.<sup>16,17,19–21,33–35,37,39,41,42,44,47,48,53,56,57,60,73,76,88</sup> In 16 studies blaming from others was the second most common social stigma reported due to being infected with COVID-19.<sup>22,23,39,40,46,48,51–55,60,62,72,83,89</sup> In 13 studies, participants experienced rejection from the social environment.<sup>29,33,37,44,46,47,50,56,60,73,76,80,83</sup> Other stigmas experienced by COVID-19 patients included psychological pressure,<sup>62,66–72,75,79,81</sup> verbal violence,<sup>20,50–52,55,56,59,61,77,83</sup> avoidance,<sup>22–24,26,40–42,47,54</sup> labeling,<sup>17,19,21,23,27,29,34,35</sup> attitudinal stigma,<sup>34,45,63,64,74</sup> disgrace,<sup>18,26</sup> discrimination,<sup>54,64</sup> shame,<sup>73,77,80,82–84,86</sup> structural stigma,<sup>43</sup> bullying,<sup>20</sup> denial of service and physical violence.<sup>26,83,84</sup> In eight studies self-stigma due to being infected by SARS-CoV-2 was reportedly experienced by participants.<sup>29,37,42,44,46,53,54,57</sup>

Negative consequences were reportedly experienced by COVID-19 patients with anxiety being the most common,<sup>18,19,23,27,40,43,49,53,58,62,69,86,91</sup> followed by depression,<sup>18,23,32,43,49,53,58,62,69,91</sup> reduction of socialization,<sup>22,37,39,45–47,66,80</sup> fear,<sup>31,45,58,66,76,87,89</sup> distress,<sup>19,52,63,75</sup> anger,<sup>40,50,58,76</sup> mental health disorders,<sup>19,47,58,90</sup> secondary traumatic stress,<sup>30,49</sup> non-disclosure of COVID-19,<sup>35,56</sup> reluctance to test/seek care,<sup>38,47</sup> loss of financial support,<sup>36</sup> loss of accommodation,<sup>46</sup> helplessness,<sup>40</sup> loneliness,<sup>40</sup> burnout,<sup>30</sup> less happiness,<sup>27</sup> insomnia,<sup>27</sup> losing business,<sup>29</sup> changed interpersonal relation,<sup>29</sup> shame,<sup>73</sup> negative self-image,<sup>57</sup> somatic symptoms,<sup>49</sup> and affects mobility behavior.<sup>78</sup>

In the present study, the majority of information was obtained through questionnaires, and studies reporting a prevalence of social stigma higher than 50% were mostly collected through questionnaires. This suggests that self-report questionnaires may have advantages over interviews and focus groups, as participants are more likely to report their experiences truthfully. Self-report questionnaires allow participants to answer anonymously, which may help reduce social desirability bias and encourage more honest responses.

**Table 1.** Risk of bias for the included studies.

Reference	Selection (out of 4)	Comparability (out of 2)	Exposure/ outcome (out of 3)	Total (out of 9)
16	***	**	***	8
17	****	**	***	9
18	**	**	***	7
19	**	**	**	6
20	****	**	**	8
21	***	*	*	5
22	****	*	**	7
23	****	**	***	9
24	****	**	***	9
25	***	**	***	8
26	***	*	*	5
27	**	**	***	7
28	*	**	***	6
29	***	**	***	8
30	****	**	***	9
31	***	*	*	5
32	****	**	**	8
33	**	**	**	6
34	****	**	***	9
35	***	*	*	5
36	****	**	**	8
37	**	**	***	7
38	****	**	***	9
39	****	**	***	9
40	**	**	**	6
41	***	**	***	8
42	**	**	***	7
43	****	**	***	9
44	****	*	**	7
45	***	**	***	8
46	***	*	*	5
47	**	**	***	7
48	***	**	***	8
49	*	**	***	6
50	****	**	***	9
51	***	*	*	5
52	***	**	***	8
53	**	**	***	7
54	****	**	***	9
55	***	**	***	8
56	****	*	**	7
57	***	**	***	8
58	**	**	***	7
59	****	**	***	9
60	***	*	*	5
61	***	**	***	8
62	****	*	**	7
63	****	**	***	9
64	*	**	***	6
65	**	**	***	7
66	***	*	**	6
67	****	**	***	9
68	***	**	***	8

(Continued)

**Table 1.** (Continued)

Reference	Selection (out of 4)	Comparability (out of 2)	Exposure/ outcome (out of 3)	Total (out of 9)
69	*	**	***	6
70	****	**	**	8
71	***	*	*	5
72	****	**	***	9
73	***	**	***	8
74	**	**	**	6
75	****	**	**	8
76	****	**	***	9
77	****	**	***	9
78	***	**	***	8
79	**	**	***	7
80	****	**	***	9
81	****	**	**	8
82	**	**	***	7
83	****	**	**	8
84	**	**	***	7
85	**	**	**	6
86	****	**	**	8
87	**	**	***	7
88	**	**	**	6
89	**	**	**	6
90	****	**	***	9
91	**	**	**	6

Note. Good quality: 3 or 4 stars in selection domain AND 1 or 2 stars in comparability domain AND 2 or 3 stars in exposure/outcome domain; Fair quality: 2 stars in selection domain AND 1 or 2 stars in comparability domain AND 2 or 3 stars in exposure/outcome domain; Poor quality: 0 or 1 star in selection domain OR 0 stars in comparability domain OR 0 or 1 stars in exposure/outcome domain.

## Discussion

The purpose of this systematic review was to explore the social stigma surrounding the COVID-19 infection. There were 76 studies included which represented 37 countries worldwide. Most of the studies were conducted in eastern countries (Middle East and East Asia). The most common method used to collect data was via questionnaires. A relatively even split of sexes was represented (52.16% females and 47.84% males) with a mean age of 36.74 years. Prevalence of social stigma, the types of social stigma, the outcomes of social stigma, and other important findings were examined.

## Prevalence

Among the top 10 countries with the highest prevalence of stigma, the majority were underdeveloped, with over 50% of the population experiencing stigma. However, the reported prevalence of stigma varied significantly between studies, even within the same country or among different nations. Possible reasons for this variability include a lack of standardized COVID-19 stigma questionnaires, limited access to medical services, and a shortage of accurate information about the disease in underdeveloped countries.

**Table 2.** Description of the findings reported in eligible studies.

Reference	Country	Population (n=) Female (%)Male (%)	Mean age ± SD	Social stigma assessment methods	Time of the COVID-19 pandemic	Prevalence of social stigma	Type of social stigma	The outcome of social stigma associated with COVID-19	Other findings
16	Jordan	777 Female (58.5) Male (41.5)	34.5 ± 8.8	Self-administered questionnaire	May to July, 2021	50%	Social isolation	NA	Hearing news all time, smoking, and having children served as predictors of stigma toward healthcare providers (HCPs).
17	Jordan	1655 Female (63.8) Male (33.2)	29.5 ± 7.7	Self-administered questionnaire	June to August, 2020	64%	Labeling, social isolation	NA	Income, living area, and downloaded applications to trace COVID-19 cases acted as potential predictors of stigma.
18	Nepal	213 Female (50.2) Male (49.8)	29.90 ± 6.43	Structured Google form	January 10 to February 6, 2021	57%	Disgrace	Anxiety and depression	healthcare workers (HCWs) working as frontline workers had significant odds of stigma compared to those not working in frontline
19	Ghana	28 Female (25) Male (75)	20–59	Personal interviews and focus group	March 30 to April 30, 2020	100%	Social isolation, labeling	Psychological distress and mental health disorders (anxious, confusion, restless, anger, apathy)	The infection can contribute to mild to severe mental health
20	Jordan	397 Female (70) Male (30)	30.1 ± 9.82	Questionnaire	May to June, 2020	64.3%	Bullying, verbal violence	NA	Most people assumed that patients with COVID-19 are getting bullied.
21	Saudi Arabia	15 Female (47) Male (53)	Aged between 25–55	Interview	2020	NA	Social isolation, labeling	NA	A positive association between social stigma and COVID-19. No significant difference between male and female in terms of stigma incident
22	Saudi Arabia	226 Female (62.6) Male (37.4)	NA	Questionnaire	N/A	NA	Blaming, avoidance	Social avoidance	Discontinued workgroups are more affected by communication impairments, social avoidance, and stigma, less emotional and personal deprivation
23	Saudi Arabia	174 Male (35.4) Male (35.4)	31.58 ± 10.2	Interview	July to December, 2020	NA	Blaming, avoidance	Depression, anxiety	Participants' stigma scores were significantly associated with higher scores on depression and anxiety
24	Saudi Arabia	847 Female (79) Male (21)	Over 18 years	Questionnaire	May 2020	100%	Social isolation, labeling, avoidance	NA	Significant association existed between stigma, and older age groups, being married and lower levels of education.
25	Indonesia	322 Female (69.9) Male (30.4)	27.2 ± 8.9	NA	NA	NA	NA	NA	Stigma since the COVID-19 pandemic outbreak was influenced by demographic, knowledge and behavior factors, while the attitude variable in this study did not affect the occurrence of stigma, knowledge aspect had a positive relationship with stigma, behavior aspect indicated a negative relationship.

(Continued)

Table 2. (Continued)

Reference	Country	Population (n=) Female (%)Male (%)	Mean age ± SD	Social stigma assessment methods	Time of the COVID-19 pandemic	Prevalence of social stigma	Type of social stigma	The outcome of social stigma associated with COVID-19	Other findings
26	Burkina Faso, Ethiopia, and Nigeria	900 Female (58.67) Male (41.33)	39.77 ± 10.79	Questionnaire	—	73.7%	Social avoidance or rejection: 46%, denial of services: 7.22%, physical violence: 4.78, no acknowledgment: 43.33%	NA	Perceived stigma had not significant association with correct perceptions toward COVID-19 among healthcare providers
27	Ghana	45 Female (35.6) Male (64.4)	37.7 ± 16.9	Interview	March 2020 to Feb 2021	NA	Labeling	Weakened individuals' health, happiness, morale self-confidence, frustration, anxiety disorders and insomnia	—
28	Iran	312 Female (74) Male (26)	23.53 ± 6.46	Questionnaire	April to June, 2020	NA	NA	NA	Positive association was detected between stress and stigma. Mental health can act as a predictor of stigma
29	India	311 Female (20) Male (80)	NA	Questionnaire	May 15 to June 30, year	84.5%	Self-stigma, labeling, rejection, discrimination	Changed interpersonal relations, losing business and age.	Significant association between stigma and age. Those aged 46–60 years, self-employed individuals, those with income of 10–20 thousand per month, those living in slums had the highest incidence of stigma
30	Italy	174 Female (84.5) Male (15.5)	NA	Questionnaire	NA	NA	NA	Burnout, secondary traumatic stress	Perceived stigma had negative association with compassion satisfaction and positive association with burnout and secondary traumatic stress. Stigma and identification interact with each other
31	Colombia	1687 Female (59) Male (41)	36.3 ± 12.5	Questionnaire	NA	NA	NA	Fear	Stigmatization was significantly higher in the general population relative to health workers. Significant associations were found between most of questions from the stigma questionnaire and high fear of the virus
32	Congo	1267 Female (40.9) Male (59.1)	32 ± 10.1	Questionnaire	March to May, 2020	N/A	N/A	Depression	Stigmatization related to COVID-19 served as a strong predictor of depression

(Continued)



Table 2. (Continued)

Reference	Country	Population (n=) Female (%)Male (%)	Mean age ± SD	Social stigma assessment methods	Time of the COVID-19 pandemic	Prevalence of social stigma	Type of social stigma	The outcome of social stigma associated with COVID-19	Other findings
33	India	303 Female (42.2) Male (57.8)	36.5 ± 14	Questionnaire	December 1, 2020 to June 21, 2021	34%	Rejection, social isolation	NA	Individuals with low economy and education level were more worried regarding rejoining the society after the isolation. Individuals with low economy level and lower education level were more worried about discrimination toward their family Patients, their family, and healthy individuals viewed COVID-19 patients with stigma
34	China	186 Female (64) Male (36)	36 (26–47)	questionnaire	August 2021	NA	Attitudinal	NA	Public misconception and fear hindered disclosure
35	Malaysia	12 Female (50) Male (50)	36.5 ± 29	telephone interview	April and June 2020	NA	Social isolation, labeling	Non-disclosure of medical history	
36	Kenya	311 teachers Female (56) Male (44) 19 ALWH Female (57.89) Male (42.11)	15	telephone survey	June and November 2020	18% (teachers)	Labeling, social isolation	Loss of social or financial support	No HIV-positive adolescents reported losing social or financial support owing to COVID-19
37	India	91 Female (31.9) Male (68.1)	30–49	Questionnaire	April 15 to June 1, 2020	98%	Self-stigma, rejection, social isolation	Reduction of socialization	Enacted stigma was more prevalent among men and individuals with advanced education
38	USA	845 Female (41.4) Male (58.6)	40.15 ± 11.67	Online survey	April 2020	NA	NA	Reluctance to seek testing for COVID-19	Resistance to COVID testing among individuals with COVID-19 stigma and stereotypes anticipation
39	USA	30 Female (70) Male (30)	21–29	Online video interview	June to August, 2020	26.7%	Social isolation, blaming	Limited access to services and social isolation	Older people were more stigmatized
40	India	12 Female (50) Male (50)	NA	Telephone interviews	May and July 2020	NA	Blaming, avoidance	Anger, anxiety, humiliation, helplessness, loneliness	Other stigma manifestations were physical violence, unemployment, and social exclusion
41	USA	498 Female (35.94) Male (63.65)	25–34	Online survey	August 2020	65.46%	Social isolation, avoidance	NA	Men, social media users, Hispanics, Blacks, college or higher-degree holders endorsed stigma more
42	India	206 Female (46.1) Male (53.9)	36.08 ± 13.12	Online survey	May to June, 2021	20 % from family, 31.1 % self-stigma, 50 % from society	Self-stigma, avoidance, social isolation	NA	PTSD sufferers reported greater anxiety, depression, stigma, fatigue, and cognitive difficulties
43	USA	1366 Female (41.2) Male (58.7)	N/A	Online survey	April 2020	3.1%	Social isolation, structural	Anxiety, depression	Most individuals linked COVID-19 stigma with Asian race and ethnicity

(Continued)

Table 2. (Continued)

Reference	Country	Population (n=) Female (%)Male (%)	Mean age $\pm$ SD	Social stigma assessment methods	Time of the COVID-19 pandemic	Prevalence of social stigma	Type of social stigma	The outcome of social stigma associated with COVID-19	Other findings
44	Lebanon	405 Female (79.8) Male (20.2)	28.38 $\pm$ 12.02	Online survey	December 2020 to January, 2021	65.9%	Self-stigma, Social isolation, rejection	NA	Anxiety, fear, having COVID-19 or a family member with the condition mediated the knowledge-disease association
45	Bangladesh	1056 Female (49.9) Male (50.1)	35.75 $\pm$ 12.18	Online survey	May 2020	90.8%	Attitudinal	Fear and denial of interaction with patients	Education, marital status, risk views on COVID-19 influenced stigmatized attitudes
46	India	120 Female (47.5) Male (52.5)	29.2 $\pm$ 6.65	Questionnaires	October 2020	56.6%	Self-stigma, rejection, blaming	Loss of accommodation, social harassment and isolation	Male gender, age, marital status, education, and occupation increased stigmatization
47	Sri Lanka	80 Female (42.4) Male (57.6)	43 $\pm$ 11.2	Telephone interviews	March to June, 2020	38.8%	Social isolation, rejection, avoidance	Reluctance to seek care, social isolation, severe mental issues	Media was a key driver of stigma.
48	China	5039 Female (58.5) Male (41.5)	33.0 $\pm$ 12.5	Questionnaires	March 2020	5.1% in patients over 50, 1.2% in patients under 20	Social isolation, blaming	NA	Stigmatized behaviors were associated with living in high case areas, health illiteracy, and ethnic minority status
49	Korea	107 Female (47.7) Male (52.3)	NA	Retrospective observational study	5 March to 8 April, 2020	NA	Social isolation, avoidance, rejection	Depression, anxiety, somatic symptoms and possible PTSD	The prevalence of more-than-moderate depression was 24.3%, more-than-moderate anxiety was 14.9%, more-than-moderate somatic symptoms was 36.5% and possible PTSD was 5.6% of total population
50	Korea	600 Female (50) Male (50)	NA	Online survey w	19 February to 29 February 2021	N/A	Verbal violence, rejection	Anger	In 20–29 years old participants anticipated stigma increased their compliance with COVID-19 prevention guidelines
51	Pakistan	134 Male (40.3) Female (59.7)	18–60	An interview based, pre-tested, semi-constructed questionnaire	November 2020 to January 2021	51.5%	Verbal violence, blaming	NA	69.4% of healthcare workers knew of other people who faced similar stigmatization due to their exposure to COVID-19
52	Japan	429 Female (53.2) Male (46.8)	mean age 55, 40–67	Questionnaire	14 June 2020 to 5 July 2020, 15 October 2020 and 25 October 2020	NA	Verbal violence, blame	NA	People with higher community social capital reported lower stigmatization
53	Indonesia	1385 Male (25.5) Female (74.5)	NA	Online survey questionnaire	NA	NA	Self-stigma, social isolation, blame	depressive, anxiety, and stress symptoms	Controlling demographics factors, clear self-stigma increased the risk for depression

(Continued)



**Table 2.** (Continued)

Reference	Country	Population (n=) Female (%)Male (%)	Mean age ± SD	Social stigma assessment methods	Time of the COVID-19 pandemic	Prevalence of social stigma	Type of social stigma	The outcome of social stigma associated with COVID-19	Other findings
54	China	13,994 Male (55.4) Female (44.6)	Age 30.4 ± 9.6	Questionnaires	NA	NA	Self-stigma, avoidance, blame, and secondary discrimination	NA	Obtaining COVID-19-related information from social media (91.3%) and newspaper or television (77.1%). 61.0% of them found information from newspapers or television most reliable
55	China	122 Male (59.8) Female (40.2)	≤ 50years old or > 50years old	Wilcoxon signed-ranks test (nonparametric test)	From February 27th to March 12th, 2020	NA	Verbal violation, blame	NA	Age is an independent factor that affects the perceived stigma level of COVID-19 patients. Patients who were unmarried and severely ill have a higher level of perceived stigma
56	Finland	64 Male (50) Female (50)	Over the age of 12, youth ages 13 to 17 and adults over the age of 18.	Interviews	between April and May 2020	NA	Verbal violation, rejection, social isolation, self-stigma	Reluctant to disclose COVID-19	NA
57	Egyptian	509 Females (69.4) Male (30.6)	mean age: 41.5 ± 10.2	Anonymous online questionnaire	7 to 21 June 2020	40.6%	Self-stigma, social isolation	Negative self-image	Overall COVID-19-related stigma score was higher in participants with lower qualifications, and in those working in a quarantine hospital
58	Indonesian	2,156 Male 700(32.5) Female 1456 (67.5)	age 20–54years	Questionnaire electronic form	December 2020 –August 2021	NA	Social isolation	Anxiety, fear, depression, mental health crisis	Results of the inferential analysis showed that all P < 0.05 which indicated that psychological status and social stigma had a significant relationship with anxiety, fear, depression, and mental health crisis in nurses
59	Iraq, Jordan, Egypt, Saudi Arabia, Indonesia, Philippines, and Kuwait	1726 Male (44.3) Female (55.2)	20 and above	Self-administered online survey	from June–July 2020	NA	Verbal violation	NA	Statistical significance between COVID-19 stigma and demographic variables were found in all aspect of the S19-HCPs
60	Netherlands	908 Male (39) Female (61)	13.2 ± 1.27	Questionnaire	March 17 to April 20, 2020	NA	Social isolation, blame, rejection	Anger	Sympathy and helping determinants were rated significantly higher than the anger and cognitive attributions determinants.
61	Italy	260 Female (52.7) Male (47.3)	46.67	Questionnaire	17 March to 2 April, year	NA	Verbal violence	NA	Stigma may influence worker compliance and can guide management communication strategies relating to pandemic risk for HCWs
62	India	150 Male (64) Female (36)	NA	Questionnaire	N/A	NA	Psychological pressure, blaming	stress, anxiety, depression	N/A

(Continued)

Table 2. (Continued)

Reference	Country	Population (n=) Female (%)Male (%)	Mean age ± SD	Social stigma assessment methods	Time of the COVID-19 pandemic	Prevalence of social stigma	Type of social stigma	The outcome of social stigma associated with COVID-19	Other findings
63	UK	2006 Female (73.4) Male (68.6)	16 and above	Questionnaire	10–13 February, 2020	26.1%	Attitudinal	stress	Relationship between stigmatizing attitude, having a dependent child, lower education, chronic illness and younger age NA
64	Iran	176 Female (50), Male (50)	Majority were above 60 years of age (62.5%)	Questionnaire	March and April 2020	NA	Discrimination from medical settings	NA	NA
65	Russia	1800 Female (81.05) Male (18.95)	42 ± 12 years	Questionnaire	March 30 to April 5 and May 4 to May 10, 2020	NA	Attitudinal	NA	The increase in stigmatizing attitudes of medical staff was mostly related to their fear of their own lives NA
66	Brazil	92 Male (100)	between 29 and 39 years old	Interview	May to August 2020	NA	Psycho-emotional, social interactions, labeling	Fear, isolation	NA
67	Turkey	634 Female (68) Male (32)	35.89 ± 8.63 years	Questionnaire	April 16 to May 16, 2020	28%	Psychological	NA	Prevalence of moderate and severe depression in health care workers: 36%, prevalence of anxiety: 35%, prevalence of stress: 22% NA
68	USA and Canada	3551 Female (42) Male (58)	54 ± 15 years	Questionnaire	May 6–19, 2020	33%	Psychological	NA	NA
69	Turkey	452 Female (66.2) Male (33.8)	35.8 ± 8.9	Questionnaire	20 May 2020 and 10 June 2020	NA	Psychological	Depression, anxiety	Positive and significant correlation between stigma score, hospital depression and anxiety scale. Negative correlation between perceived stigma score and psychological well-being score, problem-oriented coping, emotion-focused coping and quality of life
70	Indonesia	547 Female (49.73) Male (50.27)	20 years or older	Questionnaire	October to December 2020	70.2%	Psychological	NA	Moderate stigma is more related to quality of life and mental health than low stigma. Women experience less stigma associated with mental health than men. Quality of life and mental health are affected by stigma, gender and occupation. Being female, working at home or not working due to covid-19, previous mental health diagnosis, history of chronic illness, current or former smoking were associated with higher stigma scores. Older age was associated with lower stigma scores. NA
71	USA	632 Female (71) Male (29)	51	Questionnaire	April 17, 2020, and April 18, 2021	NA	Psychological	NA	NA
72	India	122 Male (100)	33.5 ± 8.9 years	Questionnaire	22 October 20 to 21 November 20	19%	Psychological	NA	NA

(Continued)

Table 2. (Continued)

Reference	Country	Population (n=) Female (%)Male (%)	Mean age $\pm$ SD	Social stigma assessment methods	Time of the COVID-19 pandemic	Prevalence of social stigma	Type of social stigma	The outcome of social stigma associated with COVID-19	Other findings
73	China	154 COVID-19 survivors Male (43.5) Female (56.5) 194 healthy Male (20.6) Female (79.4)	COVID-19 survivors: 42.2 $\pm$ 13.7  Healthy: 35.7 $\pm$ 9	Questionnaire	May 27 and September 4, 2020	NA	Social rejection, internalized shame, lack of financial security, social isolation	Shame	Having infected family members, being married, economic loss during the epidemic, depressive symptoms were positively related to higher stigma
74	Indonesia	288 Female (65.3) Male (34.7)	$\leq$ 30 years old or > 30 years old	Questionnaire	March 6 to March 25, 2020	21.9%	Attitudinal	NA	Physicians perceived less stigma associated with COVID-19 compared to other healthcare workers Prevalence of post-traumatic stress was higher in women than in men.
75	Iran	894 Female (71.4) Male (28.6)	30 years and older	Questionnaire	March 20 to April 3, 2020	NA	Psychological	stress	
76	China	1212 Female (73.27) Male (26.73)	18 years or older	Questionnaire	7 May to 25 May in 2020	31.8%	Social isolation, blaming, rejection	Fear, anger	Older age, married, lower education, having mental problems are associated with higher general stigma scores.
77	China	1920 Female (56.93) Male (43.07)	20.51 $\pm$ 4.51	Questionnaire	October to December, 2020	44.58%	Shame, verbal violence	NA	Knowledge about COVID-19 was associated with COVID-19-related stigma
78	Japanese	N/A	NA	Data from the Google COVID-19 Community Mobility Reports	January 3rd to February 6th, 2020.	NA	Fear	Affects mobility behavior	The study modifies the stigma model for mobility behavior during COVID-19 by incorporating the impact of the Go to travel campaign
79	India	376 Female 163 (43) Male 213 (57)	20–60 years	Questionnaire-based survey, semi-structured interviews	April and November 2020	34 %	Psychological	NA	Three distinct forms of negative social experiences during the pandemic: 3.1. Neighborhood tensions around restrictions of mobility, experiences of social distancing, harassment There was no significant difference in experienced stigma regarding gender, education, occupational status or residual symptoms
80	Germany	61 Male (58) Female (42)	51 $\pm$ 14.6	Questionnaires	NA	NA	Shame and rejection	Social rejection, internalized shame, social isolation, financial insecurity	

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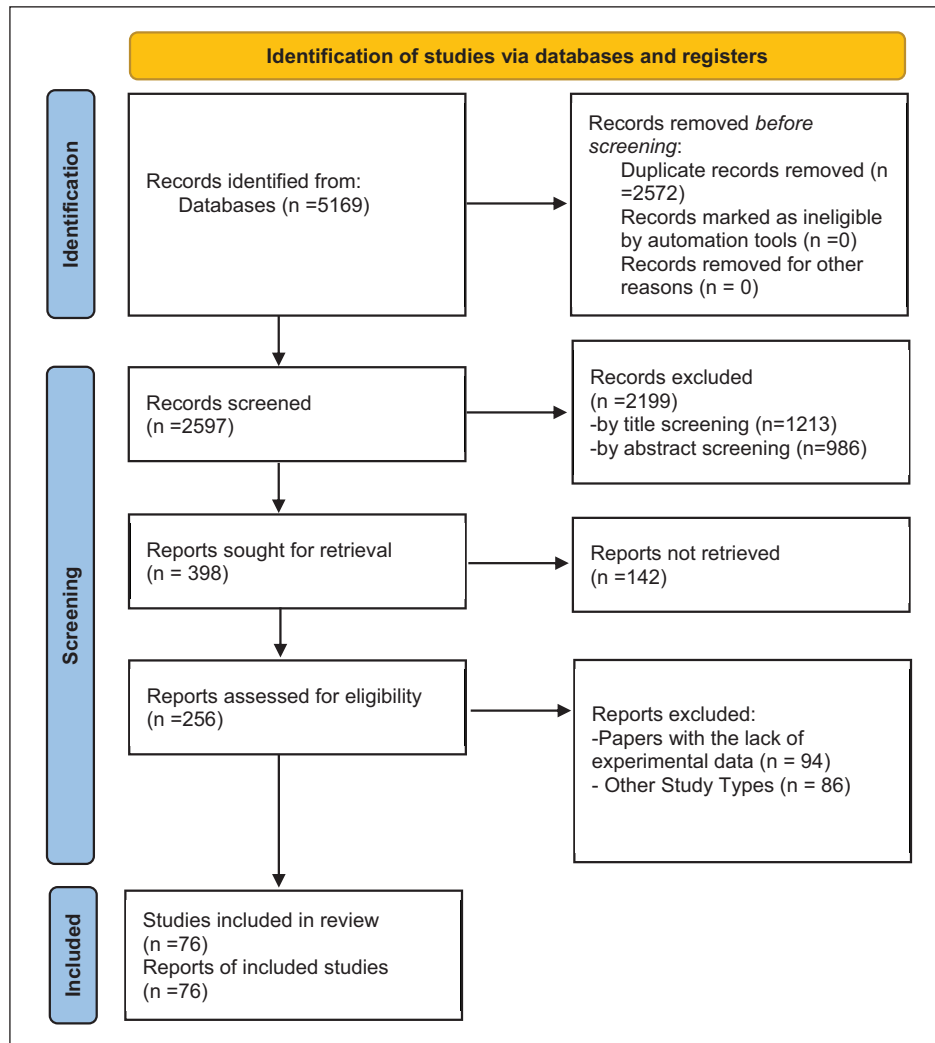
Table 2. (Continued)

Reference	Country	Population (n=) Female (%)Male (%)	Mean age ± SD	Social stigma assessment methods	Time of the COVID-19 pandemic	Prevalence of social stigma	Type of social stigma	The outcome of social stigma associated with COVID-19	Other findings
81	UK	966 Female (84.6) Male (15)	48.3 ± 10.7	Questionnaire	NA	95.4% (n=847), enacted stigma was 62.7% (n=557), internalized stigma was 86.4% (n=767), and anticipated stigma 90.8% (n=806)	Psychological	NA	Prevalence of stigma was higher in respondents with a formal diagnosis of long COVID (97.5%; n=429) than in those without (93.2%; n=413).
82	Egyptian	565 Male 166 (29.4%) Female 399(70.6%)	30-40 >	Questionnaire	NA	94.7%	Shame	NA	Significantly high impact stigma scores were detected among those aged < 30 years, females, workers primarily in sites susceptible for contracting COVID-19 infection, those had severe worry from contracting infection at work, and high internalized shame scale.
83	India	COVID-19 stigma:303, Community COVID-19 stigma: 1976	18-60 >	Questionnaire	September 2020 to January 2021	51.3%	social exclusion, stereotyping, insults, blame or threat, verbal abuse or gossip, physical abuse, denial of housing, medicine, dismissal from (job, and refusal from stores and restaurants)	N/A	Risk factors of stigmatizing attitude toward COVID-19 among individuals from the community: residents of high prevalent COVID-19 zone, staying in rural areas, age: 18-30 years, male, illiterate, living in Maharashtra risk factors of stigmatizing attitude toward COVID-19 among individuals recovered from the infection: age: 6-15 years, those who had poor knowledge about the infection transmission, and belonged to Delhi Occupation, ethnicity, and low educational level predicted COVID-19 perceived stigma. The CPSS-22 showed excellent reliability
84	Qatar	576 Female (29.5) Male (70.5)	median age 38 ± 31-46	Questionnaire	June to August 2021	26%	Shame, disapproval, or disgrace that results in the rejection of an individual, discrimination against them, and the exclusion from participating in the different areas	N/A	

(Continued)

Table 2. (Continued)

Reference	Country	Population (n=) Female (%)Male (%)	Mean age ± SD	Social stigma assessment methods	Time of the COVID-19 pandemic	Prevalence of social stigma	Type of social stigma	The outcome of social stigma associated with COVID-19	Other findings
85	Nigeria	332 Female (38.9) Male (61.1)	33.35 ± 7.10	Questionnaire	—	N/A	N/A	N/A	Respondents with a higher perception of vulnerability to diseases reported higher COVID-19 risk and perception of COVID-19-related stigma. Gender, age, and education impacted COVID-19 risk and perception of COVID-19-related stigma
86	Iran	1064 Female (49.9) Male (51.1)	38 [30.75, 52]	questionnaire	27 to 30 September 2020	86.8%	embarrassment and shame to the patient and his/her family, fear of being fired, identification and penalized	N/A	None of patients showed higher level of stigma. Stigma was found less among those with high education level.
87	Egypt	150 Female (54) Male (46)	36.9 ± 10.6	questionnaire	February 2021 to April 2021	70%	Depression, anxiety, N/A and symptoms of post-traumatic stress disorder	N/A	Being a woman and nurse were significantly associated with the total perceived COVID-19-related stigma score. COVID-19-related stigma perception had significant association with depression, anxiety, and post-traumatic stress
88	India	420 Female (29.2) Male (70.7)	38.77 ± 11.85	Questionnaire	June 2020 to February 2021	NA	Personalized stigma, social isolation	Fear, anger, anxiety, shame	Urban populations and males faced more stigma and discrimination
89	Germany	4,059 Female (49.5) Male (50.5%)	45.68	Questionnaire	December 16–29, 2020	NA	blame, negative affect, discriminatory inclinations	Blame, deservingsness, lack of sympathy, anger, avoidance, insult, healthcare access restriction	Higher COVID-19 stigma than flu, lower stigma for females, more discrimination and negative emotions among affected respondents
90	Japan	1573 Female (49.8) Male (50.2)	54.5 ± 14.4	Questionnaire	December 2020 to March 2021	16.3%	COVID-19 stigma	negative effect on quality of life, psychological distress	Older age, severity, anxiety, funding hesitancy, and lack of knowledge contributed to COVID-19 stigma
91	Germany, Austria, Switzerland	253 Female (88.5) Male (11.5)	45.49 ± 12.03	Questionnaire	June 2021 and October 2021	NA	enacted stigma, perceived external stigma, disclosure concerns, internalized stigma	stress, depression, anxiety, lower mental health-related quality of life	Social stigma had a stronger impact on mental health than physical health in long COVID



**Figure 1.** PRISMA flow diagram of study retrieval process.

The degree to which disease-related stigma is prevalent varies among communities, and socioeconomic factors at both the individual and community levels impact different types of stigmas in distinct ways.<sup>92</sup> For example, communities with a better understanding of the disease and higher levels of mobilization efforts are less likely to exhibit stigma, while communities with concerns regarding providing aid and care during epidemics are more likely to endorse stigma.<sup>93,94</sup> Additionally, individuals with higher socioeconomic status or education levels experience less stigma, likely due to their greater access to accurate information about the disease. These results are consistent with earlier research demonstrating that individuals from lower social classes experience more stigma compared to those from higher social classes.

For the studies included in the present review there was a higher prevalence of stigma in Asian countries,<sup>16,18,21,29,44,45,51,70,82,83,86</sup> which could be attributed to the Asian origin of the virus, for example, Asians being accused

of spreading the disease. The prevalence of stigma is exacerbated by an excess of news and conflicting messages, particularly during large-scale disasters such as COVID-19.<sup>95–97</sup> In similar studies, the prevalence of infectious diseases such as H1N1, bubonic plague, Asian flu, cholera, Ebola, Zika virus, tuberculosis, SARS, and middle east respiratory syndrome (MERS) has been associated with stigma and discrimination against patients.<sup>98</sup> A recent comparative study reported a higher prevalence of stigma for COVID-19 infection than AIDS/HIV, which has been one of the most stigmatized health conditions worldwide for decades.<sup>54</sup> COVID-19 infected patients and their family members were stigmatized and isolated as being infectious or dangerous to the health of those coming into contact with them. The widespread concern and media coverage of COVID-19 contributed to its high prevalence of stigma, which was fueled by individuals perceiving the disease as a mortal infection, and the lack of treatments for the virus. Misleading news likely caused people to be frightened, but accurate knowledge about the



disease may have reduced the stigma. Education and good communication have the potential to significantly improve the knowledge, attitudes, and behaviors related to infectious diseases, such as Ebola and COVID-19, and reduce infectious disease-related stigma.<sup>99,100</sup>

**Types of stigma.** In previous studies, various types of stigma have been defined for AIDS/HIV disease. For instance, a study that investigated a conceptual model of HIV/AIDS stigma from five African countries identified three types of stigma: received, internal, and associated.<sup>101</sup> Received stigma is a type of stigma directed toward a person living with HIV/AIDS by others. It includes various stigmatizing behaviors such as neglecting, fearing contagion, avoiding, rejecting, labeling, pestering, negating, abusing, and gossiping. Internal stigma is the negative thoughts and behaviors that a person living with HIV has about themselves based on their HIV status. This type of stigma is based on the person's own perceived view of stigma, and can include self-perception, social withdrawal, self-exclusion, and fear of disclosure.<sup>102</sup>

Associated stigma refers to the stigma that arises from a person's association with individuals who have HIV/AIDS, such as having an HIV-positive family member or working with HIV-positive individuals. In the present review, the most reported stigma was social isolation.<sup>16,17,19,21,24,33,35–37,39,41–44,47–49,53,56–58,60,73,76,80,88</sup> Furthermore, in 16 studies<sup>22,23,39,40,46,48,51–55,60,62,76,83,89</sup> participants experienced blaming from others. Additionally, participants in 14 studies reported rejection from social environment.<sup>26,33,37,44,46,47,49,50,56,60,73,76,80,84</sup> Labeling was reported in nine studies,<sup>17,19,21,24,27,29,35,36,66</sup> and avoidance was also reported in 10 studies.<sup>22–24,26,40–42,47,49,54</sup> Denial of service, and violence were reported in two studies,<sup>26,83</sup> disgrace was also claimed in only two studies.<sup>18,84</sup> In another study, discrimination and self-stigma were reported,<sup>29,84,89,91</sup> and verbal violence and bullying in 10 studies.<sup>20,50–52,55,56,59,61,77,83</sup> Attitudinal stigma was reported in eight studies.<sup>34,45,63,65,74,83,84,91</sup> Other related studies also reported psychological distress and decreased resilience during the outbreak of viruses H1N1, H7N9, MERS, and Ebola.<sup>103</sup>

The stigmatization of various diseases has both similarities and differences. While isolation is a common stigma in infectious diseases, different diseases have varying prevalence and types of stigma. For example, tropical infectious diseases with visible symptoms such as scars and deformities have the highest rates of stigmatization and social isolation, while HIV is stigmatized due to its origin and being a sexually transmitted disease. COVID-19 patients also face stigma due to a perceived lack of precautionary measures or social distancing, making them a potential threat to others' health.

The COVID-19 pandemic has resulted in a variety of isolation and social avoidance behaviors toward patients infected with the virus. These behaviors are possibly due to community fears of getting infected since the disease is

highly contagious. Social isolation and other forms of rejection from others were frequently reported and are consistent with previous studies on attitudes toward patients during epidemics and pandemics.<sup>104</sup>

**Outcomes of stigma.** The review findings indicated there were various outcomes experienced by participants, such as anxiety which was the most experienced one,<sup>18,23,27,40,43,49,53,58,62,69,88,91</sup> followed by depression,<sup>18,23,32,43,49,53,58,62,69,91</sup> fear,<sup>31,45,58,66,76,88</sup> anger,<sup>19,40,50,60,76,87,89</sup> mental health disorders,<sup>19,47,49,58,90,91</sup> secondary traumatic stress,<sup>30,53,62,63,76</sup> non-disclosure of COVID-19,<sup>25,35,47,56,80,89</sup> loss of financial support,<sup>36,73,80</sup> burnout,<sup>30</sup> less happiness,<sup>27</sup> insomnia,<sup>27</sup> losing business,<sup>29</sup> changed interpersonal relation,<sup>29,66</sup> psychological pressure,<sup>62,67,68,70–72,75,90</sup> discrimination from medical settings,<sup>54,64,89</sup> psycho-emotional,<sup>66</sup> internalized shame.<sup>73,77,80</sup>

Stigma can cause unpleasant feelings such as anxiety and depression, which can threaten mental health. In turn, mental health can also act as a predictor of stigma. The consequences of stigma can be serious, as evidenced by patients who were reluctant to disclose their symptoms and seek medical attention during the early stages of COVID-19 due to social stigma. This non-disclosure can lead to a more rapid spread of the disease.<sup>105</sup> Evidence in other studies suggests that stigma has caused psychological distress and post-traumatic stress disorder (PTSD) in infected patients and healthcare workers during outbreaks of SARS, H1N1, MERS, Ebola, and COVID-19.<sup>106–109</sup> Similar findings have been reported in studies on other diseases, such as AIDS and previous SARS epidemics.

In various infectious diseases, including human immunodeficiency virus (HIV), hepatitis C virus (HCV), tuberculosis, and Zika, stigma persists at all levels and impedes effective treatment. This stigma may lead to reduced treatment uptake and under- or non-participation in available treatments.<sup>110</sup> HIV/AIDS has always been stigmatized with negative connotations such as drug abuse, sex work, poverty, or incarceration associated with deviant behavior disapproved by society.<sup>111</sup> In contrast, epidemic-related diseases like SARS and COVID-19 are caused mainly by external factors, which are not considered morally reprehensible. Hence, stigmatization of these infectious diseases is primarily driven by fear of the disease itself, and the perceived threat level will decrease as public awareness of the disease increases.<sup>112,113</sup> It is crucial to improve public awareness of the nature of the disease to reduce fear and anxiety and, subsequently, reduce stigma.<sup>114</sup> Furthermore, people with higher education levels and socioeconomic status may be less likely to stigmatize others, especially in high-income countries.<sup>115</sup>

**Strengths and limitations.** This review provided a broad and representative overview of the COVID-19-related stigma issue. The methods used to find, screen, and select the included studies were rigorous. Additionally, data was extracted via three researchers and the discrepancies were

addressed by a third researcher to ensure the quality of included studies and reduce the risk of bias. However, the results of this review may be subject to limitations related to the selection process of eligible studies. Specifically, studies published in outlets other than the first-tier journals were included in the review. Due to the heterogeneity of the included studies, performing a meta-analysis was not suitable; therefore, we only performed a qualitative synthesis of selected literature.

## Conclusion

This systematic review identified the three most researched targets of COVID-19-related stigma. First, prevalence of social stigma: limited access to medical services, shortage of accurate information about the disease in underdeveloped countries, socioeconomic, and geographical location. Second, types of stigma: social isolation, labeling, rejection from the social environment, blaming from others, denial of service, violence, discrimination, self-stigma, verbal violence, and attitudinal stigma. Third, the outcome of the stigma: anxiety, depression, fear, anger, mental health disorders, secondary traumatic stress, non-disclosure of COVID-19, loss of financial support, burnout, less happiness, insomnia, losing business, changed interpersonal relations, psychological pressure, discrimination from medical settings, psycho-emotional, internalized shame. The stigma associated with COVID-19 is closely related to the quality of life and mental health of individuals, and our findings can inform policymakers to ensure the availability of a safe environment with respectful care and urgent action is needed to tackle COVID-19 at every level, from the personal to the political. It seems that according to the issues raised in this review, it is necessary to deal with the psychosocial discomforts that society is facing during the outbreak of COVID-19. To deal with these feelings, psychological evaluations, and support, including ensuring a cultural approach, and taking into account different needs in society, are necessary. In addition, social support is necessary to reduce the adverse effects of stigma that may lead to further spread of disease and social unrest. It is better to correct health education, social behaviors, and psychological interventions by targeting people as the most effective method to prevent social stigma caused by COVID-19, which is recommended to form specialized teams of medical, social, and behavioral science experts. To update the review, more studies are recommended in the future. Greater awareness of this topic may assist with improving public education during pandemics such as COVID-19 as well as access to support services for individuals impacted by stigmatization.

## Acknowledgements

The present study was conducted in collaboration with Khalkhal University of Medical Sciences, Iranian Institute for Reduction of High Risk Behaviors, Tehran University of Medical Sciences, and the University of Sydney.

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## Availability of data and material

The authors stated that all information provided in this article could be shared.

## Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.



## Ethics approval and consent to participate

Not applicable.

## Consent to publication

Not applicable.

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## Supplemental material

Supplemental material for this article is available online.

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