

**The Psychological and Socio-political Consequences of  
Infectious Diseases; A systematic review**

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**Abstract:**

**Background:** Individuals and societies have evolved behavioral immune systems to avoid disease and infection. These systems promote disease-avoidance behaviors, such as avoiding unfamiliar or potentially contaminating stimuli. These behaviors can manifest as stigma, rejection, and fear towards individuals living in or coming from affected communities, those with underlying illnesses and the elderly population.

**Methods:** To find the literature assessing the psychological and socio-political effects of infectious diseases, an electronic search was conducted through the following databases: PubMed, Google Scholar, Embase and Science Direct. A total of 30,482 articles were initially identified through the systematic search process. After removing duplicates (n = 368), screening based on title and abstract was conducted, resulting in the inclusion of seven publications for full-text screening. Subsequently, after full-text screening, seven publications met the inclusion criteria and were included in this systematic review.

**Conclusion:** Infectious diseases trigger psychological and socio-political shifts, fostering authoritarianism, altering voting behavior, and influencing legislation. Further investigation is crucial to comprehend these mechanisms across varied cultural contexts.

**Keywords:** Infectious diseases, psychological, stress, sociopolitical

## INTRODUCTION:

Infectious diseases have long been a pressing global health concern, with far-reaching psychological and socio-political consequences. These diseases not only pose a direct threat to physical health, but also contribute to significant psychological stress among the affected individuals and communities (Morens & Fauci, 2013). This stress can manifest in various forms, such as anxiety, depression, and fear. One of the pioneers of modern psychiatry, Emil Kraepelin, documented 11 cases of psychiatric disorders during an influenza epidemic in 1890. The disorders manifested in various ways, including depression, a paranoid and hallucinatory syndrome, involuntary movements, cognitive decline, and delirium (Kraepelin, 1890). Recently, the COVID-19 pandemic has demonstrated the wide-ranging psychological impact of infectious outbreaks (Amsalem, et al. 2021).

Furthermore, the implementation of control measures such as quarantine and physical distancing can further intensify these psychological and socio-political consequences. These consequences include increased stigmatization and rejection of individuals from affected communities, as well as discrimination against those with underlying illnesses or at higher risk. Additionally, the psychological fear-related responses to infectious diseases can impede public health efforts and hinder the recovery of survivors. Moreover, previous outbreaks, such as the Ebola virus disease epidemic, have shown that fear-related behaviors and stigmatization can exacerbate the spread of infectious diseases and hinder containment efforts. Overall, infectious diseases have a profound impact on the psychological well-being and socio-political dynamics of individuals and communities. This impact highlights the urgent need for comprehensive and integrated approaches to address the physical, mental, and social consequences of infectious diseases.

Recent studies have highlighted the detrimental effects of infectious diseases on mental health and socio-political dynamics (Morens & Fauci, 2013). These studies have underscored the importance of understanding the psychological and socio-political consequences of infectious diseases, as well as the underlying factors that contribute to their emergence and spread. Furthermore, the interconnectedness of our global society and the ease of travel have added complexity to containing infectious diseases, with implications not only for health but also for economic stability and societal well-being. The COVID-19 pandemic has served as a stark reminder of the psychological and socio-political consequences that infectious diseases can have on individuals and communities. To add, previous studies have demonstrated that infectious outbreaks and subsequent control measures, such as quarantine and physical distancing, can lead to high levels of posttraumatic stress and psychological distress in the general population (Rajkumar, et al. 2022). This study aims to synthesize and analyze existing literature to further understand the psychological and socio-political consequences of infectious diseases.

## METHODS:

### Search Strategy:

We conducted a comprehensive search of relevant literature using various databases, including PubMed, ScienceDirect, Embase and Google Scholar. The study was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page, et al. 2021). We searched for studies that examined the psychological impacts of infectious diseases on individuals and communities, as well as the socio-political consequences of such diseases. The search employed a combination of terms and Boolean operators to ensure inclusivity and accuracy. The search included keywords such as 'Infectious Diseases', 'Psychological', 'Socio-political', 'Consequences', 'Impact', 'Association', and 'Relation'. These were combined with relevant MeSH terms i.e., 'Infectious Diseases/psychology', 'Psychology/', 'Politics/', and 'Socioeconomic Factors/'. The use of Boolean operators (AND, OR) facilitated the integration of these terms to refine search results effectively. This search strategy aimed to identify studies exploring the intersection of infectious diseases with psychological and socio-political dimensions, ensuring a comprehensive coverage of the literature. Truncation and wildcards were deliberately omitted to maintain precision and relevance throughout the systematic review process.

## ELIGIBILITY CRITERIA:

### Inclusion Criteria:

- Studies examining the psychological and socio-political consequences of infectious diseases.
- Research involving human populations across various age groups, genders, ethnicities, and geographical locations.
- Investigations exploring diverse infectious diseases, including but not limited to COVID-19, HIV/AIDS, malaria, etc.
- Studies employing quantitative, qualitative, or mixed-methods research designs.
- Primary research studies published in English.

**Exclusion Criteria:**

- Studies not directly addressing the psychological or socio-political consequences of infectious diseases.
- Research focusing solely on the biological or medical aspects of infectious diseases without considering psychological or socio-political dimensions.
- Animal studies, editorials, letters, commentaries, and review articles lacking original data.
- Literature not available in English.
- Studies lacking relevance to the primary focus of the review.

**DATA EXTRACTION:**

The studies were initially screened for inclusion based on their titles and abstracts, and then their full texts were examined in accordance with the inclusion criteria. Zotero was utilized to detect and eliminate duplicate research. The authors carefully reviewed the complete texts of the articles that satisfied the eligibility requirements. The results were compared side by side, and differences were resolved by agreement.

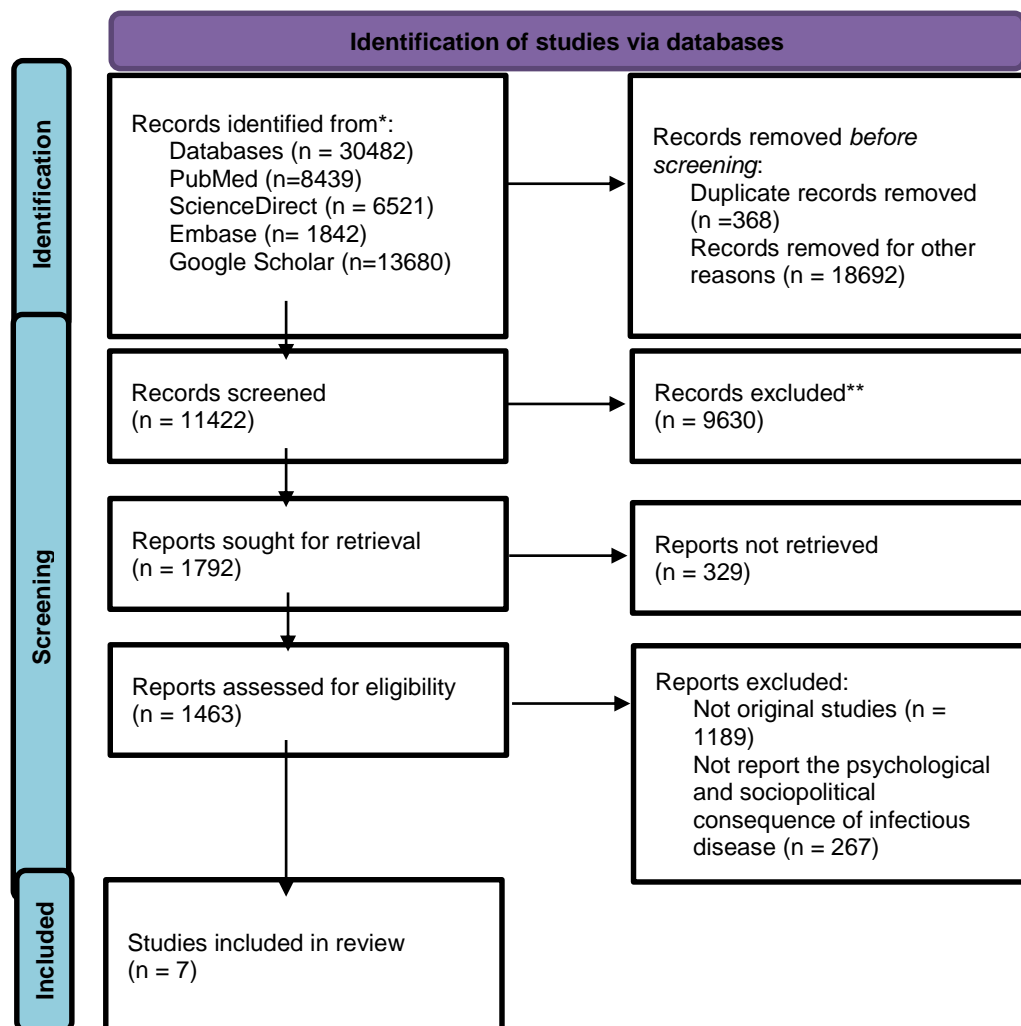


Figure 1: PRISMA flowchart showing the study selection process.

**QUALITY ASSESSMENT:**

Newcastle-Ottawa scale adapted for cross-sectional studies was used for risk of bias assessment in cross-sectional,

comparative studies. Only studies with high and moderate quality were included in this systematic review.

Table 1: Newcastle Ottawa scale of quality assessment adapted for Cross-sectional Studies

STUDY	SELECTION				COMPARABILITY The subjects in different outcome groups are comparable, based on the study design or analysis. Confounding factors are controlled	OUTCOME		QUALITY
	Representativeness of the sample	Sample size	Non-respondents	Ascertainment of the exposure/surveillance tool		Assessment of Outcome	Statistical test	
Zmigrod, et al. (2021)	☆	0	☆	☆	☆	☆	☆	Moderate
Murayama, et al. (2022)	0	0	0	☆☆	☆	☆	☆	Moderate
Chang & Park, (2020)	0	☆	0	☆☆	☆	☆☆	☆	Good
Lyons, et al. (2012)	☆	☆	☆	☆	☆	☆☆	☆	Good
Pergami, , et al. (1993)	☆	☆	0	☆	☆	☆	☆	Moderate
Ji et al. (2017)	0	0	0	☆☆	☆	☆☆	☆	Good
Cheng et al. (2004)	☆	☆	☆	☆☆	0	☆	☆	Good

**RESULTS:**

The study by Zmigrod et al. concludes that there is a robust relationship between regional infectious disease rates and psycho-political preferences for conformity and hierarchical power structures. By shedding light on the links between infection rates and authoritarian attitudes across various geographical levels, the research contributes to a better understanding of how infectious diseases can influence socio-political dynamics and individual behavior (Zmigrod, et al. 2021).

**HIV INFECTION:**

The study by Pergami et al. (1993) explored how HIV infection affected the mental well-being of women, specifically looking at psychiatric issues and psychosocial challenges among asymptomatic HIV-positive women. The study included 57 HIV-positive and 23 HIV-negative women for comparison, further categorized by whether they were intravenous drug users (IVDUs) or heterosexuals without drug use. Results showed that HIV-positive women did not significantly differ from HIV-negative women in terms of past and present psychiatric problems, with some HIV-positive women even showing lower psychological distress levels. Analyzing multiple factors, the study found that alcohol misuse and an external locus of control were significant predictors of psychiatric distress among HIV-positive women. It emphasized the role of personality traits and pre-existing issues in how HIV infection affected women's mental health. The study concluded that HIV status alone was not a major predictor of psychological distress; instead, factors like substance abuse and one's sense of control over their life were crucial in understanding the psychological impact of HIV among women (Pergami, et al. 1993).

Another study that involved a nationwide online survey targeted Australian gay men aged 40 and above, aimed to explore disparities in physical and mental health between HIV-positive and HIV-negative individuals across different age brackets. The survey delved into demographics, health status, psychosocial factors, and experiences of discrimination. Notable findings indicated that HIV-positive men faced economic challenges, social isolation, and poorer mental health, especially among older age cohorts, with heightened rates of depression. The study underscores the necessity for tailored support services and interventions to bolster mental wellness among older gay men living with HIV (Lyons, et al. 2012).

**EBOLA VIRUS DISEASE:**

A descriptive cross-sectional study involved 143 healthcare personnel and 18 survivors, utilizing the Symptoms Checklist 90-items, Revised (SCL-90-R) questionnaire. Data collection occurred pre- and post-contact with Ebola virus. The study revealed widespread psychological symptoms across both groups, particularly notable dimensions like obsession-compulsion, anxiety, hostility, phobic anxiety, and paranoid ideation. Education level correlated with symptom severity, showing lower development among highly educated individuals. Interestingly, Chinese medical team staff exhibited the least psychological symptoms. The study emphasized the imperative of addressing mental health during infectious outbreaks, noting the influence of education level and job role on psychological status. It advocated for psychological support for survivors and healthcare workers, recommending post-outbreak emergency response plans to include mental health professionals for comprehensive readiness. Ultimately, the study underscored the need to consider and manage psychological well-being alongside physical health in combating public health crises like Ebola outbreaks (Ji, et al. 2017).

**COVID-19:**

Murayama et al. (2022) aimed to explore how gender, age, and infectious disease symptoms affected psychological distress in quarantined COVID-19 patients in Japan. They conducted telephone surveys through a mental health welfare center, using the Kessler Screening Scale (K6) to gauge distress levels. Results indicated no significant gender disparity in distress scores, but younger age groups reported higher distress compared to older ones. Patients with fever, headache, and upper respiratory symptoms experienced greater distress, whereas symptoms like fatigue, taste, and smell abnormalities were associated with lower distress. The study recognized limitations like a small set of survey items and exclusive use of the K6 scale. It stressed the importance of considering age, specific symptoms, and study limitations when evaluating psychological distress in quarantined COVID-19 patients, suggesting tailored interventions to address their mental health needs (Murayama, et al. 2022).

Cheng et al. investigated the psychological well-being and negative perceptions among individuals who survived severe acute respiratory syndrome (SARS). The study revealed that roughly 35% of SARS survivors reported 'normal' psychological distress levels, while about 30% experienced 'mild to moderate' distress, and 35% had 'moderate to severe' or 'severe' distress levels. Negative perceptions regarding the impact of SARS were more pronounced during the acute phase compared to the one-month recovery period. Factors such as gender, psychosocial characteristics, and specific concerns related to SARS' impact were identified as contributors to survivors' psychological distress. Overall, the study underscored the significance of considering both psychological distress and negative perceptions in comprehending the mental health outcomes among SARS survivors (Cheng, et al. 2004).

A study carried out in Daegu, Korea reported the occurrence of post-traumatic stress disorder (PTSD) among COVID-19 patients who received treatment and were discharged from a university hospital. The study employed the Post-traumatic Stress Disorder Checklist-5 (PCL-5), which is based on DSM-5 criteria, to assess the presence of PTSD. Among the 64 patients examined, 13 exhibited PCL-5 scores indicative of PTSD, indicating a prevalence rate of 20.3%. Patients in the PTSD group demonstrated notably higher mean PCL-5 scores compared to those in the non-PTSD group, with no significant differences observed in demographic characteristics or duration of hospitalization. The study highlights the importance of recognizing and addressing PTSD among COVID-19 patients during their recovery phase, underscoring the necessity for psychological support and interventions (Chang & Park, 2020).

*Table 3: Summary of the included articles*

First Author, Reference	Year of Publication	Study Title	Study Location	Study Design	Total Number of Subjects	Outcome
Zmigrod et al. (2021)	2021	The Psychological and Socio-Political Consequences of Infectious Diseases: Authoritarianism, Governance, and Nonzoonotic (Human-to-Human) Infection Transmission	UK	Cross-sectional study	258,241 participants	There is a robust relationship between regional infectious disease rates and psychopolitical preferences for conformity and hierarchical power structures.
Murayama et al. (2022)	2022	The Impact of Gender and Age Differences and Infectious Disease Symptoms on Psychological Distress in Quarantined Asymptomatic or Mildly Ill COVID-19 Patients in Japan	Japan	Cross-sectional study	436 participants	The intensity of psychological distress among quarantined individuals infected with COVID-19 is higher among males, among those aged in their teens to thirties, and among those with fever, headache, and symptoms of upper respiratory inflammation than in asymptomatic people.
Chang et al. (2020)	2020	Incidence of Post-Traumatic Stress Disorder after Coronavirus Disease	Korea	Cross-sectional study	64 patients who were diagnosed with COVID-19	The prevalence rate of PTSD was 20.3% in patients with COVID-19 who had been hospitalized, treated and discharged.
Lyons et al. (2012)	2012	Exploring the Psychological Impact of HIV: Health Comparisons of Older Australian HIV-Positive and HIV-Negative Gay Men	Australia	Cross-sectional study	1,029 men aged between 40 and 81 years	Findings from this nationwide survey reveal poorer mental health outcomes for late middle-aged and older gay men living with HIV than those living without HIV.
Pergami et al. (1993)	1993	The Psychosocial Impact of HIV Infection in Women	UK	Cross-sectional study	101 women (71 HIV+ and 30 HIV-)	HIV+ve women did not differ from HIV-ve controls regarding past and current psychiatric morbidity, indeed for some variables they had actually lower levels of psychological distress than HIV -ve women.
Ji et al. (2017)	2017	Prevalence of psychological symptoms among Ebola survivors and healthcare workers during the 2014-2015 Ebola outbreak in Sierra Leone: a cross-sectional study	China	Cross-sectional study	143 healthcare personals and 18 Ebola virus disease survivors	EVD survivors had extreme somatization, obsession-compulsion, depression, anxiety, hostility, phobic anxiety, paranoid ideation, bad sleep and appetite (defined as T-score higher than 2.2), and highest GSI score.



Cheng et al. (2004)	2004	Psychological distress and negative appraisals in survivors of severe acute respiratory syndrome (SARS)	Hong Kong	Cross-sectional study	180 participants	There is significant psychological distress of SARS survivors at 1-month recovery.
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**DISCUSSION:**

Previous literature has identified hospitalization as a significant contributor of mental health outcomes in patients with infectious disease (Benros, et al. 2011; Nielsen, et al. 2014). There is limited research indicating that even milder illnesses treated in primary care were linked to a higher incidence of some severe mental problems (Khandaker, et al. 2014; Köhler, et al. 2017). The findings of this systematic review highlight the significant psychological distress experienced by individuals and communities during infectious disease. This distress is manifested through fear, anxiety, depression, and stigmatization. These psychological responses can have detrimental effects on individuals' mental health and well-being, as well as on the social dynamics and cohesion of communities. Additionally, the socio-political consequences of infectious diseases are evident in the stigmatization and rejection faced by affected individuals and communities. Furthermore, the review reveals that public health measures such as quarantine and physical distancing can exacerbate these psychological and socio-political consequences. In conclusion, this systematic review provides evidence of the profound psychological and socio-political impacts of infectious diseases on individuals and communities.

However, there were certain limitations to this systematic review. One limitation is the lack of enough evidence to draw firm conclusions about the long-term trajectory of psychological distress following infectious disease outbreaks. Another limitation is the language barrier, as only studies published in English were included in the review.

**CONCLUSION:**

Infectious diseases have significant psychological and socio-political consequences. These consequences include the emergence of authoritarian attitudes, changes in voting behavior, and the enactment of laws that favor specific groups. Further research is needed to explore the mechanisms underlying these consequences and to understand how they may vary across different cultural and societal contexts.

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