

Invited review

Stigmatization of Patients With Viral Infections and Mass Psychogenic Illness

Andrijana Šantić^{1,2}, Krešimir Šantić^{2,3}, Ivan Radoja^{2,4}, Ivana Jelinčić^{1,5}, Dunja Degmečić*^{1,2}

¹ Department of Psychiatry, University Hospital Centre Osijek, Croatia

² Faculty of Medicine, Josip Juraj Strossmayer University of Osijek

³ Department of Pediatrics, University Hospital Centre Osijek, Croatia

⁴ Department of Urology, University Hospital Center Osijek, Osijek, Croatia

⁵ Faculty of Dental Medicine and Health, Josip Juraj Strossmayer University of Osijek

*Corresponding author: Dunja Degmečić, ddegmecic@gmail.com

Abstract

Background: The stigmatization of viral patients is primarily a negative attitude and a common opinion about people suffering from various infectious diseases of the viral etiology and their consequences. The belief and the attitude that individuals are not socially acceptable because potentially spreading contagion for the outcome has negative discrimination in our society. Often such persons are excommunicated, which extends through all the social layers and ages.

Methods: The PubMed, ScienceDirect, and SpringerLink databases were used for the research. Keywords stigma, viral infection, infected patient, discrimination, isolation were entered to identify papers dealing with a viral infection, and stigmatization.

Results: After screening available databases in the last five years according to the selected keywords, the PubMed database yielded nine articles, the ScienceDirect identified initially 87 articles, SpringerLink identified 42 articles. Viral infection and stigmatization are of interest to numerous scientists.

Conclusion: The availability of information should create empathy and ensure openness to diversity. Following the available literature, we understand that the biggest problem today is the social exclusion of people due to their viral illness, but equally the self-isolation of those infected due to the fear of being rejected and the misunderstanding of people from the environment.

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Introduction

By observing the etymological side, the stigmatization in its widest sense originates from the word stigma (Greek Stigmatos), which in ancient Greece referred to a sign made on the body of morally bad and less valuable persons, created as a consequence of stamping or indentation. Often this was related to uncivilized persons who speak different languages, barbarians, Savages, but also members of the same people, slaves, criminals, traitors, and others from the lowest layers of society, which was then socially acceptable to mark. The main function of such a marking principle was the exclusion of selected persons from society and their social degradation. The aim of such degradation was not to direct the physical punishment of the individual but to punish the person by losing their freedom outside the bars, i.e., in the surrounding world. We notice that it is a much more complex concept, closely related to several prejudices, discrimination, and is very often accompanied by the primarily imposed and subsequently internalized by the self-stigmatization. The advancement of civilization has changed social layers, but stigmatization has

always been one step ahead of time. Although the physical marking of persons as a method of humiliation may not be used nowadays, stigmatization is still present in our society (1-7).

One of the most famous sociologists in recent times who dealt with the notion of stigmatization, Erving Goffman, described the term as "an attribute that makes a man socially different from others in the social category and lowers him to the status of infected or reduced," and stigmatized person as "the individual who disqualifies from full social acceptance." Besides, he proposed to divide the stigmatization into three categories: physical differences (visible deficiencies, physical injuries, mutilations, tattoos), recognizable character deficiencies (mental and mental state, addiction, alcoholism, socially unacceptable behavior) and tribal stigmatization (inborn characteristics such as race, nation, religion (6, 8, 9).

There are two forms of stigma that share three common characteristics: stereotypes, prejudice, and discrimination, as outlined in Table 1.

Table 1. Comparing and contrasting the definitions of public stigma and self-stigma

Comparing and contrasting the definitions of public stigma and self-stigma	
Public stigma	
<i>Stereotype</i>	A negative belief about a group (e.g., dangerousness, incompetence, character weakness)
<i>Prejudice</i>	Agreement with belief and/or negative emotional reaction (e.g., anger, fear)
	Behavior response to prejudice (e.g., avoidance, withhold employment and housing opportunities, withhold help)
<i>Discrimination</i>	
Self-stigma	
<i>Stereotype</i>	A negative belief about the self (e.g., character weakness, incompetence)
<i>Prejudice</i>	Agreement with belief, negative emotional reaction (e.g., low self-esteem, low self-efficacy)
<i>Discrimination</i>	Behavior response to prejudice (e.g., fails to pursue work and housing opportunities)

The first is the Public stigma, which implies the opinion of the majority of the population towards a marginalized group, while the second self-stigma implies a negative opinion of a member of such a marginalized group (10-13). During our past, many diseases have played a very

significant role in their devastating influence on society, and consequently, their negative psychological impact has grown. Examples are numerous. Starting with the plague, probably the first described pandemic of all time, which in history has repeatedly decimated humankind,

and it is related to tens of millions of victims. Its most notable outbreaks were 430 BC, 165, 250, 541, 1350, and 1665. In the 11th century, leprosy was first described as a separate disease and its whole dark side (14). The beginning of the 19th century marks cholera, and at the end of it, we can see the first significant pandemics of a viral disease, influenza (15). First, those Russian from 1889., then Spain from 1918., and in the end, those Asian from 1957. year. History then records a couple more significant outbreaks of the causative agent in the later years of the 20th and early 21st centuries (16). The modern age marks the exponential development of science, medicine, and the discovery of antibiotic therapy, so the previously mentioned threats of bacterial etiology, such as plague and leprosy, have become a minor adversary. However, the man did not become immune to disease outbreaks, and since 1981 a new topic has emerged in the professional literature, as well as in daily informative discussions, HIV - AIDS (17). Another disease that causes the virus and is followed by a series of more common occurrences of other viral pandemics. Fortunately, they are no longer counted in the millions but in the hundreds and thousands, but they are discussed daily (18). It is necessary to take into account the dose of globalism, the ease of availability of new information, but also, more generally, better information for the population.

Looking empirically and with great caution, it is not surprising that the human race created an aversion to diseases and their causes. As beings at the top of the food chain, they remained an

Table 2. PubMed search methodology and results

Filters	Paper 1	Paper 2
From 2015 until 2020	11	28
Similar results	78	93
English language	77	89
Sex female and male	61	75
Age: Persons 19 – 80+	58	74
Review of abstracts and title of the articles based on including criteria	5	27

important link which, from the beginning, represented our most important natural enemy. Therefore, it is not surprising that infectious patients carried a great social stigma. Perhaps as pity, but more likely out of fear for their own lives, often infected persons are excommunicated, which extends through all the social layers and ages (16-18).

Methods

Literature research took place in February 2020. Databases used in the search were PubMed, ScienceDirect and SpringerLink. Keywords stigma, viral infection, infected patient, discrimination, isolation were entered to identify papers dealing with a viral infection, and stigmatization. In the last five years, the PubMed database yielded nine articles. Another 75 articles were found after using the option "similar results" with the first paper, and 40 articles were found for the second paper.

Inclusion Criteria

All articles containing the terms stigma, discrimination, virus infection, social exclusion, cohort, prospective in the title or abstract were included in the review. Exclusion criteria were if a paper included animal research, a person under 19 years. Six articles regarding studies ultimately met the criteria. The final results obtained after applying filters are shown in Table 2.

The same keywords were used to search the ScienceDirect database, and 87 articles were identified initially, which include articles published from 2015 to 2020. The number of articles was further reduced to 30 by using the option "type of article –research" and to 10 by using the option "publication title." They publish in the journals Journal of the Association of Nurses in AIDS Care, International Journal of Drug Policy, Social Science & Medicine, Applied Nursing Research, HIV & AIDS Review, Journal of Substance Abuse Treatment, Journal of Theoretical Biology, Nurse Education Today, Journal of Adolescence and Sexual & Reproductive Healthcare. After reading the titles and abstracts, three articles were selected.

The keywords mentioned above were used for searching the SpringerLink database, where 45 documents were identified, which include documents published from 2015 to 2020. After applying the filter article, the initial number was

reduced to 42 and then to 36 after using the filter "Medicine & Public Health." Further restriction of results accomplishes using the options "Public Health and English," which led to 14 articles. Titles and abstracts were reviewed, and two articles were selected.

Discussion

The stigmatization of HIV patients

AIDS is a disturbed condition of the human immune system, a disease caused by HIV infection. It affects populations worldwide, is not limited to specific subgroups or regions, and attacks without warning. It estimates that around 37.9 million people are currently infected worldwide, of which as many as 1.7 million children are under the age of 15.

Table 3. New HIV infections by region, 2017–2018; Source: UNAIDS/WHO estimates; WHO HIV update July 2019 (Available on: <https://www.who.int/hiv/data/en/>; accessed on February 2020)

WHO region	Number of new HIV infections 2017	Number of new HIV infections 2018	New HIV infections all ages (per 1000 uninfected population) 2017	
			New HIV infections all ages (per 1000 uninfected population) 2017	New HIV infections all ages (per 1000 uninfected population) 2018
Africa	1 100 000 [830 000-1 500 000]	1 100 000 [800 000-1 500 000]	1.15	01.07.20
Americas	160 000 [120 000-200 000]	160 000 [120 000-200 000]	0.16	0.16
South-East Asia	170 000 [120 000-210 000]	170 000 [110 000-200 000]	0.09	0.09
Europe	170 000 [150 000-180 000]	170 000 [150 000-190 000]	0.19	0.19
Eastern Mediterranean	39 000 [24 000-64 000]	41 000 [26 000-68 000]	0.06	0.07
Western Pacific	120 000 [110 000-130 000]	120 000 [110 000-140 000]	0.06	0.06
Global	1 800 000 [1 400 000-2 300 000]	1 700 000 [1 400 000-2 300 000]	0.24	0.24

There is no specific therapy, and due to its characteristic structure and inability to retain antigenicity in living attenuated or dead organisms, the vaccine has not been discovered to date. Taking into account the above facts, as well as the devastating and deadly consequences it carries, the fear of HIV infection is reasonably justified. However, knowing the methods of spreading the disease and the relatively successful prevention mechanisms, the stigmatization of the sick is often exaggerated and non-meaningful. There should also be considered clear data on the constant decline in the number of sufferers, with a fall of as much as 38% globally from 2001 to 2003, accompanied by a significant reduction in the number of deaths caused by AIDS (19). In 2018, about 770,000 people died from the effects of AIDS, compared to 1.2 million in 2010, and half a million more in 2004 (Table 3) (20).

The stigmatization of HBV and HCV patients

Unlike human immunodeficiency viruses, hepatitis viruses constitute a heterogeneous group of microorganisms that specifically attack liver tissue, causing acute and chronic diseases. Hepatitis A and E viruses appear sporadically in the world; we call them diseases of "dirty hands," and the result of infection with these agents is mostly an acute disease that usually spontaneously passes through a period of 1 to 4 weeks (21, 22). Hepatitis D is characteristic in that it never occurs independently as a cause of disease, but always accompanies an earlier infection with HBV as a superinfection, i.e., it causes chronic co-infection of HDV and HBV (23). For our research, however, we will pay special attention to those types of viruses that cause a majority of chronic infections and which pose a special challenge for physicians, and the health system a certain socioeconomic problem. This category includes hepatitis B and hepatitis C viruses, which have a long incubation period, after which they cause mild or no symptoms, and once transmitted to chronic disease in some patients can cause cirrhosis or hepatocellular carcinoma (24). Their occurrence is not

geographically specific, they are present in all parts of the world, and they can affect members of all social layers. It currently estimates that 250-290 million people are infected with HBV worldwide, and approximately 887,000 people die annually from the infection (26.)

Specific therapy does not exist; treatment is symptomatic and aims to prevent the development of liver cirrhosis and to prevent the occurrence of hepatocellular carcinoma. However, the HBV vaccine exists, and in combination with improved awareness and good preventive measures, it estimates that by 2030, the global HBV threat should reduce to the lowest possible level, which is also the World Health Organization's plan (26). Unfortunately, despite such a good prognosis, the stigmatization of HBV patients persists. By contrast, the number of people infected with HCV in the world estimates to be four times lower, around 71 million, and the death rate is only half the yearly rate than that of HBV, approximately 400,000. There is certainly the fact that in most cases, HCV is transmitted in the vast majority of cases only by blood, and for HBV, there is data of transfer through bodily fluids. Besides, a specific vaccine against HCV is still not available, so it is more difficult to prevent the disease itself if direct exposure occurs (27-30). In addition to the health complications affecting the ill, an additional burden creates by stigmatization and discrimination (31, 32). The basis of stigmatization and, in this case, carries a high level of anxiety and excessive fear of transmission of infection, which consequently leads to social and economic discrimination and financial burdens for the individual and the economy as a whole. The basis of the prevalence of discrimination against these viral infections would also be education and accurately inform the entire world population (33).

The stigmatization of Ebola patients

Ebola virus disease is a rare disease of Ebola virus infection. The risk of Ebola virus infection is extremely small unless you have been in direct contact with the bodily fluids of people suffering

from Ebola, i.e., living or dead animals (34,35). Uncertainty among populations is given by the fact that it is possible to transfer infection by contact with bodily fluids or unprotected sex with patients who have completely recovered from the Ebola virus disease. In particular, special warnings issues to persons traveling to countries where there is a risk of infection with Ebola. The stigmatization of Ebola patients is mentioned in several scientific articles (36-38).

Talking about the discrimination and stigmatization of Ebola-infected in posts about survivors, up to 64% of articles in 2015 were explicitly stigmatized related to survivors (39). Trough many articles, the main cause of any

form of stigmatization and/or discrimination has been called fear of illness (40). What cited as the basic problem for survivors is dealing with the consequences, social and economic outcomes (loss of friends, loss of workplace), and experiencing psychological stress. Often, these issues compound by the unreliability of the health system, inconclusive Knowledge about treatments, and ways of transmitting infection with a lack of feedback and the effectiveness of destigmatizing measures (41, 42). The current epidemic mostly affects the Democratic Republic of Congo with Liberia, Guinea, and Sierra Leone, with a survival rate of 53% (Table 4)

Table 4. Chronology of previous Ebola virus disease outbreaks. Latest numbers as of February 23, 2020. Source: Ministry of Health, Democratic Republic of the Congo (Available on: <https://www.who.int/emergencies/diseases/ebola/drc-2019>; accessed in February 2020)

Chronology of previous Ebola virus disease outbreaks.					
Latest numbers as of February 23, 2020.					
Year	Country	EVD	Cases	Deaths	Case fatality
			3444 -		
2018-2020	The Democratic Republic of the Congo	Zaire	ongoing	2264	65,74%
2018	The Democratic Republic of the Congo	Zaire	54	33	61,00%
2017	Democratic Republic of the Congo	Zaire	8	4	50,00%
2015	Italy	Zaire	1	0	0,00%
2014	Spain	Zaire	1	0	0,00%
2014	UK	Zaire	1	0	0,00%
2014	USA	Zaire	4	1	25,00%
2014	Senegal	Zaire	1	0	0,00%
2014	Mali	Zaire	8	6	75,00%
2014	Nigeria	Zaire	20	8	40,00%
2014-2016	Sierra Leone	Zaire	14124*	3956*	28,00%
2014-2016	Liberia	Zaire	10675*	4809*	45,00%
2014-2016	Guinea	Zaire	3811*	2543*	67,00%

(43, 44). Persons who are treated as survivors, cured of Ebola, experience social isolation by people from their environment, and experience various forms of violence that, apart from psychic, also involve the extent of physical violence (45, 46).

. The similarity of stigmatizing attitudes towards people suffering from HIV and Ebola infection are numerous, from discriminatory racial attitudes, sexual orientation with irrational fears (47, 48). The fundamental difference in the stigmatization of the infections mentioned above is that the mortality of the Ebola virus infection is higher compared to the affected population, it occurs within a shorter period, and therefore, the level of anxiety is even higher (49).

The stigmatization of patients with respiratory infections

Two-thirds of all infections are inflammatory diseases of the respiratory system. The most common causes of respiratory infections are viruses, accounting for 85% of all acute respiratory inflammation (50). Due to the lack of availability of effective antiviral drugs, treatment generally comes down to symptomatic. The basic mechanism of transmission is by drop-through, more frequently occurring in the colder months with symptoms such as fever, cough, shortness of breath, muscle pain, fatigue, and general weakness (51). Although most often, it is a common cold caused by Rhinovirussians, more emphasis places on the flu virus due to the severe clinical images and possible mortality. Complications of influenza in older age, cause the so-called. "Excess mortality." For this reason, influenza in older age should be recognized as a serious disease, especially for those who already have impaired health.

Influenza viruses are constantly changing, with new strains appearing regularly. If you've had influenza previously, your body has already made antibodies to fight that particular strain of the virus. If future influenza viruses are similar to those you've encountered before, either by having the disease or by getting vaccinated, those antibodies may prevent infection or lessen its severity. But antibodies against flu viruses you've encountered in the past can't protect you from new influenza strains that can be very different immunologically from what you had before. There are three types of flu viruses: A, B, and C. Type A and B cause the annual influenza epidemics that have up to 20% of the population sniffing, aching, coughing, and running high fevers. Type C also causes flu; however, type C flu symptoms are much less severe (52, 53).

The flu is linked to between 3,000 and 49,000 deaths and 200,000 hospitalizations each year in the United States. The seasonal flu vaccine was created to try to avert these epidemics. Type A flu virus is constantly changing and is generally responsible for the large flu epidemics. Type B flu may cause a less severe reaction than type A flu virus, but occasionally, type B flu can still be extremely harmful. Influenza type B viruses are not classified by subtype and do not cause pandemics. Type C flu viruses do not cause epidemics. All flu vaccines protect against three influenza viruses: one Influenza A (H3N2) virus, one influenza A (H1N1) virus, and one Influenza B virus. The avian influenza virus causes bird flu. Birds can be infected by influenza A viruses and all of its subtypes. Birds are not capable of carrying either type B or C influenza viruses (54, 55). The flu season in the Republic of Croatia is expected to start at the end of November and ends in late March with roughly an affected population of 75 000 people (Figure 1 and 2). Since it is a serious illness, vaccination is highly recommended.

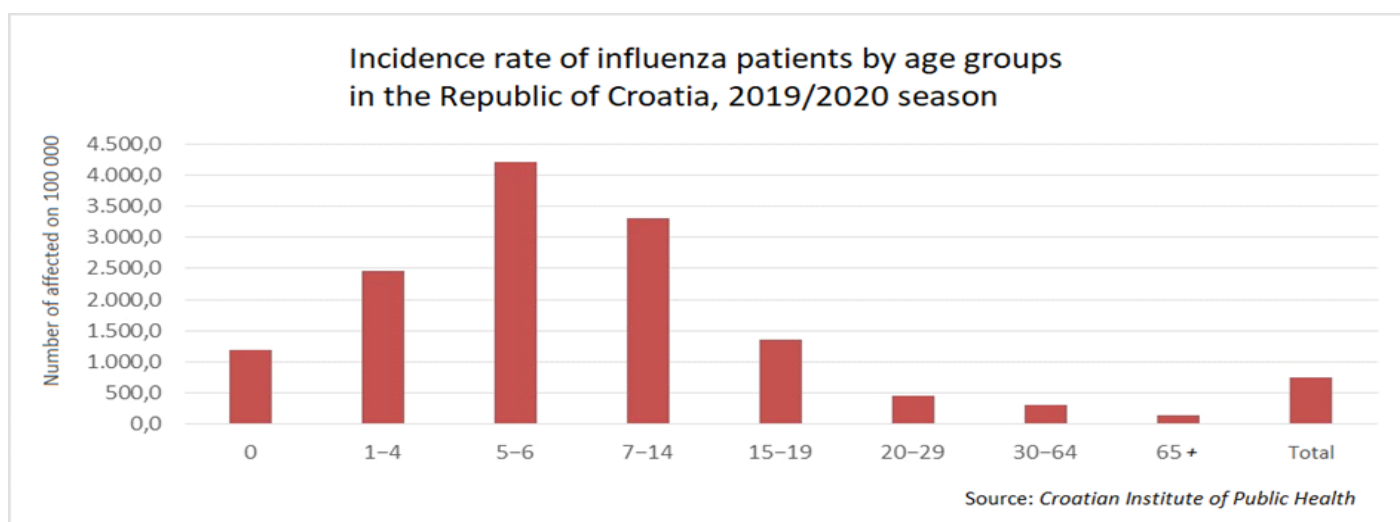


Figure 1. The incidence rate of influenza affected patients by age groups in the Republic of Croatia on 100 000 inhabitants in season 2019./2020. Available on: Croatian Institute of Public Health, <https://www.hzjz.hr/>; accessed in February 2020

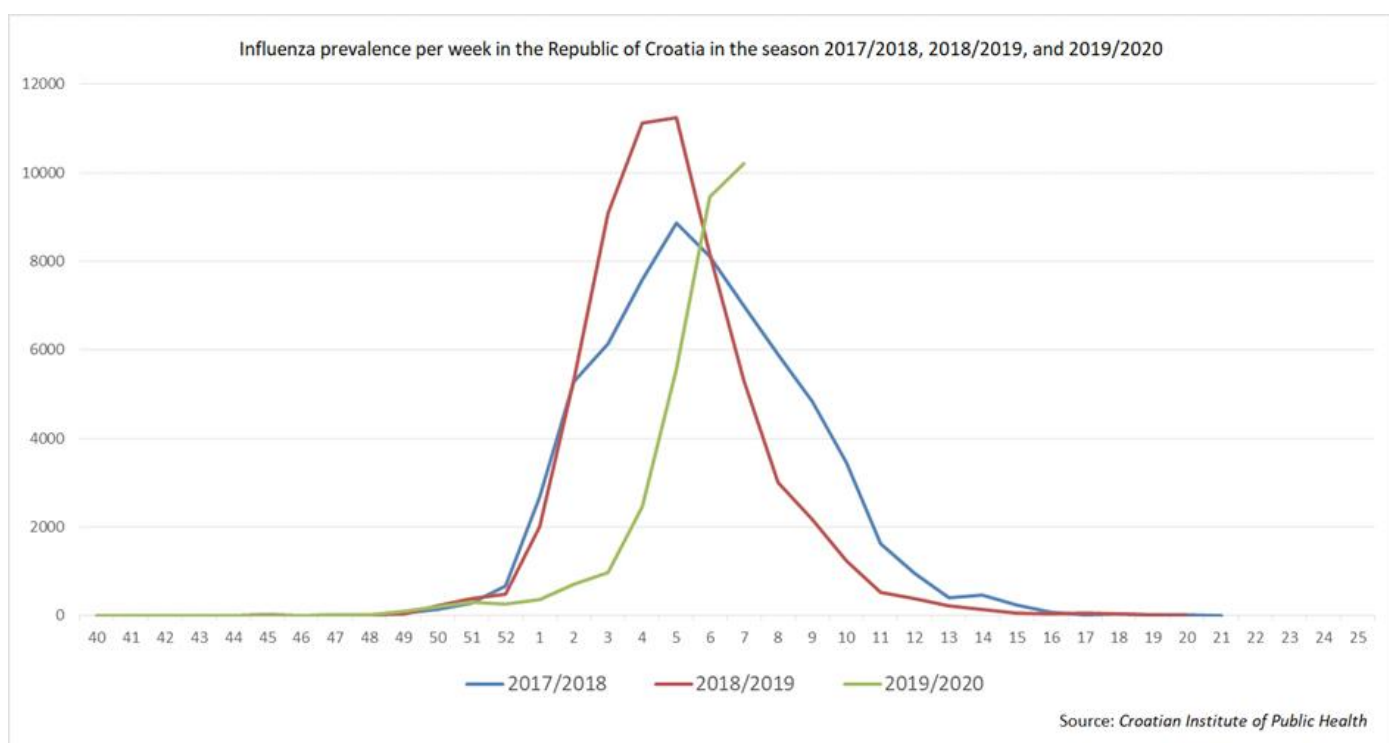


Figure 2. Influenza prevalence per week in the Republic of Croatia in the season 2017/2018, 2018/2019, and 2019/2020. Available on: Croatian Institute of Public Health, <https://www.hzjz.hr/>; accessed in February 2020

Speaking of respiratory viral infections, we must not forget a microorganism that has occupied the public of the whole world and has become a media and infectious phenomenon in 2019. and in 2020. year, the COVID-19 – Coronavirus disease 2019. Otherwise, it belongs to a group of 8

viruses spread among humans as well as other mammals and birds. After infection, it can affect the respiratory, gastrointestinal, liver, and neurological systems, with consistent symptomatology. Six known types of the virus affect humans, and in general, all manifest by

general infectious symptoms resembling influenza above, and without precision diagnostic technique, it is not possible to distinguish them by the clinical picture. The

COVID-19 causes milder respiratory symptoms in most cases. However, there are clear indications of complications and reported deaths (Figure 3) (56).

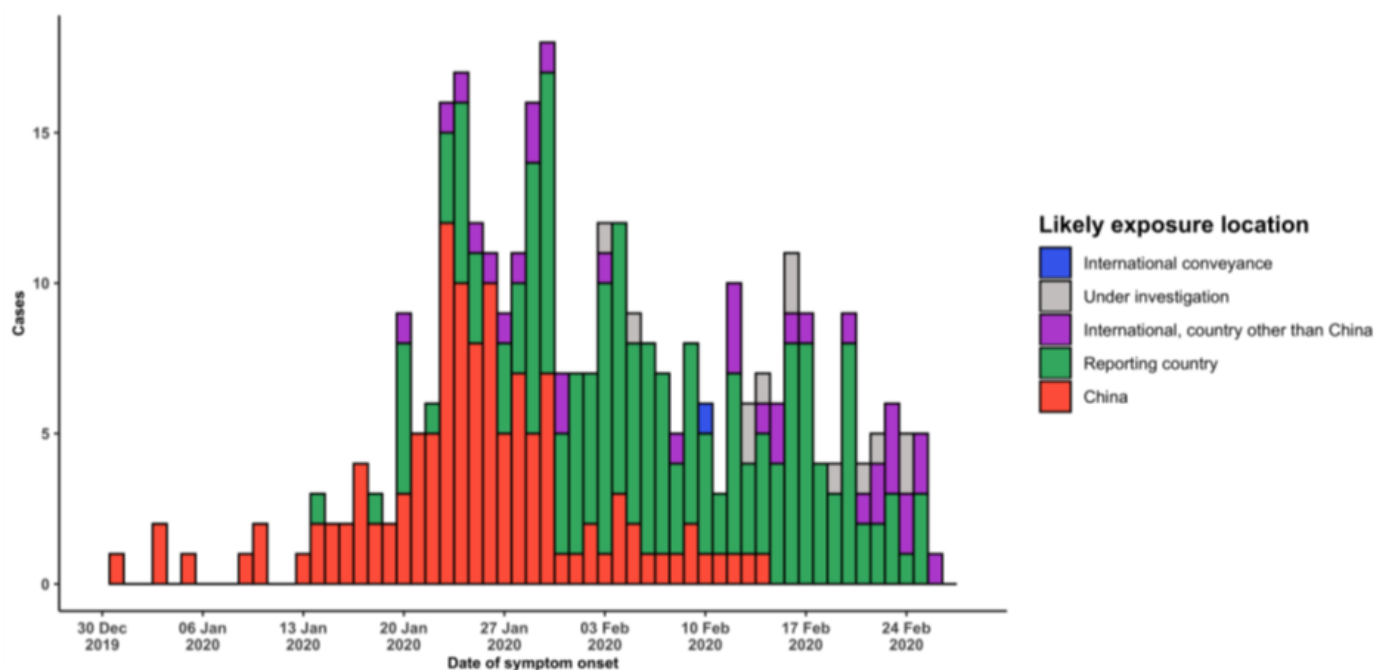


Figure 3. Epidemic curve of COVID-19 cases (n=338) identified outside of China by date of onset of symptoms and likely exposure location, February 27, 2020. Available on: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200227-sitrep-38-covid-19.pdf?sfvrsn=gf98940c_2; accessed in February 2020

At this time, while the pandemic is still ongoing, the total number of patients is growing worldwide, with a more and more deaths as a result of complications. At the time of writing this paper number of cases in Croatia is growing (18).

Mass psychogenic illness

The significant financial and psychological problem of today's time represents mass psychogenic illness. Although attention often does not focus on this issue, it leaves significant consequences for the management of several systems starting from the health system, continuing to the educational and internal control of the functioning of states. It defines as the rapid spread of clinical signs of illness and symptoms among members of certain groups that manifests through disorders of mental state,

physical functioning, and the presentation of numerous somatoform complaints that do not have a real organic basis (57). The trigger is sufficient (bad smell, bad taste, unknown sound, suspicious substance) that will convince the individual or the group that it has been exposed to a particular hazard and to experience self-suggestive symptoms of the disease. Specifically, the index case may have an organic problem, but later cases do not necessarily have to be affected by the cause. It is interesting that it affects women more often and manifests in symptoms of "phantom disease" with the onset of anxiety, social isolation, nausea, headache, abdominal pain, fainting, chest pain, weakness, and hyperventilation. Following the available literature, the phenomenon of mass hysteria is most often associated with persons exposed to different stressors, certain structural

characteristics of personality, infrequently socioeconomic status, and individuals who have historically experienced trauma or abuse. The contribution to the development of this phenomenon is media reports with inconsistent and incomplete information filled with sensational concepts, thus losing the primary objective of informing and educating the public about medical information that may consequently harm news consumers by misleading and misinforming (58). As an example of the mass psychogenic illness occurring in a girls' high school at Gopalganj in Bangladesh in April 2013, which resolves with a rapid coordinated response within the affected population (59). An example of this form of mass hysteria can also mirror infections caused by viruses. Fear of the unknown, insufficient information of the population, and the unwillingness of the entire social system can lead to the development of this phenomenon with the subsequent development of stigmatizing attitudes towards the seriously affected (18, 60).

Conclusion

Any stigmatization entails discrimination, especially if the original cause is long-lasting or incurable, which in turn harms the emotional state of the individual, which ultimately leads to self-stigmatization, deepening feelings of rejection, and aggravating the previously disturbed condition of the individual.

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In modern society, the attitude towards the diseased characterizing incomparably greater humanity than it was during the history. The quality of treatment, administration more effective, and every day more advanced pharmacotherapy, as well as the more efficient healthcare system, have led to increasing awareness and social acceptance of the patient. The level of awareness of certain diseases is increasing day by day, partly due to excellent information, but also high-quality health education of the population. Patients are no longer treated as the less valuable beings, nor are they physically marked or punished. However, certain stigma in individual clinical branches persists. Perhaps as a consequence of fear or compassion for the sick, it will hardly be eradicated as such for much longer. One stamp from the past may diminish over time, but unfortunately, the future always brings some new ones.

Collective psychogenic illness has been reported in literature since medieval times. Everyone has deep personal experience of panic. Epidemic hysteria is a fascinating phenomenon, one that has occurred for centuries and is likely to continue to occur. During times of threat, anxious public needs to feel reassured and protected and people look to authority figures to take control and provide that reassurance. Public health agencies with planned, well coordinated, strategic approach will help reduce societal vulnerability to mass hysteria and limit the „contagiousness“ of such an event.

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