BMC Infectious Diseases

RESEARCH

Open Access

What are the frequent complaints voiced by inpatients and physicians amidst the emerging infectious diseases? — An illustrative instance of the COVID-19

Xixia Feng[1,2,3†], Peiyi Li[1,2,3†], Xuechao Hao[1,2,3], Yalan Peng[4], Ruihao Zhou[1,2,3], Weimin Li[5,6,7], Guo Chen[1,2,3*] and Tao Zhu[1,2,3*]

Abstract

Introduction Emerging infectious diseases (EIDs) can disrupt the healthcare system, causing regulatory changes that affect the healthcare-seeking process and potentially increase patient-physician dissatisfaction. This study aimed to collect and analyze patients' and physicians' complaints during an EID outbreak to inform potential clues regarding medical quality and patient safety enhancement in future dealing with EIDs, employing text mining methodologies.

Methods In this descriptive study, complaint records from January 2020 to February 2023 at West China Hospital, a national medical facility in China, were analyzed. Patient and physician complaints have been retrospectively retrieved from the record from the medical department, and then categorized into distinct groups based on reporting reasons, encompassing COVID-19-related policies, healthcare access, availability of medical resources, and financial concerns.

Results During the COVID-19 pandemic, 541 COVID-19-related complaints were identified: 330 (61.00%) from patients and 211 (39.00%) from physicians. The monthly volume of complaints fluctuated, starting at 10 in 2020, peaking at 21 in 2022, and dropping to 14 in 2023. Most complaints from inpatients were expressed by older males aged 40 to 65 (38.82%, 210/541). The primary source of complaints was related to mandatory COVID-19 policies (79.30%, 429/541), followed by concerns regarding timely healthcare services (31.61%, 171/541). Few complaints were expressed regarding the insufficiency of medical resources (2.77%, 15/541) and the high costs (4.25%, 23/541). The frequency of complaints expressed by doctors and patients in the emergency department was higher compared with other departments (24.58%, 133/541).

Conclusions Increased complaints may serve as a primitive and timely resource for investigating the potential hazards and drawbacks associated with policies pertaining to EIDs. Prompt collection and systematical analysis of

†Xixia Feng and Peiyi Li contributed equally as co-first author.

*Correspondence:
Guo Chen
chenguohx2023@163.com
Tao Zhu
739501155@qq.com

Full list of author information is available at the end of the article

patient and physician feedback could help us accurately evaluate the efficacy and repercussions of these policies. Implementing complaints-based assessment might improve care standards in forthcoming healthcare environments grappling with EIDs.

Keywords Complaints, Emerging infectious diseases, COVID-19, Patient safety

Introduction

In response to a widespread outbreak of emerging infectious diseases (EIDs), it is imperative for the government and healthcare institutions to adopt countermeasures in the shortest time-frame possible, such as reduction of human interactions, quarantine of individuals susceptible to virus exposure, and the initiation of medical intervention [1]. Nonetheless, the management of the influx of patients seeking care for symptoms of EIDs and other routine healthcare demands remains an enormous difficulty. This challenge is further exacerbated by the scarcity of health resources and physicians, leading to the overburdening of vulnerable health systems and the subsequent delay in the diagnosis and treatment process [2]. Consequently, the medical quality, patient outcomes, and doctor-patient relationship have encountered significant challenged.

A complaint refers to the act of expression discontentment regarding any facet of the operations, activities, or behavior of a Medicare health plan or its providers, regardless of whether remedial action is requested [3]. Patients possess the entitlement to lodge complaints and express complaints in instances where they find the received treatment to be unsatisfactory. Similarly, physicians also have ability of expressing complaints when they perceive that patient safety or care is being compromised due to patient behavior, the conduct of colleagues, or the policies and procedures implemented within their respective organizations [4]. These complaint data may serve as comprehensive feedback on medical experiences, thus facilitating improvements in the provision of patient safety and medical quality. The analysis of complaints may provide a proactive and contemporaneous insights for identifying potential medical risks, as well as opportunities for policy adjustment and performance enhancement during EIDs.

Nevertheless, there exists a dearth of scholarly investigations concerning the complaint data that pertains specifically to EIDs. The precise complaints articulated by patients and healthcare providers during EIDs and the subsequent ramifications of these complaints remain ambiguous. During the preceding three-year period, the COVID-19 pandemic has provided an opportunity to analyze the complaints expressed by both patients and medical professionals in response to this EID. This viewpoint aims to systematically collect and analyze the characteristics, trends, and management of patient and physician complaints during an EID outbreak to inform potential clues regarding medical quality improvements and patient safety enhancement in future healthcare environments dealing with EIDs, employing text mining methodologies.

Methods

West China Hospital (WCH) which is located in Chengdu, Sichuan province, is a national medical center, discharged 302, 300 inpatients and performed 207, 500 surgeries in 2022 [5]. Following Wuhan's lockdown on January 23, 2020, the Chinese government employed "dynamic zero-COVID" strategies, such as limiting family accompanies and visits for all inpatients, requiring a negative qRT-PCR test within 48 h for hospitalization [6]. China officially gradually terminated its zero-COVID-19 policy since December 2022, and downgraded management of COVID-19 from Class A to Class B. Following the cancellation of centralized quarantine, close contact tracing, or mandatory nucleic acid testing, the number of positive cases and deaths skyrocketed [7]. Notably, the WCH maintained its inpatients accompany restriction for inpatients until this study submitted.

The complaints voiced by patients and physicians were conveyed to the medical department of WCH through telephonic and in-person communication. The executives meticulously documented the reasons behind these complaints, along with personal information pertaining to patients, encompassing gender, age, nationality, educational background, and marital status. All data was recorded in an Excel spreadsheet by the recorder. The Ethics Committee of West China Hospital of Sichuan University was exempted as the retrospectively study did not involve any individual information. Upon obtaining consent of the medical department, we retrieved the complaint data spanning from January 1, 2020 to February 28, 2023. Additionally, we also retrieved patient mortality data during hospitalization via the electronic healthcare record. The subgroup analysis excluded the incomplete personal information records of patients who were admitted through the emergency department. Nevertheless, individuals who were critically ill might request to be discharged and return home, consequently, these cases are not categorized as hospital deaths.

Two reviewers (XF, PL) conducted an independent screening process to identify COVID-19-related complaints. The complaint reports related to COVID-19 were subsequently classified into four distinct categories based on the reasons for reporting, including healthcare access,

such as delayed diagnosis and treatment; COVID-19-related policies, such as visiting cancellation and qRT-PCR testing; inadequate medical resources, such as insufficient blood supply and a lack of available ward and operating room facilities; and financial concerns, such as unaffordable medical expense during EIDs. The specific information of the four categories was tabulated in Table 1. When the complaint included multiple classifications, the calculation was repeated. Any discrepancies or disagreements during this process were resolved by convening meetings where all authors participated actively. During these meetings, each point of contention was addressed systematically. Authors presented their perspectives, supported by evidence from the previous studies and relevant literature, and engaged in a critical evaluation of each other's viewpoints. These sessions were characterized by open-mindedness, with each author willing to reconsider and, if necessary, modify their positions. The discussions were structured to ensure a comprehensive examination of the issues at hand, leading to a consensus that was informed by the collective expertise of the group.

Results

A total of 541 complaint records directly associated with COVID-19 were identified during the study period from January 1, 2020, to February 28, 2023. Over this timeframe, the average monthly number of complaints showed a consistent upward trend. It started with an average of 10 complaints per month in 2020, increased to 12 complaints per month in 2021, further rose to 21 complaints per month in 2022, and then slightly decreased to 14 complaints per month in 2023. Among the all COVID-19-related complaints, there were 321 male patients, accounting for 59.33% of the total. Inpatients aged 40 to 65 constituted the largest age group (38.82%, 210/541),

Table 1 The details of the four categories of complaints

Category	Interpretation	Component	Instance of patient complaints	Instance of physician complaints
COVID-19-relate policies	As the EID progresses, relevant policies mandatory employed by the government and hospitals.	Visiting cancellation	"She would have died alone without families. Please let me see him again for the last time."	"Due to cancellation of visiting, the families of critical patient could not be able to accompany the patient before death."
		qRT-PCR testing	"I have been in the hospital all this time, why do I need to undergo nucleic acid screening again?"	"The patient had a fever but refused to receive nucleic acid screening."
		Isolation	"I did not get out of Chengdu. Must I also be quarantined just with a slight cough?	"The patient had an epidemiological history but refused to be quarantined."
		Others (leave the ward/nosocomial infection/vaccination)	"I can't stand the hospital diet. I want to go out for a meal."	"The patient left the ward on his own and refused to return to the ward despite phone contact."
Healthcare access	Medical care access affected by the pandemic.	Delayed treatment	"My father has been in the Isolation ward for a week. When can he receive surgery for his tumor?"	"The patient with aortic dissection needed to receive immediate surgery, but he was still quarantined."
		Delayed diagnosis	"I have been waiting for a month due to the epidemic. When can I have a gastrointestinal endoscopy?"	"The fiberoptic bronchoscopy examination was canceled at risk of virus exposure."
		Admission, discharge and transference	"When can I see the qRT-PCR test results? How long do I have to wait before hospitalization admission?"	"The patient needed to return home for further rehabilitation treatment, but due to regional lockdown, the patient had to stay in the hospital."
Medical resources	Mainly refers to the deficiency of medical resources.	Lack of blood	None	"We could not perform the operation because of the deficiency of blood."
		Lack of ward	"I have been stayed there for a long time. When could I be transferred to the cardiology department to treat my coronary heart disease?"	"The critical patient should be transferred to the intensive care unit immediately but there were not available wards."
		Other resources (Operating room)	"Is there only one special operating room for infected patients? My father will die if he cannot receive the surgery."	"This patient was infected, but it was difficult to coordinate the special operating room for infected patients."
Medical expenses	Patients cannot afford or pay medical expenses on time.	Patients' arrearage	"The epidemic caused the loss of individual wage, so we could not afford the medical expenses."	"The critical patient's families were unable to afford the expensive medical costs due to the bankruptcy resulted from the Covid-19 ."

predominantly Han ethnicity (88.35%, 478/541), married (64.14%, 347/541), urban (63.40%, 343/541), and with middle school education or below (44.73%, 242/541), accounting for a considerable proportion.

During this EID, there have been 330 complaints expressed by patients, accounting for 62.01% proportion of the overall complaints and exhibiting a progressive increase in monthly average, starting from 6 in 2020, rising to 8 in 2021, further reaching a peak of 13 in 2022, and ultimately slightly dropping to 10 in 2023. Inpatients dissatisfied with the mandatory implementation of policies during the EID constituted the largest proportion of complaints, reaching 64.77% in 2020, peaking at 83.78% in 2021, and then gradually declining to 66.29% in 2022 and 34.78% in 2023 (Supplementary Tables 1–2). Patients frequently expressed the second most prevalent concerns regarding the timely access to healthcare services, displaying a fluctuating change (ranging 14.41% in 2021 to 52.17% in 2023). Furthermore, dissatisfaction about unaffordable medical expense during such EID showed a notable increase from 0.00% in 2020 to 8.70% in 2023. Over the past three years, there were fewer patients' complaints about the deficiency of medical resources, less than 4% (Fig. 1). The number of male complainants (56.36%, 186/330) was slightly larger than that of females (42.12%, 139/330), and patients aged forty to sixty-five accounted for the highest proportion (36.36%, 120/330). Specifically, most patients with these complaints came from the department of emergency (29.09%, 96/330), department of infectious diseases (15.45%, 51/330), and department of psychology (11.21%, 37/330).

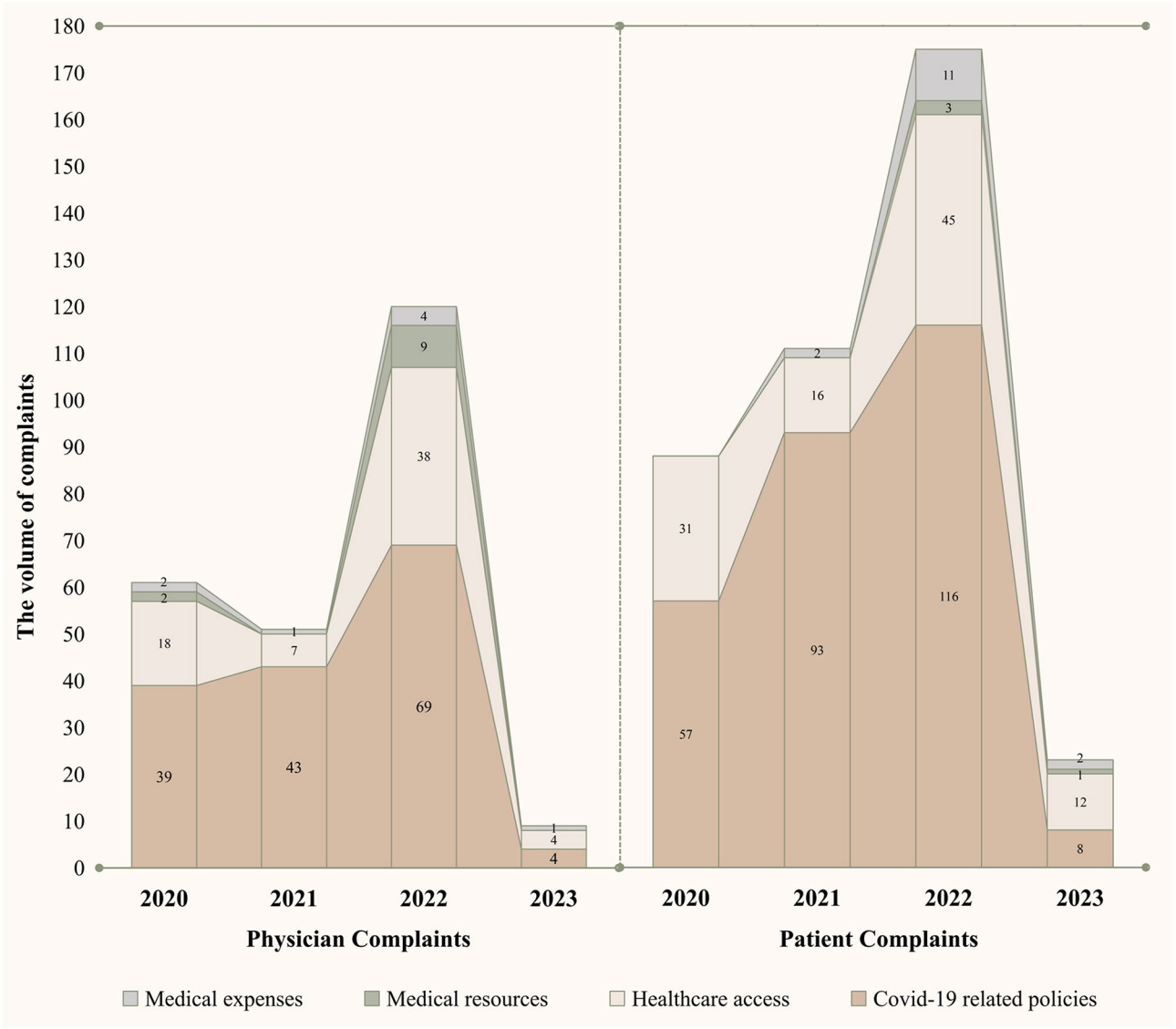

Fig. 1 Annual total volume of complaints

Physicians totally reported 211 incidents pertaining to COVID-19, with a fluctuating trend of the average number per month. The average number per month was 4 in 2020 and 2021, then increased to 9 in 2022 and finally dropped to 4 in 2023. Medical professionals most frequently reported complaints about patients' violation against the hospital and government regulations, the proportion ranging from 44.44% in 2023 to 84.31% in 2021(Supplementary Tables 1–2). Physicians also concerned about the timeliness of medical access (accounting between 14.41% and 52.17%). In comparison to patients, physicians were more inclined to report the potential risks for medical safety arising from insufficient medical resources and medical expense (Fig. 1). The majority of incidents reported by physicians were concentrated in the emergency department (17.54%, 37/211), infectious diseases department (15.64%, 33/211), and psychology department (9.00%, 19/211).

Among the inpatients who involved in the COVID-19-related complaints, which consisted of 330 complaints from patients and 211 complaints from physicians, 41 patients (32 males and 9 females, 29 from patients and 12 from physicians) were dead during hospitalization (7.58%, 41/541). Specifically, the mortality rate was 8.79% (29/330) among those who lodged complaints from patients and 5.69% (12/211) among those who lodged complaints from physicians. The rate of mortality exhibited a decline from 6.67% in 2020 to 4.35% in 2021, then followed by a substantial surge to 8.20% in 2022 and further escalated to 22.22% in 2023. Roughly 50% of the patients were admitted via the emergency department (53.65%, 22/41), while there were 22 patients dead aged from forty to sixty-five approximately accounting for 50% of the total number. For complaints from the death cases, the majority dissatisfaction refers to policies, which accounted for 57.69% of the total number of complaints (42.31% from patients and 15.38% from physicians). The second largest category of complaints was related to healthcare access, comprising 36.54% of the total (26.92% from patients, 9.62% from physicians). A small proportion (5.77%) of complaints were attributed to medical resources. Within this specific category, 1.92% of complaints were reported by patients who expressed concerns regarding the insufficient availability of beds, while 3.85% of complaints were reported by doctors who identified deficiencies in the blood supply and resources in the operating room.

Discussion

In light of the emergence of EIDs, both hospitalized individuals and medical practitioners have voiced a significant rise in discontentment and persisted throughout the pandemic. The notable complaints, which encompassing issues such as opposition to COVID-19-related strategies, delays in diagnosis and treatment, scarcity of medical resources, and exorbitant healthcare costs, has the potential to undermine the doctor-patient relationship, compromise patient safety, and diminish the quality of medical care. Individuals who file complaints and dissatisfaction experience a higher mortality rate, echoing prior findings [8]. Promptly addressing and managing COVID-19 complaints is crucial, not just for immediate resolution, but also for improving patient care in future EIDs.

The pandemic context has resulted in multiple medical requirements and cumbersome procedures during the delivery of healthcare services, [9] which brought weary healthcare-seeking experiences to patients who were frightened of infection and afflicted with illness. Therefore, policymakers are confronted with the challenge of balancing the need to address the physical and emotional well-being of patients while implementing effective antivirus measures to mitigate the spread of positive cases. After unsatisfied experiences, patient frequently complained and wanted a patient-centric response, including an acknowledgment of responsibility, an explanation of how events transpired, and specific learning or action [10]. This requires a positive complaint response system, including rapid feedback to leadership, transparent and accountable complaint resolving procedures, and timely feedback from medical executives and professionals. The integration of independent educational, training, and advisory services into the reform process could serve as external pillars of guidance and support, aiding healthcare institutions in their journey toward more efficacious complaint resolution methodologies [11]. Empirical evidence underscored the necessity for complaint responders to establish an early rapport with complainants, ensuring more tailored and effective resolutions, and highlighted the pivotal role of language in both the genesis and resolution of complaints [11, 12]. Notably, in our study, complaints focused on regular testing requirements and visiting restrictions during the "dynamic zero-COVID" policy, [13] while more patients expressed anxiety and fear about the nosocomial COVID-19 infection and vaccine side effects after the government lifted its prior severe control policy [14]. It is imperative to assess the potential ramifications and adequately prepare in advance prior to implementing policy adjustments pertaining to EIDs.

Throughout the COVID-19 pandemic, many healthcare systems placed an emphasis on fostering a better doctor-patient relationship, often by gathering feedback directly from patients [15–17]. A study from Africa indicated that patients felt the necessary physical distancing and use of personal protective equipment during the pandemic caused healthcare providers to seem more detached and less compassionate, negatively affecting the

doctor-patient relationship [17, 18]. Despite this perception, it is important to recognize that doctors, as implementers of medical policies, are responsible for adhering to guidelines designed to contain the spread of EIDs. Moreover, these professionals are generally empathetic toward individuals seeking medical care, are concerned about patient safety risks, and strive to deliver timely medical assistance. This dedication places doctors in a difficult position, balancing protocol compliance with the need to maintain a caring demeanor. Although healthcare providers' complaints have often been overlooked, it is clear that doctors, as key stakeholders, share in the frustration arising from patient dissatisfaction with medical services. Therefore, during the future outburst of EIDs, policymakers and clinical professionals should take consideration of supporting strategies of improvements of acceptance and compliance for regulations and policies, avoiding the deteriorate of physician-patient relationship.

The mortality rate among patients who registered COVID-19-related complaints themselves was higher compared to those for whom physicians lodged complaints. This observation aligns with literature suggesting that patient satisfaction can influence clinical outcomes [8]. The decline in death rates from 2020 to 2021 can be associated with a confluence of factors: prompt government response, increased public vigilance regarding self-protection, refinements in therapeutic approaches, burgeoning medical expertise concerning the virus, and the rollout of vaccines [19, 20]. However, the subsequent pronounced increase in mortality—markedly the pronounced spike in 2023—might be associated with the enactment of the "dynamic zero-COVID" policy coupled with the easing of erstwhile stringent containment measures [14]. Moreover, a higher mortality rate was observed in patients who personally filed complaints, in contrast to those whose issues were conveyed by healthcare providers. This highlights the critical need for rapid and effective redressal of COVID-19-related patient complaints to elevate care quality. By acknowledging and addressing patient concerns without delay, healthcare systems can cultivate an environment of transparency and patient-centricity, which, in turn, bolsters health management practices—potentially mitigating mortality and enhancing patient well-being, especially amid public health emergencies [21].

The high proportion of complaint within a particular demographic subgroup may pinpoint the higher demands and medical overburden during the EIDs. Consistent with previous study, the results found older men would more frequently demand health services and perform hegemonic masculine characteristics (e.g. hostile, dictatorial, and impatient) [22]. The emergency department serves as the initial point of care for individuals who are experiencing critical illness. Nevertheless, in order to mitigate the propagation of the epidemic, the emergency department entails a multitude of intricate procedures, which consequently give rise to the most intense and conspicuous conflicts between medical practitioners and patients. Moreover, without the accompanying of families due to restrictions of visits, [23, 24] there were increased conflicts and might be potential risks for the medical safety in terms of the critically infected individuals in department of infectious diseases and the vulnerable patients in the psychology department. Notably, issues related to healthcare access constituted the second most prevalent concern among COVID-19-related complaints, including denial of care and provision of substandard care, potentially linked to the social stigma associated with this EID [25, 26]. A qualitative study from Malaysia revealed that individuals facing stigma were at greater risk of experiencing intense mental distress and were more vulnerable to external pressures [27]. This study emphasized that tackling stigma effectively during EIDs required comprehensive strategies involving multi-sectoral stakeholder collaboration, offering a novel perspective on mitigating stigma in such contexts [27]. In light of this, during health crises, effective strategies might comprise clear and reliable information disseminated by official media, compassionate governmental policies, considerate healthcare regulations, and the provision of empathetic and understanding care by healthcare providers.

This is the first analysis about the bilateral complaints voiced by patients and medical workers, utilizing the complaint records in the course of COVID-19 and providing helpful insights towards the trends, characteristics and managements of complaints during the prevalence of EIDs. In the context of EIDs crisis where the healthcare system characterized by complexity, fragmentation, and frequent changes, it is plausible that inpatients and physicians would serve as the primary observers of medical care delivery. The collection of recorded complaints presents a valuable opportunity to not only identify patients' needs, but also gain insights that can enhance the quality of medical services by identifying root causes and developing prevention plans during EIDs [28]. Therefore, it is worthy of consideration that policymakers adjust and optimize the prevention countermeasure based on the real-time analysis of complaints in the early stage of EIDs. Further research to verify the analysis methods and effects are warranted.

There are several limitations of this viewpoint. First, this study, being descriptive in nature, is limited in its ability to establish a causal relationship between patient complaints and inpatient prognosis, as well as to generalize its findings to a broader population. Second, the reliance on text mining methods may introduce a degree of subjective bias in understanding and categorizing the content of complaints. Additionally, because this study

was conducted within a single hospital, the unique internal management policies and culture of the hospital may result in complaint characteristics and trends that differ from those in other healthcare institutions, thereby limiting the external validity of the study findings. Moreover, a comparative analysis of mortality rates was not performed between hospitalized patients presenting with complaints and those who did not. This study exclusively concentrated on the population of inpatients and did not conduct an analysis of outpatients, despite the fact that outpatient medical services were affected by EIDs. Finally, the limitation of the data collection period might affect the generalizability of the results, and the availability of incomplete prognosis data may impact the representativeness of the demographic data analysis results.

Conclusion

During the COVID-19 pandemic, there has been a notable rise in the number of complaints voiced by both medical professionals and patients. These incident reports can be considered as a preliminary source of information for examining and documenting the potential risks and limitations associated with policies related to EIDs. Prompt collection and systematical analysis of patient and physician feedback may have potential for accurately evaluating the efficacy and repercussions of these policies. Therefore, the adoption of complaints-based assessment might improve the healthcare quality and patient experience in forthcoming healthcare environments grappling with EIDs.

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s12879-024-09680-8.

Supplementary Material 1

Acknowledgements
Not applicable.

Author contributions
XF and PL were responsible for conceptualization, methodology, data curation, formal analysis, original draft writing and editing. XH, YP, and RZ contributed to the development of methodology, data collection, formal analysis and supervision, and reviewed and edited the manuscript. WL, TZ and GC provided the conceptualization, conducted the design of methodology and project administration and reviewed the manuscript. PL and TZ obtained acquisition of the financial support for the project.

Funding
This study was funded by the National Natural Science Foundation of China (72207174 to PL), the China Postdoctoral Science Foundation (2022M722262 to PL), Natural Science Foundation of Sichuan Province (2023NSFSC0512 to TZ), the Postdoctoral Program of West China Hospital, Sichuan University (2023HXBH009 to PL), 1·3·5 project for disciplines of excellence, West China Hospital, Sichuan University (ZYJC21008 to TZ).

Data availability
All data generated or analyzed during this study are included in this published article.

Declarations

Ethics approval and consent to participate
The Ethics Committee of West China Hospital of Sichuan University was exempted as the retrospectively study did not involve any individual information.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

Author details
[1]Department of Anesthesiology, West China Hospital, Sichuan University, Chengdu, Sichuan, China
[2]Laboratory of Anesthesia and Critical Care Medicine, West China Hospital, National-Local Joint Engineering Research Centre of Translational Medicine of Anesthesiology, Sichuan University, Chengdu, Sichuan, China
[3]West China Hospital, The Research Units of West China (2018RU012)-Chinese Academy of Medical Sciences, Sichuan University, Chengdu, Sichuan, China
[4]Department of Medical General, West China Hospital, Sichuan University, Chengdu, Sichuan, China
[5]Department of Respiratory and Critical Care Medicine, West China Hospital, Sichuan University, Chengdu, Sichuan, China
[6]Institute of Respiratory Health, Frontiers Science Center for Disease-related Molecular Network, West China Hospital, Sichuan University, Chengdu, Sichuan, China
[7]West China Hospital, President's Office, Sichuan University, Chengdu, Sichuan, China

Received: 16 August 2023 / Accepted: 29 July 2024
Published online: 07 August 2024

References

1. Adhiyaman V, Hobson P. What is the impact of COVID-19 on complaints against doctors? Clin Med (Lond). 2022;22(2):187–8.
2. Meyer D, Bishai D, Ravi SJ, Rashid H, Mahmood SS, Toner E et al. A checklist to improve health system resilience to infectious disease outbreaks and natural hazards. BMJ Glob Health. 2020;5(8).
3. Bayer S, Kuzmickas P, Boissy A, Rose SL, Mercer MB. Categorizing and Rating Patient complaints: an innovative Approach to improve patient experience. J Patient Exp. 2021;8:2374373521998624.
4. Council GM. Raising and acting on concerns about patient safety. General Medical Council; 2012.
5. The West China Hospital. Available from: http://www.wchscu.cn/details/50453.html
6. Li P, Zhu Y, Wang Y, Liu X, Fang X, Hou Y, et al. Impact of the COVID-19 pandemic on cancer healthcare utilization in southwestern China on March 2021. Cancer Med. 2023;12(12):13821–33.
7. The Lancet Regional Health-Western P. The end of zero-COVID-19 policy is not the end of COVID-19 for China. Lancet Reg Health West Pac. 2023;30:100702.
8. Sacks GD, Lawson EH, Dawes AJ, Russell MM, Maggard-Gibbons M, Zingmond DS, et al. Relationship between Hospital Performance on a patient satisfaction Survey and Surgical Quality. JAMA Surg. 2015;150(9):858–64.
9. Fisher D, Teo YY, Nabarro D. Assessing national performance in response to COVID-19. Lancet. 2020;396(10252):653–5.
10. van Dael J, Reader TW, Gillespie A, Neves AL, Darzi A, Mayer EK. Learning from complaints in healthcare: a realist review of academic literature, policy evidence and front-line insights. BMJ Qual Saf. 2020;29(8):684–95.
11. McCreaddie M, Benwell B, Gritti A. A qualitative study of National Health Service (NHS) complaint-responses. BMC Health Serv Res. 2021;21(1):696.
12. McCreaddie M, Benwell B, Gritti A. Traumatic journeys; understanding the rhetoric of patients' complaints. BMC Health Serv Res. 2018;18(1):551.
13. Portal CPsGoCW. Why insist on dynamic zeroing? http://www.gov.cn/xinwen/2022-04/29/content_5688064.htm (accessed January19, 2023).

14. Zhang M, Wang Y, Zhang T, Zhou J, Deng Y, Wang L, et al. Status of and perspectives on COVID-19 vaccination after lifting of the dynamic zero-COVID policy in China. Glob Health Med. 2023;5(2):112–7.
15. Zhou Y, Ma Y, Yang WFZ, Wu Q, Wang Q, Wang D, et al. Doctor-patient relationship improved during COVID-19 pandemic, but weakness remains. BMC Fam Pract. 2021;22(1):255.
16. Xu B. The impact of COVID-19 on the doctor-patient relationship in China. Front Public Health. 2022;10:907009.
17. Sturmey G, Wiltshire M. Patient perspective: Gordon Sturmey and Matt Wiltshire. BMJ (Clinical research ed).369:m1814.
18. Nwoga HO, Ajuba MO, Ezeoke UE. Effect of COVID-19 on doctor-patient relationship. Int J Community Med Public Health.7(12):4690.
19. Wiersinga WJ, Rhodes A, Cheng AC, Peacock SJ, Prescott HC. Pathophysiology, transmission, diagnosis, and treatment of Coronavirus Disease 2019 (COVID-19): a review. JAMA. 2020;324(8):782–93.
20. Ssentongo P, Ssentongo AE, Voleti N, Groff D, Sun A, Ba DM, et al. SARS-CoV-2 vaccine effectiveness against infection, symptomatic and severe COVID-19: a systematic review and meta-analysis. BMC Infect Dis. 2022;22(1):439.
21. Friele RD, Sluijs EM, Legemaate J. Complaints handling in hospitals: an empirical study of discrepancies between patients' expectations and their experiences. BMC Health Serv Res. 2008;8:199.
22. Juster RP, Lupien S. A sex- and gender-based analysis of allostatic load and physical complaints. Gend Med. 2012;9(6):511–23.
23. Pirhonen J, Forma L, Pietilä I. COVID-19 related visiting ban in nursing homes as a source of concern for residents' family members: a cross sectional study. BMC Nurs. 2022;21(1):255.
24. Yeh TC, Huang HC, Yeh TY, Huang WT, Huang HC, Chang YM, et al. Family members' concerns about relatives in long-term care facilities: Acceptance of visiting restriction policy amid the COVID-19 pandemic. Geriatr Gerontol Int. 2020;20(10):938–42.
25. Nyblade L, Stockton MA, Giger K, Bond V, Ekstrand ML, Lean RM, et al. Stigma in health facilities: why it matters and how we can change it. BMC Med. 2019;17(1):25.
26. Kane JC, Elafros MA, Murray SM, Mitchell EMH, Augustinavicius JL, Causevic S, et al. A scoping review of health-related stigma outcomes for high-burden diseases in low- and middle-income countries. BMC Med. 2019;17(1):17.
27. Chew CC, Lim XJ, Chang CT, Rajan P, Nasir N, Low WY. Experiences of social stigma among patients tested positive for COVID-19 and their family members: a qualitative study. BMC Public Health. 2021;21(1):1623.
28. Gallagher TH, Mazor KM. Taking complaints seriously: using the patient safety lens. BMJ Qual Saf. 2015;24(6):352–5.

Publisher's Note