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Loneliness among physicians: A narrative and bibliometric analysis of an emerging public health crisis

ექიმთა მარტოობა როგორც საზოგადოებრივი ჯანდაცვის მზარდი კრიზისი: ნარატიული და ბიბლიომეტრიული ანალიზი

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Abstract

Introduction: Loneliness among physicians is emerging as a critical yet understudied public health issue. Traditionally associated with resilience and competence, the medical profession now faces a hidden epidemic of professional and emotional isolation, exacerbated by systemic dysfunctions and amplified during the COVID-19 pandemic. This scoping review aims to conceptually and bibliometrically map the current scientific literature on physicians' loneliness, investigating its multidimensional nature, clinical impact, systemic roots, and potential as a latent public health crisis. **Methods:** A systematic scoping review was conducted using Scopus and Google Scholar, with searches centered on the term "loneliness" and extended to related concepts, including burnout, professional isolation, and depression in physicians. Articles published between 2014 and 2025 were screened. **Results:** The findings reveal that physicians experience a unique form of loneliness rooted in institutional fragmentation, emotional suppression, work overload, and disrupted peer networks. Key themes include stigma around mental vulnerability, systemic bureaucratization, and decreased empathy, leading to burnout, impaired decision-making, and reduced care quality. Bibliometric mapping showed four major conceptual clusters: psychological/emotional impact, systemic barriers, methodological consolidation, and educational shortcomings. The centrality of the term "loneliness" in the network suggests its epistemic importance, yet also exposes a gap: few studies focus explicitly on healthcare professionals as a distinct subgroup. **Conclusions:** Physicians' loneliness represents more than an individual emotional state—it is a systemic indicator of relational and institutional breakdown within healthcare. This condition, if unaddressed, may evolve into a public health crisis marked by clinician attrition, diminished care quality, and organizational instability. Policies must shift from treating symptoms (e.g., depression or burnout) to addressing upstream relational and systemic causes. Proactive organizational interventions, relational audits, and mental health support programs must be integrated into health systems to safeguard both clinicians and patients.

Keywords: loneliness, physicians, burnout, professional isolation, mental health, COVID-19, healthcare system, bibliometric analysis, narrative synthesis, public health crisis.

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აბსტრაქტი

შესავალი: ექიმთა შორის მარტოობა კრიტიკულ, თუმცა კვლავაც არასაკმარისად შესწავლილ საზოგადოებრივი ჯანდაცვის პრობლემად ყალიბდება. პროფესია, რომელიც ტრადიციულად ასოცირდება გამძლეობასა და კომპეტენტურობასთან, ახლა ემუქრება პროფესიული და ემოციური იზოლაციის ფარული ეპიდემია — გამწვავებული სისტემური დისფუნქციებითა და განსაკუთრებით გამოხატული COVID-19-ის პანდემიის დროს. ეს სკოპინგ-რევიუ მიზნად ისახავს სამეცნიერო ლიტერატურის კონცეპტუალურ და ბიბლიომეტრიულ რუკას, რათა გამოიკვეთოს ექიმთა მარტოობის მრავალგანზომილებიანი ბუნება, კლინიკური გავლენა, სისტემური ფესვები და პოტენციალი, როგორც ლატენტური საზოგადოებრივი ჯანდაცვის კრიზისი. **მეთოდები:** ჩატარდა სისტემური სკოპინგ-რევიუ, გამოყენებული იყო ბაზები Scopus და Google Scholar. ძიება ეფუძნებოდა ტერმინს "loneliness" (მარტოობა) და მასთან დაკავშირებულ ცნებებს, როგორიცაა "burnout" (გადაწვა), "professional isolation" (პროფესიული იზოლაცია) და "depression" (დეპრესია) ექიმებში. შესწავლილ იქნა 2014-2025 წლებში გამოქვეყნებული სტატიები. **შედეგები:** შედეგებმა აჩვენა, რომ ექიმები განიცდიან მარტოობის უნიკალურ ფორმას, რომელიც მომდინარეობს ინსტიტუციური დეფრაგმენტაციისგან, ემოციური ჩახშობისგან, გადატვირთული სამუშაოსგან და პროფესიული ქსელების დარღვევისგან. ძირითადი თემებია: მენტალურ სიბრკულტეზე არსებული სტიგმა, სისტემური ბიუროკრატიზაცია და ემპათიის დაქვეითება, რაც იწვევს პროფესიულ გადაწვას, გადაწყვეტილებების ხარისხის შემცირებას და მოვლის ეფექტიანობის შემცირებას. ბიბლიომეტრიულმა ანალიზმა გამოკვეთა ოთხი ძირითადი კონცეპტუალური კლასტერი: ფსიქოლოგიური/ემოციური გავლენა, სისტემური ბარიერები, მეთოდოლოგიური კონსოლიდაცია და საგანმანათლებლო ხარვეზები. ტერმინ “მარტოობის” ცენტრალურობა ქსელურ რუკაზე ხაზს უსვამს მის ეპისტემურ მნიშვნელობას, თუმცა ამავდროულად აჩვენებს ლიტერატურულ ნაკლს: მხოლოდ მცირე რაოდენობის კვლევები ფოკუსირდება ჯანდაცვის პროფესიონალებზე, როგორც ცალკეულ ქვეჯგუფზე. **დასკვნები:** ექიმთა მარტოობა არ წარმოადგენს მხოლოდ ინდივიდუალურ ემოციურ მდგომარეობას - იგი სისტემური მაჩვენებელია ჯანდაცვის სფეროში ურთიერთობებისა და ინსტიტუციური სტრუქტურების რღვევისა. თუ ეს მდგომარეობა არ იქნება დროულად ამოცნობილი და მართვადი, ის შესაძლოა გადაიზარდოს საზოგადოებრივ ჯანდაცვაში სერიოზულ კრიზისად, რაც გამოიხატება ექიმთა მასობრივ გადინებაში, მომსახურების ხარისხის ვარდნასა და ორგანიზაციულ დესტაბილიზაციაში. პოლიტიკურმა რეაგირებამ უნდა გადაინაცვლოს სიმპტომების მართვიდან (მაგალითად, დეპრესია ან გადაწვა) ძირეული - ურთიერთობითი და სისტემური - მიზეზების აღმოფხვრისკენ. აუცილებელია ჯანდაცვის სისტემებში ინტეგრირდეს პროაქტიური ორგანიზაციული ჩარევა, ურთიერთობის აუდიტები და მენტალური ჯანმრთელობის მხარდამჭერი პროგრამები როგორც ექიმების, ასევე პაციენტების უსაფრთხოებისთვის.

საკვანძო სიტყვები: მარტოობა, ექიმები, გადაწვა, პროფესიული იზოლაცია, მენტალური ჯანმრთელობა, COVID-19, ჯანდაცვის სისტემა, ბიბლიომეტრიული ანალიზი, ნარატიული სინთეზი, საზოგადოებრივი ჯანდაცვის კრიზისი.

ციტატა: რადუ-მიჰაი დუმიტრესკუ. ექიმთა მარტოობა როგორც საზოგადოებრივი ჯანდაცვის მზარდი კრიზისი: ნარატიული და ბიბლიომეტრიული ანალიზი. ჯანდაცვის პოლიტიკა, ეკონომიკა და სოციოლოგია. ჯანდაცვის პოლიტიკა, ეკონომიკა და სოციოლოგია, 2025; 9 (1). https://doi.org/10.52340/healthecosoc.2025.09.01.08.

Introduction

The medical profession has traditionally been associated with high levels of responsibility (Lasalvia et al., 2021), occupational stress, and emotional pressures (Galbraith et al., 2021). However, in recent decades,

it has become increasingly apparent that physicians face not only clinical or bureaucratic difficulties (Plochg et al., 2009), but also a profound form of professional and personal isolation (Kerasidou & Horn, 2016a). The COVID-19 pandemic acted as a revelatory factor not only for burnout (Jalili et al., 2021), bringing to the forefront a pre-existing phenomenon - physician loneliness - and exacerbating it through distancing measures (Cudjoe & Kotwal, 2020), healthcare system overload (Rotenstein et al., 2023), and constant exposure to suffering (Kreh et al., 2021) and difficult ethical decisions (Robert et al., 2020).

This loneliness, with multiple dimensions (emotional, relational, institutional), has the potential to affect not only the well-being of physicians (Ceri & Cicek, 2021), but also the quality of medical care (Alwashmi & Alkhamees, 2021), patient safety (Garcia et al., 2019), the physician-patient relationship (Anand, 2019), clinical decisions and, by extension, the functioning of the healthcare system as a whole. The persistence and transformation into a chronic situation of this phenomenon may contribute to the emergence of a new health crisis, a latent and systemic one, impacting public health through the decline of medical human resources, increased burnout and decreased trust in the system.

This scope review aims to map the existing scientific literature on this complex phenomenon. The selected scientific articles have been analyzed narratively, following some major themes (which will be detailed in the methodology section), as well as to build a bibliometric picture of the scientific discourse. For the bibliometric analysis, we used the VOSviewer tool, focusing on the conceptual node of "loneliness". This term was used strategically to capture not only formalized clinical manifestations (e.g., depression, anxiety), but also those less explored areas describing professional alienation, fragmentation of collegial relationships, and erosion of medical identity - all of which influence medical practice in insidious but profound ways.

Through this dual approach - narrative and bibliometric - we aim to provide an integrated perspective on physician loneliness, to identify recurrent themes and research gaps, and to substantiate the need for systemic interventions that go beyond individual treatments of psychiatric symptomatology.

Methodology

The present research follows the scoping review model, aiming to conceptually and bibliometrically map the scientific literature on the phenomenon of loneliness among doctors. The methodological process was designed to ensure a broad thematic coverage and a rigorous selection of relevant sources.

Data sources and search strategy

The queries were carried out in two scientific databases: Scopus, recognized for its rigorous indexing, and Google Scholar, used complementarily to include literature possibly not indexed in the main sources but relevant to the field of interest.

The starting point was the keyword "loneliness", around which an extended search strategy was built by adding determinant terms, used to cover the main themes identified. The search strategy, together with the combinations of terms and Boolean operators used, is detailed in a separate table (Table 1).

Thematic areas pursued

The literature was investigated according to the following main themes, identified following a preliminary analysis and the theoretical framework of the research:

- Multidimensional definition of loneliness;
- Differences in physician isolation compared to the general population;
- Occupational burnout and depression in physicians compared to the general population;
- The impact of the COVID-19 pandemic on doctors' mental health;
- Doctors' professional social isolation: shift work, vital decisions, work-life imbalance;
- The breakdown of social support networks and the role of bureaucratic systems;
- Stigmatization of vulnerability in the medical culture and avoidance of psychological help;
- The looming public health crisis caused by the isolation of doctors;
- Public policy directions and possible interventions for crisis prevention.

These themes guided the selection and narrative coding of the articles included in the analysis.

Selection and inclusion criteria

Eligible articles were: written in English, published between 2014 and 2025 directly or indirectly addressing the phenomenon of loneliness in the medical profession (including in relation to burnout, depression, professional social isolation or organizational cultures).

For each theme, between 53 and 87 articles were selected according to relevance, conceptual coherence and source quality. From the initial total of 1012 articles identified, 816 articles were included in the bibliometric analysis. The following were excluded: articles lacking essential bibliographic data (title, abstract, keywords), articles in preprint format, publications that were not indexed in the Scopus database.

Analytical tools and procedures

Bibliographic data were managed using Mendeley Desktop and exported to a .RIS file. This file was subsequently imported and analyzed using the VOSviewer application to construct co-occurrence networks of terms and thematic connections. The analysis was centered on the conceptual node "loneliness", considered relevant both for clinical interpretations (depression, anxiety) and for the less formal dimensions of professional alienation and social isolation. The search strategy for the relevant articles involved the use of descriptive terms for each theme, along with the word "loneliness" in various combinations. The general search strategy is schematized in Table 1. The logical operators "AND", "OR" (for exact expressions) were used in both databases. In Google Scholar, additional filters were applied for year of publication (2014-2025) and for English. In Scopus, searches were performed in the fields: Title, Abstract, Keywords.

The results obtained were interpreted in parallel with the narrative content analysis, providing a complementary picture of the distribution and evolution of scientific interest towards the phenomenon of doctors' loneliness.

Table 1: General search strategy for relevant articles

Main theme	Search terms	Operators and combinations
Defining loneliness	"loneliness" OR "social isolation" OR "professional isolation"	AND "definition" OR "dimensions" OR "types"
Doctor isolation vs. general population	"loneliness" AND "doctors" OR "doctors" OR "medical staff"	AND "comparison" OR "general population"
Burnout and depression	"burnout" OR "depression" OR "mental health"	AND "doctors" AND "loneliness"
Pandemic COVID-19	"COVID-19" OR "SARS-CoV-2"	AND "healthcare workers" AND ("burnout" OR "isolation")
Professional social isolation	"work shifts" OR "decision pressure" OR "work-life balance"	AND "physicians" AND "isolation"
Red tape and social networks	"bureaucracy" OR "administrative burden"	AND "support networks" AND "physicians"
Stigmatizing vulnerability	"stigma" OR "psychological help" OR "resilience culture"	AND "physicians"
Foreshadowing the crisis	"crisis" OR "public health" OR "systemic costs"	AND "doctors" AND "loneliness"
Public policies	"health policy" OR "interventions" OR "organizational change"	AND "physicians" AND "wellbeing"

Results and discussions

The multidimensional definition of loneliness

Loneliness, a complex and multifaceted experience, can be analyzed from various perspectives, including medical, sociological, psychological and philosophical. Each discipline offers unique insights into the nature and implications of loneliness, enhancing our understanding of how this phenomenon affects individuals and societies.

Medical perspective: From a medical perspective, loneliness is often linked to various chronic conditions and is considered a significant risk factor for physical and mental health problems. Research indicates that loneliness can lead to increased blood pressure, decreased immune functioning, and higher levels of psychological distress, such as anxiety and depression (Petitte et al., 2015)(Lawlor et al., 2024). A

review demonstrates that loneliness contributes to adverse health outcomes, highlighting the importance of recognizing it as a public health problem akin to social isolation (Lawlor et al., 2024). The link between loneliness and physical health is further supported by studies showing that loneliness frequently coexists with chronic conditions, highlighting the need for medical interventions to address this emotional state (Petitte et al., 2015)(Theeke et al., 2015).

Sociological perspective: Sociologically, loneliness is understood as a social construct deeply influenced by individual experiences and wider social structures. Studies emphasize the role of social networks and community involvement in alleviating feelings of loneliness; people with strong social ties often report lower levels of loneliness (Choi et al., 2021). In addition, loneliness may be exacerbated by social changes, such as urbanization and technological advances, which disrupt traditional social ties (Tan et al., 2022). The sociological perspective posits that loneliness is not merely an individual distress but a condition shaped by shared social realities and cultural norms, thus emphasizing the need for collective strategies to promote social connectivity (Sun et al., 2022)(Power et al., 2018).

Psychological perspective: From a psychological perspective, loneliness is frequently conceptualized as a painful emotional experience resulting from the gap between desired and perceived social relationships (S. Li et al., 2023). Theories, including Erikson's developmental stages theory, suggest that feelings of loneliness may intensify during critical life transitions (J. Li et al., 2023). Furthermore, maladaptive coping mechanisms in response to loneliness illustrate the complex interplay between emotional regulation and psychological distress (Tan et al., 2022)(Bentley et al., 2022). This perspective emphasizes the need for psychological interventions focused on improving social skills and addressing underlying mental health issues that contribute to loneliness (Finley & Schaefer, 2022).

Philosophical perspective: Philosophically, loneliness invites deep reflection on the nature of human existence, belonging and connectedness. Scholars have debated the existential dimensions of loneliness, often framing it as an inherent aspect of the human condition that can lead to profound self-discovery and personal growth (Bolmsjö et al., 2019). Existential loneliness transcends mere social disconnection, representing a deeper search for meaning and understanding of one's place in the universe, from both individual and collective perspectives (Power et al., 2018). Philosophers argue that engaging in solitude in an assumed and mindful way can promote greater empathy and connection between individuals, transforming it from a purely negative experience into an opportunity for reflection and relational growth (Rotger, 2024).

Loneliness is not a singular phenomenon but a complex interaction of medical, sociological, psychological and philosophical factors. Each discipline offers valuable insights that collectively enrich our understanding of loneliness and emphasize the importance of addressing loneliness through multidimensional approaches.

Differences in doctors' self-insurance compared to the general population

The loneliness experienced by physicians differs significantly from that of the general population, shaped by the unique and often challenging realities of their professional lives. Research indicates that medical professionals, particularly physicians, face distinct stressors that contribute to heightened feelings of loneliness compared to other professional groups (Wei et al., 2023)(Dodoo et al., 2021).

Increased professional isolation: A major factor contributing to doctors' isolation is the structure of their work environment. The demanding nature of medical practice, often characterized by high workload and long hours, leads to reduced social interactions with colleagues and other members of their social groups, especially during complicated shifts or on-call hours. This professional isolation is exacerbated by the stigma associated with mental health problems in the medical field, where vulnerability can be seen as a weakness (Dodoo et al., 2021)(Lawlor et al., 2024). One study reported that GPs recognized that high levels of burnout significantly impaired their ability to foster meaningful connections with colleagues (Dodoo et al., 2021). This isolation is not just a result of work-related stress, but a systematic feature of the medical profession that can inhibit the maintenance of social relationships, contributing to feelings of loneliness (Lawlor et al., 2024).

Stigmatizing vulnerability: Physicians also face a unique form of loneliness exacerbated by cultural expectations of their role, where emotional stoicism is often expected. As described in the literature, physicians may struggle with acknowledging their own feelings of loneliness due to fears of judgment from colleagues or perceptions of unprofessionalism in these contexts (Riley et al., 2021). This internal conflict can create a cycle of isolation as physicians refrain from seeking support or discussing their emotional struggles (Hanganu & Ioan, 2022). In addition, frequent exposure to patients' suffering can lead to empathic exhaustion,

further isolating health professionals from their colleagues as they struggle with the emotional impact of their work and exposure to the suffering of their peers (Maliha et al., 2025).

Mental Health Consequences: The implications of loneliness among physicians are significant, often manifesting in increased rates of mental health conditions such as depression and anxiety. Studies have shown that physicians suffer from depression at rates that may exceed those in the general population, illustrating a vital area of concern for medical institutions (Maliha et al., 2025)(Qin et al., 2023). For example, resident physicians have reported substantial levels of loneliness and associated mental health disorders, exacerbating the stress of their training and workplace conditions (Wei et al., 2023). The intersection of loneliness and burnout can severely affect job satisfaction and may even lead to leaving this career, indicating a profound public health problem within the medical community (Dodoo et al., 2021)(Riley et al., 2021).

Unique coping mechanisms: Physicians' coping strategies may also differ from those of the general population. While people outside the medical field may rely on social circles for support, physicians may avoid professional networks or even shut themselves in, perpetuating a cycle of isolation. Physicians' professional identities are often intertwined with their emotional well-being, complicating their ability to seek help, as they may prioritize patient care over self-care(Maliha et al., 2025)(Riley et al., 2021).

The loneliness experienced by physicians is characterized by professional isolation, stigmatization of vulnerability, significant mental health consequences and unique coping mechanisms. Taken together, these factors create an environment in which doctors can feel particularly lonely, despite being surrounded by patients and colleagues. Addressing this issue requires a cultural change within the medical profession that encourages open dialog about mental health and promotes supportive working environments.

Burnout and depression among doctors compared to the general population

Burnout and the occurrence of depressive disorders among physicians are significantly higher compared to the general population and may be attributable to several specific factors associated with the medical profession. The unique characteristics of medical practice create a challenging environment that exacerbates stress, leading to significant mental health problems.

Prevalence of burnout and depression: Statistical analyses indicate that burnout among doctors is alarmingly widespread. Research has shown that approximately 54% of physicians exhibit at least one symptom on the burnout spectrum, which includes emotional exhaustion, depersonalization, and reduced sense of personal accomplishment (Erschens et al., 2022). In addition, studies reveal that levels of burnout are significantly higher among healthcare professionals, particularly in demanding fields such as emergency medicine and primary care, where direct interaction with patients is common (Yuguero et al., 2018)(Zheng et al., 2022). For example, a systematic review and meta-analysis indicated that the prevalence of burnout among physicians in selected regions of China approached 87.8%, highlighting the significant psychological demands placed on physicians (W. Xu et al., 2020).

Factors contributing to increased burnout: Several factors contribute to high levels of burnout among doctors. Demanding workloads, long working hours, and the high-stakes environment of healthcare contribute to significant stress. For example, one study indicated that during the COVID-19 pandemic, more than half of healthcare workers reported symptoms of burnout, with excessive workload emerging as a key determinant of emotional exhaustion (Yagci et al., 2021)(Nowińska et al., 2021). In addition, continued exposure to patients' distress, coupled with chronic work-related stress, exacerbates the mental health challenges faced by clinicians (Alwashmi & Alkhamees, 2021)(R. S. McCain et al., 2018).

Impact of professional environment: The medical profession often lacks systemic support for mental health problems, leading to a culture in which vulnerability is stigmatized. Studies indicate that physicians frequently report feeling isolated and unsupported in their workplace, which can exacerbate feelings of loneliness and depression (Rashid & Talib, 2015)(Walsh et al., 2019). One study found that health professionals often feel compelled to manage their individual stress rather than seek support, which can worsen their psychological well-being (Walsh et al., 2019). In addition, the pressure to maintain high performance and avoid errors creates an anxiety-filled environment, contributing to both burnout and depressive states (Reith, 2018)(Winkel et al., 2018).

Implications for patient care: the consequences of burnout extend beyond the individual, having a significant impact on patient care and safety. Among physicians experiencing high levels of burnout, there is an increased risk of medical errors and a decrease in the quality of care provided (Alwashmi & Alkhamees, 2021)(S. McCain et al., 2017). The link between physician burnout and negative patient outcomes is well

established in the literature, highlighting the urgent need for intervention strategies within health systems to address this pervasive problem (Winkel et al., 2018)(Lee et al., 2021).

Higher rates of burnout and depression among physicians compared to the general population are influenced by a confluence of factors: the demanding nature of medical work, the expectations of the professional environment and a culture that often discourages emotional openness. Understanding these factors is essential for the design of effective support strategies to mitigate the mental health challenges faced by health professionals.

The covid-19 pandemic and the problem of burnout and depression among doctors

The COVID-19 pandemic has significantly exacerbated existing problems of burnout and depression among health professionals, a situation that preceded the crisis and continues to persist post-pandemic. The increased demands and stress caused by the pandemic have highlighted systemic challenges in healthcare that contribute to these mental health problems.

Pre-existing conditions: Before the pandemic, the prevalence of burnout and mental health problems among physicians was already alarming. Reports indicated that approximately 50% of physicians were experiencing at least one symptom of burnout, with similar or higher rates reported in various studies across different specialties (Erschens et al., 2022). Factors such as relentless workload, emotional exhaustion from patient care, and inadequate support resources were frequently cited as contributing to this distress (Yuguero et al., 2018)(Zheng et al., 2022). These findings demonstrated that the healthcare workforce was under significant psychological strain long before the pandemic began.

Pandemic-induced exacerbation: As the COVID-19 pandemic unfolded, these pre-existing conditions intensified. The overwhelming influx of patients, coupled with fears for their health and the health of their families, placed healthcare professionals in a position of unprecedented stress (Nowińska et al., 2021)(Alwashmi & Alkhamees, 2021). A systematic review found that healthcare workers, particularly physicians, experienced increasing levels of burnout and depression during the pandemic, largely due to increased work demands and reduced opportunities for social support (R. H. Xu et al., 2020). Studies have reported burnout rates of over 80% in specific groups such as emergency and intensive care physicians (Nowińska et al., 2021).

The impact of isolation and working environment: The isolation imposed by the closure measures further complicated the already fragile mental health situation of health care workers. Clinicians faced unprecedented levels of emotional and social isolation, navigating deep feelings of inadequacy, helplessness and anxiety, often in silence due to the stigma surrounding mental health issues within the medical community (Rashid & Talib, 2015)(Walsh et al., 2019). Research has found that environmental pressures and social distancing restrictions have had a significant impact on doctors' mental health, contributing to increased feelings of isolation and depression (Yagci et al., 2021)(Alwashmi & Alkhamees, 2021).

The post-pandemic mental health situation: Even though the pandemic has passed, mental health repercussions remain. Evidence indicates persistently high rates of burnout and mental health problems among health professionals (Buecker & Horstmann, 2021). The realization that pre-pandemic problems were exacerbated during the pandemic has prompted increased calls for institutional changes within health systems to provide better support and resources to create a healthier work environment in the future (Winkel et al., 2018).

While burnout and depression among healthcare professionals were significant issues prior to COVID-19, the pandemic acted as a magnifying glass, revealing the depth of these challenges and highlighting the critical need for systemic changes in the healthcare environment to address these long-term effects.

Doctors' professional social isolation (shift work, pressure of vital decisions, lack of time for personal life) and disruption of social support networks

Doctors' professional social isolation results from various factors such as shift work, pressure to make critical decisions and lack of time to invest in personal and social networks. This isolation can have profound implications, leading to a deterioration in mental health and job satisfaction among health professionals.

Shift work and its consequences: The demanding nature of shift work in medicine contributes significantly to the social isolation faced by doctors. Irregular working hours and night shifts often disrupt personal lives and impede the ability to maintain social relationships (Gu et al., 2023)(Bunevičienė & Bunevičius, 2020). The combined stress of these irregular schedules can lead to job dissatisfaction and

negatively affect mental well-being, causing health care providers to seek solace in maladaptive coping strategies, such as internet addiction, which is particularly prevalent among junior doctors (Bunevičienė & Bunevičius, 2020). Lack of regular social interaction can exacerbate feelings of loneliness, further reinforcing their isolation within the healthcare environment (Schwartz et al., 2020).

Vital decision pressure: Physicians frequently face high-stakes situations that require rapid and critical decision-making. This continuous pressure not only affects their professional lives, but also has a significant impact on their emotional health, often leading to burnout and depression (Lemaire et al., 2018)(Liu et al., 2023). The stress associated with making such decisions can create barriers to seeking support from colleagues, as physicians may feel compelled to maintain an image of competence and power. The emotional impact of daily decision-making responsibilities can create a disconnect between physicians and their support networks, manifesting as increased tension in their professional relationships and contributing to feelings of isolation (Lemaire et al., 2018).

Lack of time for personal life: Physicians' demanding schedules and responsibilities result in limited opportunities to cultivate personal relationships outside of work. Studies indicate that lack of time for personal life leads to neglect of social connections, which are vital for emotional well-being (Zhang et al., 2020)(Lü et al., 2017). This absence of meaningful engagement with friends and family may foster a sense of alienation, as practitioners find it increasingly difficult to balance their professional obligations with personal needs. Consequently, their emotional and mental health may deteriorate, which can further diminish their effectiveness in caring for patients and contribute to the cycle of stress and burnout (Lü et al., 2017)(Lemaire et al., 2018).

Doctors' professional social isolation, caused by shift work, high-pressure decision-making and lack of time for personal life, has profound implications for their mental well-being. Addressing these challenges through systemic changes in healthcare environments, increasing support mechanisms and promoting a healthier work-life balance is key to improving doctors' wellbeing and, in turn, improving patient care.

Professional social isolation of doctors exacerbated by bureaucratized systems

Physicians' professional social isolation is significantly exacerbated by entrenched bureaucratic systems that often reduce these practitioners to executors of predetermined protocols rather than involving them as partners in decision-making. This dynamic contributes to feelings of powerlessness and detachment, having a negative impact on their mental well-being and the quality of patient care.

Bureaucracy in healthcare: The complexity of healthcare systems inherently involves bureaucratic frameworks that, while designed to ensure efficiency and accountability, often lead to environments in which physicians have little autonomy. Research indicates that increased bureaucracy can alienate healthcare providers, limiting their ability to meaningfully engage in clinical decision-making (Ruijter et al., 2021)(Spiers et al., 2021). The dependence of healthcare systems on administrative regulations tends to dominate clinical practice, causing physicians to feel disillusioned and undervalued (Roman et al., 2017). This sense of being reduced to “doers” stems from systemic pressures to adhere to established protocols that prioritize efficiency over professional contribution, which consequently leads to decreased job satisfaction and increased feelings of isolation among physicians (Ruijter et al., 2021).

Impact on doctors' relationships: The bureaucratization of healthcare further disrupts interpersonal relationships within healthcare teams. According to studies, when physicians feel like cogs in a machine, they often alienate themselves from their colleagues and patients alike, leading to a breakdown in communication and teamwork (Riley et al., 2021)(Spiers et al., 2021). Effective collaboration is hindered when frontline clinicians perceive that they do not have the authority to influence patient care decisions (Mountford & Cai, 2022). This creates an environment in which junior doctors, in particular, find it difficult to seek support or mentoring, leading to further isolation and increased stress levels (Gui, 2024)(Spiers et al., 2021). The result is not only professional detachment, but also emotional distance that can negatively affect patient outcomes.

Consequences of reduced decision-making autonomy: Bureaucratic structures often limit physicians' decision-making autonomy, creating psychological distress. Many physicians have reported feeling overwhelmed by expectations to fulfill regulatory requirements, rather than focusing on patient-centered care and collaborative decision making (Berry, 2020). The powerlessness felt by health professionals can lead to increased rates of burnout and mental health problems such as depression and anxiety, in part due to their perceived lack of agency in professional roles (Bhugra et al., 2021). As physicians perceive themselves as mere executors of care rather than as full partners in the health care system, they often struggle to find meaning and satisfaction in their work (Berry, 2020)(Elshikh & Hamouda, 2021).

The bureaucratization of health care contributes significantly to the professional social isolation of doctors by reducing their role to that of executors rather than empowered decision-makers. This systemic problem calls for a reassessment of healthcare practices to promote environments in which physicians' contribution is valued, thereby enhancing not only their professional satisfaction but also the overall quality of care provided to patients.

Stigmatizing vulnerability - avoiding seeking psychological help

The stigmatization of vulnerability among physicians has a significant impact on their willingness to seek psychological help, primarily due to fears of being perceived as weak or incompetent. This dynamic represents a critical barrier to access to mental health care in the medical profession, reinforcing patterns of isolation and distress.

A culture of invulnerability: The medical profession often promotes a culture of invulnerability, in which the expression of vulnerability is discouraged. Research highlights that many physicians view mental illness as a personal failure rather than a legitimate health problem, which is attributed to the stigma associated with mental health within their ranks (Spiers et al., 2018). This stigma causes physicians to frequently hide their emotional struggles, even from their peers, which can exacerbate feelings of loneliness and disconnection (Brooks et al., 2016). The pressure to maintain an unwavering image of competence may discourage health care providers from seeking needed mental health support, which may have serious long-term consequences for their well-being (Đặng & Salcedo, 2023).

Consequences of delayed help-seeking: Reluctance to seek help because of stigma can lead to significant delays in the treatment of mental health problems among physicians. Studies indicate that many physicians delay seeking help until their condition worsens, thereby jeopardizing both their own health and the quality of care they provide to patients (Brooks et al., 2016). For example, a qualitative analysis of physician-patients in the Practitioner Health Program found that the stigma surrounding mental health problems was the main reason physicians delayed seeking help, which not only poses a threat to their individual health, but also undermines the safety and quality of patient care (Brooks et al., 2016). Such findings underscore the damaging cycle in which the stigma of vulnerability leads to untreated mental health problems among physicians.

Impact on mental wellbeing and professional identity: Stigma not only influences the likelihood of seeking help, but also shapes the self-perception and identity of health professionals. Internalizing stigma can lead to self-stigmatization, with physicians feeling ashamed about their mental health problems (Cohen et al., 2016). This self-stigmatization further decreases their willingness to seek help and decreases their effectiveness at work, which can lead to higher burnout rates and decreased job satisfaction (Hayes et al., 2017). Consequently, this fosters a damaging environment in which mental health issues go unaddressed, further perpetuating the cycle of vulnerability and fear.

The stigmatization of vulnerability within the medical profession poses a formidable challenge to the mental health of doctors. This stigma inhibits help-seeking behavior and promotes a culture of silence about mental health problems. Addressing these stigmatizing perceptions through organizational change and supportive interventions is essential to promote an environment in which physicians feel safe to seek help without fear of being considered weak or incompetent.

Stigmatizing vulnerability - medical culture promotes resilience

The medical culture that promotes resilience among doctors often inadvertently stigmatizes any form of vulnerability. This emphasis on resilience can come at a substantial cost - the sacrifice of personal humanity and emotional well-being, which can lead to negative outcomes for both health professionals and their patients.

Resilience a double-edged sword: The medical profession places a great deal of emphasis on resilience, positioning it as an essential attribute for providing high-quality care under pressure. However, this emphasis can lead to internalizing the belief that asking for help or expressing emotional difficulties is a sign of weakness (Chazan, 2015). Such a mindset may create an environment in which clinicians feel compelled to repress their emotions, leading them to believe that they must endure personal hardships alone in order to maintain their professional identity (Keerthi et al., 2021). This protective façade may prevent open discussions about mental health, leading to increased isolation and exacerbation of feelings of burnout and depressive symptoms (Chazan, 2015)(Zhao et al., 2020).

The cost of professionalism: The pressure to uphold ideals of professionalism often leads physicians to prioritize their roles at the expense of their well-being, which can further alienate them from personal support networks (Anderson et al., 2015). Studies illustrate that physicians face significant pressure to conform to strict professional standards that deny recognition of their humanity, causing a disconnect between their personal and professional identities(Iyadurai, Viggeswarpu, & Zachariah, 2019). This phenomenon often leads to harmful coping mechanisms, including emotional detachment from patients or colleagues, which ultimately undermines the quality of care provided (Chazan, 2015)(Ratri & Budiono, 2023). Disconnection from emotional expressions and vulnerability compromises physicians' abilities to empathize with patients, negatively impacting the therapeutic relationship and leading to poorer health outcomes (Zhao et al., 2020)(Pengyu & Jinwei, 2019).

Help-seeking and stigma: The stigma surrounding mental health problems continues to hamper doctors' willingness to seek help, as they fear that doing so may compromise their professional reputation or standing among colleagues. According to Beyond Blue's national survey on the mental health of doctors and medical students, doctors reported higher levels of stress and mental health problems compared to other professional groups, but many still avoid help because of perceived judgment (Chazan, 2015). This cycle of silence around vulnerability ultimately leads only to isolated distress among healthcare professionals, perpetuating a culture in which discussing emotional needs is considered taboo.

Implications for health systems: The negative impact of this stigmatization on medical professionals has profound implications for health systems in general. When physicians do not address their mental health needs, it can lead to increased burnout rates, decreased job satisfaction, and increased costs, all of which negatively affect the quality of patient care (Anderson et al., 2015)(Keerthi et al., 2021). As the healthcare field grapples with these challenges, it is increasingly clear that fostering a culture that encourages openness and emotional vulnerability, rather than stigmatizing it, is critical to the well-being of healthcare professionals and the patients they serve.

Although the medical culture's emphasis on resilience is meant to promote adaptation and strength, it unintentionally stigmatizes vulnerability, compromising the personal humanity of physicians. Addressing this problem requires systemic changes that cultivate a healthier environment more conducive to discussions about mental health and active help-seeking behaviors.

Foreshadowing a potential health crisis by isolating doctors - lower quality of care

The potential health crisis generated by the social isolation of doctors is underlined by a sharp decline in the quality of care. As doctors operate under conditions of increased psychological stress and exhaustion, the repercussions are manifested in medical errors, impulsive decisions and lack of empathy towards patients.

The impact of social isolation on errors and decision-making: Research indicates that high levels of burnout among physicians are directly related to an increased risk of medical errors (Elhadi et al., 2021)(Zainab, 2023). This correlation is based on the concept that psychological distress and fatigue compromise cognitive functioning and decision-making abilities. Psychological distress can severely impede job performance, leading to increased risks of errors in patient care. Similarly, physicians experiencing burnout have been observed to exhibit impulsive decision making, which can lead to negative patient outcomes, thus presenting a threat to the quality of care (Zainab, 2023). These findings suggest that the high-stress environment and isolation experienced by many physicians may unintentionally contribute to a worrisome deterioration in healthcare quality.

Burnout and empathy deficits: Declining empathy among healthcare providers is another critical area of concern. Burnout correlates significantly with decreased empathic engagement, which is essential for effective doctor-patient interactions (Zainab, 2023). When physicians become emotionally exhausted from their work, their ability to connect with patients often suffers. This decrease in empathy not only impacts patient satisfaction, but can also lead to a discordant doctor-patient relationship, further straining the healthcare system (Saddawi-Konefka et al., 2021). Barriers to mental health care were amplified during the COVID-19 pandemic, further perpetuating physician burnout and further reinforcing empathy deficits in patient care (Saddawi-Konefka et al., 2021).

Long-term consequences for health systems: The cumulative effects of social isolation, burnout and resulting empathy deficits signal an impending crisis in the quality of health care. The ongoing mental health challenges faced by physicians threaten not only their own well-being, but also jeopardize patient safety and the efficiency of care. Under pressure to maintain high performance amid systemic constraints, many physicians may struggle to maintain competencies that ensure high standards of care, leading to increased

operational costs for medical facilities and greater risk of liability from potential malpractice claims (Saddawi-Konefka et al., 2021)(Zainab, 2023).

The social isolation experienced by physicians, exacerbated in particular by the demanding nature of their profession, foreshadows significant repercussions on the quality of health care. Addressing these issues through supportive frameworks that prioritize the mental health of physicians will be crucial to avoid a health crisis that could jeopardize both healthcare providers and the populations they serve.

Foreshadowing a potential health crisis by isolating doctors, leaving the profession prematurely

The isolation of doctors, exacerbated by systemic challenges, foreshadows a potential health crisis that could lead to a significant exodus from the profession. The combined pressures of burnout, mental health stigma and inability to seek support may lead to premature departures from the medical field, often necessitating retraining for alternative careers.

Physician exodus driven by burnout and isolation: Increasing rates of burnout among healthcare professionals are alarming, with studies indicating that a substantial number of physicians are considering leaving the profession due to overwhelming stress and mental health issues (Quek et al., 2019)(Lane et al., 2018). Factors contributing to this exodus include high workloads, emotional exhaustion, and the frequent perception that asking for help is a sign of weakness (Rotenstein et al., 2016)(Kaiser et al., 2023). The COVID-19 pandemic has further intensified these challenges as many frontline workers have experienced significant psychological distress, causing some to reevaluate their career path. A culture that stigmatizes vulnerability may discourage physicians from expressing their distress, causing many to cope in silence until they eventually decide to leave the medical field altogether (Kaiser et al., 2023)(Mata et al., 2015).

The impact of stigma on help-seeking and retention of medical staff: Stigma surrounding mental health problems in the medical community discourages physicians from seeking help, significantly affecting their retention rates in the healthcare system. Research shows that a substantial number of physicians experience mental health stigma, which exacerbates their reluctance to access resources or disclose their problems (Kaiser et al., 2023)(Dyrbye et al., 2015). In many cases, physicians internalize these stigmatizing beliefs, leading to self-stigma that exacerbates their emotional distress and increases the likelihood that they will consider a career change. Reluctance to seek help can lead to a damaging cycle in which unaddressed mental health challenges drive skilled professionals away from patient care, exacerbating deficits in the health care system (Đặng & Salcedo, 2023)(Cohen et al., 2016).

Retraining and transition to other careers: For those physicians who choose to leave the medical field due to burnout or mental health issues, a meaningful transition often requires retraining. Many physicians who leave seek new careers that may better align with their mental health needs, such as administrative, academic, or other non-clinical roles (Clément et al., 2020). This transition can be difficult; clinicians may struggle to translate their clinical expertise into other areas, leading to feelings of inadequacy and further contributing to mental health challenges in the process (Hassan et al., 2016). As the health care landscape continues to evolve, it becomes increasingly important for health care systems to implement mental health supports and resources that not only meet current needs, but also work to retain experienced professionals (Hassan et al., 2016)(Mata et al., 2015).

The isolation of doctors due to systemic pressures threatens to precipitate a health crisis characterized by a significant medical exodus. The stigma surrounding mental health and the reluctance to seek help further exacerbates the problem, leading to premature departures from the profession and necessitating retraining for many. Addressing these challenges through systemic reforms and supportive interventions is essential to sustain not only the wellbeing of health professionals, but also the quality of care provided to patients.

Foreshadowing a potential health crisis by isolating doctors - high systemic costs

The isolation of doctors has profound implications not only for individual practitioners but for the health system as a whole. This isolation foreshadows a potential health crisis characterized by high systemic costs, including absenteeism, staff turnover and loss of expertise. Such factors threaten the efficiency and quality of healthcare.

Absenteeism caused by burnout: Absenteeism among healthcare providers is often linked to burnout - a condition exacerbated by the isolation of the medical workforce. Studies show that physicians who experience high levels of burnout are more likely to take time off due to mental health problems or excessive stress (van Hof et al., 2024). The emotional and psychological toll of managing a heavy workload, combined

with feelings of isolation and lack of support, leads to increased absenteeism, affecting continuity of patient care and increasing the burden on remaining medical staff (B. Li, 2024)(Barrett & Terry, 2018).

Physician turnover rates: High turnover rates among physicians represent another significant systemic cost related to physician isolation. Research indicates that many physicians consider leaving their positions due to overwhelming stress combined with lack of professional support (Markoulakis et al., 2020)(Muhammad Nur & Sharifa, 2020). The subsequent migration of health care workers from the public sector to private practice or other fields not only leads to an immediate loss of experienced providers, but also strains the remaining staff. These dynamics contribute to a cyclical trend in which continued turnover of staff depletes the clinical expertise of the institution and increases the workload for those who remain, creating a precarious and underserved environment.

Loss of expertise and knowledge transfer: The exodus of experienced physicians also leads to a significant loss of clinical expertise. As previously emphasized in various studies, the departure of experienced medical professionals diminishes the overall quality of health care delivery (Fadzil et al., 2022)(Brown et al., 2023). There is considerable concern that the loss of mentors in hospitals undermines knowledge transfer to younger and less experienced healthcare providers. This knowledge deficit may lead to increased errors in patient care, as new practitioners may be deprived of the guidance needed to effectively manage complex medical cases (Schulze et al., 2018). In addition, a reduced workforce may be forced to fill in for absent colleagues, further exacerbating fatigue and the potential for errors (Bateja et al., 2022).

Financial implications for health systems: The financial implications of physician isolation, absenteeism and turnover are profound. Health systems face increased operational costs due to the need for temporary staffing solutions, advertising for new hires, and the onboarding process for new hires. In addition, an unfilled physician position can lead to increased wait times for patients and decreased quality of care, ultimately challenging the health system's ability to provide adequate services and increasing the likelihood of negative patient outcomes.

The isolation of doctors signals a potential health crisis marked by significant systemic costs, including absenteeism, high staff turnover rates and a loss of valuable expertise. Addressing these problems requires urgent reforms to improve support systems for health care providers, to promote a culture that values emotional well-being, and ultimately to maintain the quality of patient care.

Foreshadowing a potential health crisis by isolating doctors - harming patients

The isolation of doctors within the health system increasingly foreshadows a potential health crisis, characterized by superficial doctor-patient relationships and a marked reduction in empathy. These factors not only contribute to the well-being of healthcare providers themselves, but also have a significant impact on the quality of patient care.

Superficial doctor-patient relationships: The increasing isolation experienced by physicians often leads to distractions that prevent the formation of meaningful relationships with patients. Many patient complaints stem from ineffective communication rather than a lack of clinical competence (Berger et al., 2020). Studies suggest that when physicians are overwhelmed or disengaged due to systemic pressures, they tend to provide more transactional interactions, which can frustrate patients who seek genuine engagement and understanding (Kerasidou & Horn, 2016b). Lack of continuity of care further exacerbates this problem, as patients find it difficult to build relationships with health care providers, leading to superficial relationships and decreased trust (Nordfonn et al., 2019).

Reduced empathy among healthcare providers: The emotional labor required in clinical care, particularly in high-stress environments, can lead to burnout, which is closely linked to a decrease in empathic engagement (Kerasidou & Horn, 2016b). Empathy is vital for effective healthcare because it fosters better communication and understanding between clinicians and patients, ultimately influencing patients' adherence to treatment plans and satisfaction with care (Savarese et al., 2024)(Qaisar et al., 2022). When physicians are isolated or overwhelmed, their ability to empathize may decrease, negatively affecting the therapeutic alliance. This erosion of empathy not only compromises quality of care, but can also lead to increased patient dissatisfaction and disengagement (Turner & Archer, 2020).

Implications for patient outcomes: The intersection of superficial relationships and reduced empathy can have serious implications for patient outcomes. Research highlights that patients who perceive their physicians as empathic are more likely to provide detailed health information, which is essential for accurate diagnosis (Ditton-Phare et al., 2017)(Chang et al., 2020). Conversely, when physicians lack the emotional engagement necessary for effective communication, it can lead to misdiagnosis, poor adherence to treatment,

and ultimately poorer health outcomes (Ganasegeran et al., 2015). These dynamics contribute to increased healthcare costs, as patients may require more intensive care or experience complications that could have been mitigated through effective communication and relationship building (Domaradzki & Walkowiak, 2023).

Long-term implications for health systems: The ramifications of a health workforce characterized by isolation and disengagement extend beyond individual interactions with patients to the integrity of the health system as a whole. Sustained low levels of empathy can lead to significant disparities in health outcomes, as vulnerable populations may be disproportionately affected by a lack of compassionate care (Dionigi et al., 2020). In addition, the systemic costs associated with these dynamics - such as increased hospital readmissions and prolonged treatment duration - exacerbate existing pressures on health systems already facing limited resources.

The isolation of doctors contributes significantly to a potential health crisis characterized by superficial doctor-patient relationships and diminished empathy. The consequences of these problems threaten not only the quality of patient care but also the effectiveness and sustainability of health systems. To avoid these challenges, urgent reforms that promote enabling environments for healthcare providers and encourage empathic communication in patient care are essential.

Public policy directions to mitigate the crisis of physician isolation

To address the crisis resulting from physician isolation, several public policy directions can be implemented to improve the mental health and well-being of health care providers, ultimately enhancing the quality of patient care. These policy recommendations include institutional programs for confidential psychological support, reducing administrative burdens, promoting an empathic organizational culture, creating supportive spaces for peer reflection, and integrating mental health indicators into quality measures within health systems.

Institutional programs for confidential psychological support: Establishing robust programs that provide confidential psychological support for health professionals is vital. Such programs should include access to mental health resources, counseling services, and mutual support networks (Ruiz-Fernández et al., 2021). These efforts can help normalize the conversation about mental health within the medical community, reducing stigma and reassuring clinicians that asking for help is a sign of strength rather than weakness. Evidence suggests that fostering resilience through structured support systems can improve individual well-being and the quality of care provided to patients (Ruiz-Fernández et al., 2021). Furthermore, addressing clinicians' mental health through specific interventions, such as mindfulness and coping strategies that incorporate spiritual components, may provide additional resources to combat loneliness. Studies indicate that religious coping mechanisms may alleviate loneliness and improve overall mental health outcomes (Imran et al., 2022). Policy makers should consider integrating mental health support services as a standard part of health system infrastructures, particularly for those in high-stress roles such as medicine (Gil et al., 2024).

Reducing administrative burden and smart digitization: Streamlining administrative processes is key to reducing burdens that contribute to physician burnout. By integrating smart digital solutions, healthcare systems can increase efficiency and allow physicians to focus more on patient care instead of administrative tasks. Streamlining electronic health record systems and reducing bureaucratic complexities can substantially reduce doctors' stress levels, thereby improving their morale and ability to meaningfully engage with patients. On the other hand, the potential impact of telemedicine should not be overlooked. With the shift to virtual care during the pandemic, there has been a growing recognition of the potential of telemedicine to alleviate feelings of isolation not only for patients but also for healthcare providers. Specialty nurses and other health care providers have effectively leveraged telemedicine to maintain communication and interaction with their patients, creating support networks that extend into their professional circles (Ziegler et al., 2023). Policy implementation should encourage and fund telehealth initiatives, ensuring that healthcare professionals have access to the technology and training needed to use it effectively.

Fostering an empathetic and collaborative organizational culture: Transforming the workplace culture in healthcare organizations to prioritize empathy and collaboration can create an environment conducive to the well-being of healthcare providers. Training programs designed to cultivate communication skills and improve emotional intelligence among healthcare staff can foster more compassionate relationships among colleagues and between physicians and patients (Bañez et al., 2023). Increasing awareness of the emotional challenges faced by healthcare professionals may encourage a collective response to alleviate feelings of isolation.

Create spaces for peer reflection and support: Establishing regular opportunities for informal reflection and peer support can help healthcare providers share their experiences and coping strategies. The use of structured debriefing sessions or roundtable meetings can create a safe space for clinicians to discuss clinical experiences and emotional responses, fostering a sense of camaraderie and support among colleagues. Medical schools and institutions can adopt this practice to encourage team cohesion and increase overall job satisfaction.

A crucial approach is to cultivate spaces where health professionals can share their experiences and challenges. Research indicates that engaging in narrative processes and personal reflection can help professionals make sense of their clinical experiences, which can in turn reduce feelings of isolation (Gandino et al., 2017). By promoting the use of reflective storytelling in their practice, healthcare institutions can create a culture that values emotional expression and connection among colleagues. This reflective approach aligns with the concept of Communities of Practice, in which professionals negotiate their identities and experiences through interaction, thereby promoting a supportive learning environment (Driessen & Hearn, 2023). Creating structured mutual support initiatives within hospitals can significantly help to alleviate loneliness. Such initiatives may involve formalizing mentoring programs and organizing support groups where physicians can openly discuss their difficulties without stigmatization. This is essential given the nuanced roles that doctors take on and the emotional burden associated with their responsibilities. By establishing regular meetings and collaborative projects, professional relationships can be strengthened and physicians can feel less isolated in their experiences (Owens et al,, 2019).

Integrating physician mental health into system quality indicators: Integrating physician mental health and well-being into formal quality indicators for health systems is essential to make systemic change sustainable. By tracking metrics related to physicians' mental health, organizations can better understand the impact of isolation and stress on healthcare delivery and make data-driven decisions that support provider well-being. For example, conditions such as burnout rates and employee satisfaction can be used to inform healthcare policies and improve the work environment, ultimately benefiting patient outcomes (Koschorke et al., 2021).

A multidimensional approach to public policy that addresses both the systemic issues that contribute to physician isolation and the mental health of physicians is essential to mitigating the current crisis. By implementing these strategies, health systems can more effectively support their workforce while ensuring that physicians remain engaged and able to provide high-quality care to patients.

VOSviewer network visual analysis - Scope Review on physician loneliness

The bibliometric network obtained through VOSviewer provides a visual representation of the literature selected for this scope review, which aimed to investigate the process of loneliness of healthcare professionals - a latent reality, accentuated but not caused by the COVID-19 pandemic. The selection of articles was based on key terms centered on loneliness, in correlation with the medical professional context, highlighting a health crisis in the making, with deep roots in the structure of the system, both before and after the pandemic.

The network visualization highlights four main thematic clusters:

The green cluster (the largest and densest) dominates with terms such as “loneliness”, “covid”, “depression”, “burnout syndrome”, “emotional exhaustion” and “scales”. This cluster captures the psychological and emotional impact of social isolation on health professionals, especially in a pandemic context, but also extends the analysis to the chronic psychological factors that precede this period. The presence of the word “year” signals the longitudinal nature of some of the studies, which supports the hypothesis of a continuous evolution of the phenomenon.

The red cluster includes terms such as “challenge”, “process”, “system”, “framework”, “barrier” and “provider”. It reflects the systemic and methodological difficulties in studying and addressing this problem. Physician burnout is contextualized here as a symptom of a dysfunctional health care system plagued by organizational barriers, lack of institutional support and chronic overload.

The blue cluster is centered on terms associated with literature review: “systematic review”, “meta analysis”, “database”, “psyinfo”. It argues that scope review is based on a solid methodological foundation, based on the systematic extraction and synthesis of scientifically validated sources.

The yellow cluster is the smallest but highly relevant to the medical context. It contains terms such as “student”, “empathy”, “curriculum”, “jefferson scale”, signaling an important educational component. The

emergence of these terms shows that professional alienation may have its roots in medical training, through lack of training in empathy and human relations, thus contributing to the gradual alienation of future doctors.

The network is densely connected, indicating a close interdependence between the investigated themes: social isolation, professional depression, burnout, empathy and systemic challenges. A complex landscape emerges, in which physician loneliness does not suddenly appear pandemic, but is the result of an evolutionary process, underpinned by structural and emotional factors that have accumulated over time.

The picture of the bibliometric network is given below (Figure 1).

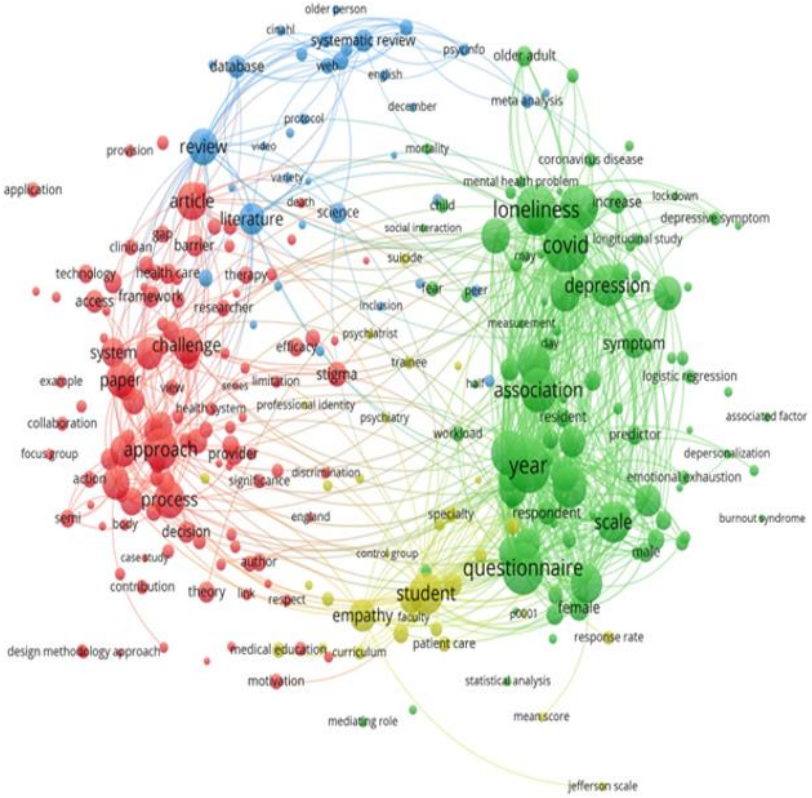

Figure 1:The co-occurrence image of terms obtained using VOSviewer

Interpretative assessments based on the bibliometric image

The constructed network underlines the complexity of the analyzed phenomenon, confirming the multidimensional character of loneliness among health professionals. It can be observed that this process is not an isolated one, but directly intersects aspects related to mental health, health system organization, educational practice and professional coping strategies. The COVID-19 pandemic has acted as a revealer of a pre-existing condition, accelerating and amplifying trends already outlined earlier. In this sense, the network analysis validates the objective of the review: to explore whether the phenomenon of medical loneliness may constitute a latent, under-diagnosed health crisis. The data suggest that it is - and that this crisis is not only one of pandemic, but also of professional medical culture that often discourages vulnerability, emotional support and team cohesion.

For a complete understanding, it is necessary to deepen these directions through qualitative and longitudinal investigations, but also by reviewing the educational and organizational paradigms in the health system.

Detailed analysis of the loneliness node

The “loneliness” node occupies a central place in the semantic network, being part of the green cluster, which seems to bring together terms associated with mental health, pandemic effects and psychological assessment. The visible size of the node indicates a high frequency of occurrence in the analyzed literature, but also a high level of connectivity with other terms - which emphasizes its role as a key concept in the bibliographic corpus.

- Semantic links

"Loneliness" is closely correlated with:

- "covid", "depression", "symptom", "association" - suggesting that loneliness is often discussed in relation to depressive symptoms that occurred during the pandemic;
- "year", "questionnaire", "scale" - indicating a predominantly quantitative approach, using standardized assessment instruments;
- "child", "older adult", "resident", "peer" - which signals the diversity of the populations analyzed, but at the same time highlights the explicit absence of health professionals as a focused subgroup;
- "suicide", "fear", "social interaction" - which adds a psycho-social dimension and suggests potentially serious consequences of chronic isolation.

- Epistemic values

"Loneliness" thus appears as a cross-cutting concept - it works simultaneously:
- as a symptom of a mental pathology;
- as a risk factor for other conditions;
- as an indicator of social and organizational dysfunction, including in the healthcare system;
- as an autonomous theoretical benchmark, increasingly scientifically validated.

- Significant absentees

It is noteworthy that although "loneliness" is strongly connected with terms from the area of mental health and epidemiology, it does not seem to be directly related to terms such as "clinician", "provider" or "healthcare professional". This disjunction can be interpreted as a gap in the literature, which has mostly investigated patients or the general population, but has neglected to explore loneliness among healthcare professionals - precisely the working hypothesis of the present study.

- Role in structuring the network

"Loneliness" functions as a node-bridge between strictly medical terms (e.g. "symptom", "scales") and social context terms (e.g. "lockdown", "peer"), which reinforces the idea that it cannot be treated as a psychological consequence alone, but as a socially, institutionally and culturally contextualized phenomenon.

Theoretical and practical implications of the centrality of the concept of loneliness

The high visibility and extensive connectivity of the "loneliness" node in the bibliometric semantic network highlights the growing importance of this concept in research over the last decade, especially in the pandemic context. However, despite the recognition of its impact on the mental and social health of different population groups, there is a significant gap in the concept's applicability to health professionals, particularly physicians.

- Theoretical implications:

The conceptual extension of loneliness – "loneliness", although well established in the study of patients and the elderly, can and should be theorized as an emerging form of relational dysfunction in professional contexts, particularly in vocational professions such as medicine. This implies a rethinking of the concept to include:

- institutional isolation;
- fragmentation of medical teams;
- absence of emotional and symbolic recognition of efforts within the organization.

"Loneliness" as a systemic symptom - The results suggest that loneliness is not only a psychological consequence, but also an early indicator of structural vulnerabilities in the health care system. Therefore, it may become an organizational risk variable, predictive for burnout, turnover of specialized staff or decreased quality of care.

- Practical implications:

The need for a specific assessment of loneliness among medical staff - The screening tools used so far are applied almost exclusively to patients or the general population. There is a need to adapt or develop professionally contextualized instruments that capture institutional forms of loneliness and disconnection among physicians.

Targeted Organizational Interventions - Based on the recognition of this reality, it is imperative that public health managers integrate relational and social support dimensions into burnout prevention strategies. Measures such as: facilitating regular peer-support interactions, creating spaces for emotional reflection and

encouraging inter-professional collaboration can help to rebuild symbolic and affective bonds within healthcare teams.

"Loneliness" as an early warning factor in health policies - Integrating the concept into institutional metrics of occupational well-being could function as an early warning indicator for potential systemic crises, offering the possibility of intervention before relational or functional collapse.

Conclusions

The bibliometric network analysis highlights an increased visibility and centrality of the concept of loneliness, especially in the context of the COVID-19 pandemic. However, most studies focus on patients, elderly or young people, leaving the dimension of loneliness among health professionals relatively unexplored. This paper proposes a reinterpretation of loneliness not only as an individual state, but as a systemic symptom of institutional and relational dysfunctions in the healthcare setting.

Against the backdrop of the rapid changes generated by the COVID-19 pandemic, but also pre-existing trends, physician burnout is becoming chronic and predictive for the emergence of profound emotional and organizational imbalances. Thus, burnout can be understood not only as an effect of the crisis, but as an evolutionary process with the potential to generate a latent health crisis.

In order to prevent these effects, a multidimensional approach is needed that includes: recognizing loneliness as an occupational health problem, integrating relational assessment into health human resource policies, and developing proactive organizational interventions that support cohesion, communication and belonging to the professional community.

In conclusion, the relational crisis of doctors, often invisible but profound, can become a determining vector of vulnerabilities in the health system, requiring in-depth research and adapted responses from decision-makers, managers and professional communities. A paradigm shift is about to become a necessity: we don't just treat patients, we also need to "treat" their caregivers.

References

Alwashmi, A. H., & Alkhamees, A. A. (2021). Burnout and the psychological impact among physiatrists in saudi arabia during covid-19. International Journal of Environmental Research and Public Health, 18(18). https://doi.org/10.3390/ijerph18189621

Anand, A. C. (2019). Indian healthcare at crossroads (Part 1): Deteriorating doctor–patient relationship. National Medical Journal of India, 32(1). https://doi.org/10.4103/0970-258x.272117

Anderson, K., Haesler, E., Stubbs, A., & Molinari, K. (2015). Comparing general practice and hospital rotations. Clinical Teacher, 12(1). https://doi.org/10.1111/tct.12224

Bañez, C., Engel, K., Soung Yee, A., Nercessian, S., Slomka, A., Marr, J., … Hall, T. (2023). Implementing front-line ownership to improve safety in Labor & Delivery and Postpartum Units. Proceedings of the International Symposium on Human Factors and Ergonomics in Health Care, 12(1). https://doi.org/10.1177/2327857923121017

Barrett, R., & Terry, L. (2018). Patients' and healthcare professionals' experiences and perceptions of physiotherapy services in the emergency department: A qualitative systematic review. International Journal of Emergency Medicine. https://doi.org/10.1186/s12245-018-0201-z

Bateja, R., Dubey, S. K., & Bhatt, A. (2022). Integration of EHR and PHR leveraging cloud services for approving treatments. International Journal of Health Sciences. https://doi.org/10.53730/ijhs.v6ns8.13322

Bentley, S. V., Young, T., Álvarez, B., Jetten, J., Haslam, C., Cruwys, T., … Wibisono, S. (2022). Double jeopardy: How lower levels of support during COVID-19 exacerbated the relationship between loneliness and distress. Frontiers in Public Health, 10. https://doi.org/10.3389/fpubh.2022.976443

Berger, R., Berger, R., Bulmash, B., Drori, N., Ben-Assuli, O., & Herstein, R. (2020). The patient-physician relationship: an account of the physician's perspective. Israel Journal of Health Policy Research. https://doi.org/10.1186/s13584-020-00375-4

Berry, L. L. (2020). Designing connection into healthcare services. Journal of Service Management, 31(5). https://doi.org/10.1108/JOSM-01-2020-0026

Bhugra, D., Molodynski, A., & Ventriglio, A. (2021). Well-being and burnout in medical students. Industrial Psychiatry Journal, 30(2). https://doi.org/10.4103/ipj.ipj_224_21

Bolmsjö, I., Tengland, P. A., & Rämgård, M. (2019). Existential loneliness: An attempt at an analysis of the concept and the phenomenon. Nursing Ethics. https://doi.org/10.1177/0969733017748480

Brooks, S. K., Gerada, C., & Chalder, T. (2016). The Specific Needs of Doctors With Mental Health Problems: Qualitative Analysis of Doctor-Patients' Experiences With the Practitioner Health Programme. Journal of Mental Health, 26(2), 161–166. https://doi.org/10.1080/09638237.2016.1244712

Brown, M. R. D., Knight, M., Peters, C. J., Maleki, S., Motavalli, A., & Nedjat-Shokouhi, B. (2023). Digital outpatient health solutions as a vehicle to improve healthcare sustainability—a United Kingdom focused policy and practice perspective. Frontiers in Digital Health. https://doi.org/10.3389/fdgth.2023.1242896

Buecker, S., & Horstmann, K. T. (2021). Loneliness and Social Isolation during the COVID-19 Pandemic: A Systematic Review Enriched with Empirical Evidence from a Large-Scale Diary Study. European Psychologist. https://doi.org/10.1027/1016-9040/a000453

Bunevičienė, I., & Bunevičius, A. (2020). Prevalence of Internet Addiction in Healthcare Professionals: Systematic Review and Meta-Analysis. International Journal of Social Psychiatry, 67(5), 483–491. https://doi.org/10.1177/0020764020959093

Ceri, V., & Cicek, I. (2021). Psychological Well-Being, Depression and Stress During COVID-19 Pandemic in Turkey: A Comparative Study of Healthcare Professionals and Non-Healthcare Professionals. Psychology, Health and Medicine, 26(1). https://doi.org/10.1080/13548506.2020.1859566

Chang, P. C., Wu, T., & Du, J. (2020). Psychological contract violation and patient's antisocial behaviour: A moderated mediation model of patient trust and doctor-patient communication. International Journal of Conflict Management, 31(4). https://doi.org/10.1108/IJCMA-07-2019-0119

Chazan, L. (2015). "Teaching" the therapeutic alliance Part 2. Treating patients, supporting trainees: Towards a broader view of psychotherapy training. Australasian Psychiatry, 23(5). https://doi.org/10.1177/1039856215593398

Choi, E. Y., Farina, M., Wu, Q., & Ailshire, J. (2021). COVID-19 Social Distancing Measures and Loneliness Among Older Adults. The Journals of Gerontology Series B, 77(7), e167–e178. https://doi.org/10.1093/geronb/gbab009

Clément, A., Delage, R., Chollier, M., Josse, L., Gaudry, S., Zahar, J. R., … Degos, B. (2020). Prospective study on a fast-track training in psychiatry for medical students: the psychiatric hat game. BMC Medical Education, 20(1). https://doi.org/10.1186/s12909-020-02304-0

Cohen, D., Winstanley, S. J., & Greene, G. (2016). Understanding doctors' attitudes towards self-disclosure of mental ill health. Occupational Medicine, 66(5). https://doi.org/10.1093/occmed/kqw024

Cudjoe, T. K. M., & Kotwal, A. A. (2020). "Social Distancing" Amid a Crisis in Social Isolation and Loneliness. Journal of the American Geriatrics Society. https://doi.org/10.1111/jgs.16527

Đặng, D., & Salcedo, J. (2023). Patient Acceptance of Primary Care Behavioral Health in a Resident Obstetrics and Gynecology Clinic. Southern Medical Journal, 116(9), 733–738. https://doi.org/10.14423/smj.0000000000001596

Dionigi, A., Casu, G., & Gremigni, P. (2020). Associations of self-efficacy, optimism, and empathy with psychological health in healthcare volunteers. International Journal of Environmental Research and Public Health, 17(16). https://doi.org/10.3390/ijerph17166001

Ditton-Phare, P., Loughland, C., Duvivier, R., & Kelly, B. (2017). Communication skills in the training of psychiatrists: A systematic review of current approaches. Australian and New Zealand Journal of Psychiatry. https://doi.org/10.1177/0004867417707820

Dodoo, S. O., Mullen, R., Pasternak, A., Hester, C. M., Callen, E., Bujold, E. J., … Kimminau, K. S. (2021). Loneliness, burnout, and other types of emotional distress among family medicine physicians:

Results from a national survey. Journal of the American Board of Family Medicine, 34(3). https://doi.org/10.3122/JABFM.2021.03.200566

Domaradzki, J., & Walkowiak, D. (2023). Caring for Children with Dravet Syndrome: Exploring the Daily Challenges of Family Caregivers. Children, 10(8). https://doi.org/10.3390/children10081410

Driessen, J., & Hearn, R. (2023). Development of Hidden Curriculum Skills in a COVID-19 Vaccination Centre. The Clinical Teacher, 21(2). https://doi.org/10.1111/tct.13642

Dyrbye, L. N., Eacker, A., Durning, S. J., Brazeau, C., Moutier, C., Massie, F. S., … Shanafelt, T. D. (2015). The Impact of Stigma and Personal Experiences on the Help-Seeking Behaviors of Medical Students with Burnout. Academic Medicine, 90(7). https://doi.org/10.1097/ACM.0000000000000655

Elhadi, M., Msherghi, A., Elgzairi, M., Alhashimi, A., Bouhuwaish, A., Biala, M., … BenGhatnsh, A. (2021). The Mental Well-Being of Frontline Physicians Working in Civil Wars Under Coronavirus Disease 2019 Pandemic Conditions. Frontiers in Psychiatry, 11. https://doi.org/10.3389/fpsyt.2020.598720

Elshikh, A., & Hamouda, S. (2021). Burnout Syndrome and Its Predictors Among Female Medical Students at Al-Azhar University. International Journal of Medical Arts, 3(2). https://doi.org/10.21608/ijma.2021.53784.1222

Erschens, R., Seifried-Dübon, T., Stuber, F., Rieger, M. A., Zipfel, S., Nikendei, C., … Junne, F. (2022). The association of perceived leadership style and subjective well-being of employees in a tertiary hospital in Germany. PLoS ONE, 17(12 December). https://doi.org/10.1371/journal.pone.0278597

Fadzil, M. M., Wan Puteh, S. E., Aizuddin, A. N., & Ahmed, Z. (2022). Specialists' Dual Practice within Public Hospital Setting: Evidence from Malaysia. Healthcare (Switzerland). https://doi.org/10.3390/healthcare10102097

Finley, A. J., & Schaefer, S. M. (2022). Affective Neuroscience of Loneliness: Potential Mechanisms underlying the Association between Perceived Social Isolation, Health, and Well-Being. Journal of Psychiatry and Brain Science, 7(6). https://doi.org/10.20900/jpbs.20220011

Galbraith, N., Boyda, D., McFeeters, D., & Hassan, T. (2021). The mental health of doctors during the COVID-19 pandemic. BJPsych Bulletin, 45(2). https://doi.org/10.1192/bjb.2020.44

Ganasegeran, K., Perianayagam, W., Abdul Manaf, R., Ali Jadoo, S. A., & Al-Dubai, S. A. R. (2015). Patient satisfaction in Malaysia's busiest outpatient medical care. Scientific World Journal, 2015. https://doi.org/10.1155/2015/714754

Gandino, G., Fini, G. Di, Bernaudo, A., Paltrinieri, M., Castiglioni, M., & Veglia, F. (2017). The Impact of Perinatal Loss in Maternity Units: A Psycholinguistic Analysis of Health Professionals' Reactions. Journal of Health Psychology, 25(5), 640–651. https://doi.org/10.1177/1359105317727841

Garcia, C. D. L., De Abreu, L. C., Ramos, J. L. S., De Castro, C. F. D., Smiderle, F. R. N., Dos Santos, J. A., & Bezerra, I. M. P. (2019). Influence of burnout on patient safety: systematic review and meta-analysis. Medicina (Lithuania). https://doi.org/10.3390/medicina55090553

Gil, G. B., Martínez-Zaragoza, F., Castro, J. F., Sánchez-Pérez, A., & García-Sierra, R. (2024). Mindfulness-Based Interventions for Improving Mental Health of Frontline Healthcare Professionals During the COVID-19 Pandemic: A Systematic Review. Systematic Reviews, 13(1). https://doi.org/10.1186/s13643-024-02574-5

Gu, M., Zheng, L., Gu, J., Wang, S., Shi, Y., Jiang, F., … Tang, Y. lang. (2023). Would you choose to be a psychiatrist again? A large-sample nationwide survey of psychiatrists and psychiatry residents in China. International Journal of Mental Health Systems, 17(1). https://doi.org/10.1186/s13033-023-00614-6

Gui, T. (2024). Behind Closed Doors: Informal Influence on United Nations Staffing and Pathologies of International Bureaucracies. Global Policy, 15(4), 615–630. https://doi.org/10.1111/1758-5899.13370

Hanganu, B., & Ioan, B. G. (2022). The Personal and Professional Impact of Patients' Complaints on Doctors—A Qualitative Approach. International Journal of Environmental Research and Public Health, 19(1). https://doi.org/10.3390/ijerph19010562

Hassan, T. M., Asmer, M. S., Mazhar, N., Munshi, T., Tran, T., & Groll, D. L. (2016). Canadian Physicians' Attitudes towards Accessing Mental Health Resources. Psychiatry Journal, 2016. https://doi.org/10.1155/2016/9850473

Hayes, B., Prihodova, L., Walsh, G., Doyle, F., & Doherty, S. (2017). What's up doc? A national cross-sectional study of psychological wellbeing of hospital doctors in Ireland. BMJ Open, 7(10). https://doi.org/10.1136/bmjopen-2017-018023

Imran, M. H., Zhihong, Z., & Iqbal, M. (2022). The Role of Religious Coping to Overcome Mental Distress and Anxiety During the COVID-19 Pandemic: An Integrative Review. Analyses of Social Issues and Public Policy, 22(3), 817–835. https://doi.org/10.1111/asap.12327

Iyadurai, R., Viggeswarpu, S., & Zachariah, A. (2019). Career destination and reason for career destination preferences among medical graduates from Christian Medical College Vellore – Does rural service obligation increase retention of medical graduates in rural service? Journal of Family Medicine and Primary Care, 8(7). https://doi.org/10.4103/jfmpc.jfmpc_388_19

Jalili, M., Niroomand, M., Hadavand, F., Zeinali, K., & Fotouhi, A. (2021). Burnout among healthcare professionals during COVID-19 pandemic: a cross-sectional study. International Archives of Occupational and Environmental Health, 94(6). https://doi.org/10.1007/s00420-021-01695-x

Kaiser, H., Grice, T., Walker, B., & Kaiser, J. (2023). Barriers to Help-Seeking in Medical Students With Anxiety at the University of South Carolina School of Medicine Greenville. https://doi.org/10.21203/rs.3.rs-2440207/v1

Keerthi, D. S., Kumar, P. M., & Shwetha, P. (2021). Psychological Effects of COVID -19 Among Doctors, 2(6), 6–10. https://doi.org/10.47310/iarjmsr.2021.v02i06.02

Kerasidou, A., & Horn, R. (2016a). Making Space for Empathy: Supporting Doctors in the Emotional Labour of Clinical Care. BMC Medical Ethics, 17(1). https://doi.org/10.1186/s12910-016-0091-7

Kerasidou, A., & Horn, R. (2016b). Making space for empathy: Supporting doctors in the emotional labour of clinical care Ethics in Clinical Practice. BMC Medical Ethics. https://doi.org/10.1186/s12910-016-0091-7

Koschorke, M., Oexle, N., Ouali, U., Cherian, A. V., Deepika, V., Mendon, G. B., … Kohrt, B. A. (2021). Perspectives of healthcare providers, service users, and family members about mental illness stigma in primary care settings: A multisite qualitative study of seven countries in Africa, Asia, and Europe. PLoS ONE. https://doi.org/10.1371/journal.pone.0258729

Kreh, A., Brancaleoni, R., Magalini, S. C., Chieffo, D. P. R., Flad, B., Ellebrecht, N., & Juen, B. (2021). Ethical and psychosocial considerations for hospital personnel in the Covid-19 crisis: Moral injury and resilience. PLoS ONE, 16(4 April). https://doi.org/10.1371/journal.pone.0249609

Lane, M. A., Newman, B. M., Taylor, M. Z., O'Neill, M., Ghetti, C., Woltman, R. M., & Waterman, A. D. (2018). Supporting Clinicians After Adverse Events: Development of a Clinician Peer Support Program. Journal of Patient Safety, 14(3). https://doi.org/10.1097/PTS.0000000000000508

Lasalvia, A., Amaddeo, F., Porru, S., Carta, A., Tardivo, S., Bovo, C., … Bonetto, C. (2021). Levels of burn-out among healthcare workers during the COVID-19 pandemic and their associated factors: A cross-sectional study in a tertiary hospital of a highly burdened area of north-east Italy. BMJ Open, 11(1). https://doi.org/10.1136/bmjopen-2020-045127

Lawlor, B., O'Sullivan, R., Leavey, G., & Lubben, J. (2024). Do Doctors Appreciate That Social Isolation and Loneliness Are Health Issues? Frontiers in Public Health, 12. https://doi.org/10.3389/fpubh.2024.1477228

Lee, S. J., Jung, S. I., Kim, M. G., Park, E., Kim, A. R., Kim, C. H., … Jung, T. Du. (2021). The influencing factors of gender differences on mental burdens in young physiotherapists and occupational

therapist. International Journal of Environmental Research and Public Health, 18(6). https://doi.org/10.3390/ijerph18062858

Lemaire, J. B., Ewashina, D., Polachek, A. J., Dixit, J., & Yiu, V. (2018). Understanding how patients perceive physician wellness and its links to patient care: A qualitative study. PLoS ONE, 13(5). https://doi.org/10.1371/journal.pone.0196888

Li, B. (2024). Community Nursing Practice in Hypertension Management in China: Qualitative Analysis Using a Bourdieusian Framework. Public Health Nursing, 42(1), 315–324. https://doi.org/10.1111/phn.13470

Li, J., Zhou, X., & Wang, Q. (2023). Interventions to reduce loneliness among Chinese older adults: A network meta-analysis of randomized controlled trials and quasi-experimental studies. Applied Psychology: Health and Well-Being. https://doi.org/10.1111/aphw.12375

Li, S., Kong, K., Zhang, K., & Niu, H. (2023). The relation between college students' neuroticism and loneliness: The chain mediating roles of self-efficacy, social avoidance and distress. Frontiers in Psychology, 14. https://doi.org/10.3389/fpsyg.2023.1124588

Liu, J., Zhu, Z., Hua, Z., Lin, W., Weng, Y., Lin, J., … Guo, J. (2023). Radiotherapy refusal in breast cancer with breast-conserving surgery. Radiation Oncology, 18(1). https://doi.org/10.1186/s13014-023-02297-2

Lü, Y., Hu, X.-M., Huang, X., Zhuang, X., Guo, P., Feng, L.-F., … Hao, Y. (2017). The Relationship Between Job Satisfaction, Work Stress, Work–family Conflict, and Turnover Intention Among Physicians in Guangdong, China: A Cross-Sectional Study. BMJ Open, 7(5), e014894. https://doi.org/10.1136/bmjopen-2016-014894

Maliha, Z. T., Nahar, S. N., Mitra, D. K., Kakoly, N. S., Koly, K. N., Talukder, M. H. K., … Hasan, M. T. (2025). Unveiling the Burden: Depression and Its Determinants Among Bangladeshi Medical Students - Insights From the MINI Diagnostic Tool. https://doi.org/10.1101/2025.01.30.25321378

Markoulakis, R., Chan, S., & Levitt, A. (2020). The needs and service preferences of caregivers of youth with mental health and/or addictions concerns. BMC Psychiatry, 20(1). https://doi.org/10.1186/s12888-020-02801-y

Mata, D. A., Ramos, M. A., Bansal, N., Khan, R., Guille, C., Di Angelantonio, E., & Sen, S. (2015). Prevalence of depression and depressive symptoms among resident physicians a systematic review and meta-analysis. JAMA - Journal of the American Medical Association, 314(22). https://doi.org/10.1001/jama.2015.15845

McCain, R. S., McKinley, N., Dempster, M., Campbell, W. J., & Kirk, S. J. (2018). A study of the relationship between resilience, burnout and coping strategies in doctors. Postgraduate Medical Journal, 94(1107). https://doi.org/10.1136/postgradmedj-2016-134683

McCain, S., McKinley, N., Dempster, M., Campbell, W. J., & Kirk, S. (2017). A Study of the Relationship Between Resilience, Burnout and Coping Strategies in Doctors. Postgraduate Medical Journal, 94(1107), 43–47. https://doi.org/10.1136/postgradmedj-2016-134683

Mountford, N., & Cai, Y. (2022). Towards a Flatter Ontology of Institutional Logics: How Logics Relate in Situations of Institutional Complexity. International Journal of Management Reviews, 25(2), 363–383. https://doi.org/10.1111/ijmr.12313

Muhammad Nur, A., & Sharifa, E. (2020). Physicians Intention to Leave From Malaysia Government Hospitals With Existing Retention Strategy., 4(3). https://doi.org/10.35841/public-health-policy.4.3.30-37

Nordfonn, O. K., Morken, I. M., Bru, L. E., & Husebø, A. M. L. (2019). Patients' experience with heart failure treatment and self-care—A qualitative study exploring the burden of treatment. Journal of Clinical Nursing, 28(9–10). https://doi.org/10.1111/jocn.14799

Nowińska, M., Dziekońska, J., Grabowy, P., Drożak, M., & Milanowska, J. (2021). The impact of COVID-19 on burnout among healthcare workers - literature review. Journal of Education, Health and Sport, 11(9). https://doi.org/10.12775/jehs.2021.11.09.022

Owens, J., Singh, G., & Cribb, A. (2019). Austerity and Professionalism: Being a Good Healthcare Professional in Bad Conditions. Health Care Analysis, 27(3), 157–170. https://doi.org/10.1007/s10728-019-00372-y

Pengyu, L., & Jinwei, H. (2019). Association Between Empathy Competence and Emotional Intelligence Among Medical Undergraduates: A Cross-sectional Study. American Journal of Applied Psychology, 8(3). https://doi.org/10.11648/j.ajap.20190803.11

Petitte, T., Mallow, J., Barnes, E., Petrone, A., Barr, T., & Theeke, L. (2015). A Systematic Review of Loneliness and Common Chronic Physical Conditions in Adults. The Open Psychology Journal, 8(1). https://doi.org/10.2174/1874350101508010113

Plochg, T., Klazinga, N. S., & Starfield, B. (2009). Transforming medical professionalism to fit changing health needs. BMC Medicine, 7. https://doi.org/10.1186/1741-7015-7-64

Power, J. E. M. H., Dolezal, L., Kee, F., & Lawlor, B. A. (2018). Conceptualizing loneliness in health research: Philosophical and psychological ways forward. Journal of Theoretical and Philosophical Psychology, 38(4), 219–234. https://doi.org/10.1037/teo0000099

Qaisar, A., Khan, J. U. A., Kakar, I. A., Khan, U. A., Awalzai, F. N., Shah, A., & Ullah, A. (2022). Empathy of Healthcare Professionals During Covid-19 Crisis. Pakistan Journal of Medical and Health Sciences, 16(12). https://doi.org/10.53350/pjmhs20221612330

Qin, A., Hu, F., Qin, W., Dong, Y., Li, M., & Xu, L. (2023). Educational degree differences in the association between work stress and depression among Chinese healthcare workers: Job satisfaction and sleep quality as the mediators. Frontiers in Public Health, 11. https://doi.org/10.3389/fpubh.2023.1138380

Quek, T. T. C., Tam, W. W. S., Tran, B. X., Zhang, M., Zhang, Z., Ho, C. S. H., & Ho, R. C. M. (2019). The global prevalence of anxiety among medical students: A meta-analysis. International Journal of Environmental Research and Public Health. https://doi.org/10.3390/ijerph16152735

Rashid, I., & Talib, P. (2015). Occupational Stress and Coping Styles among Doctors: Role of Demographic and Environment Variables. Vision, 19(3). https://doi.org/10.1177/0972262915599473

Ratri, D. R., & Budiono, N. A. (2023). Effect of Job Demand and Personal Resource on Employee Work Engagement with Burnout as a Mediating Variable. Dinasti International Journal of Digital Business Management, 4(5). https://doi.org/10.31933/dijdbm.v4i5.1993

Reith, T. P. (2018). Burnout in United States Healthcare Professionals: A Narrative Review. Cureus. https://doi.org/10.7759/cureus.3681

Riley, R., Buszewicz, M., Kokab, F., Teoh, K., Gopfert, A., Taylor, A. K., … Chew-Graham, C. (2021). Sources of work-related psychological distress experienced by UK-wide foundation and junior doctors: A qualitative study. BMJ Open, 11(6). https://doi.org/10.1136/bmjopen-2020-043521

Robert, R., Kentish-Barnes, N., Boyer, A., Laurent, A., Azoulay, E., & Reignier, J. (2020). Ethical dilemmas due to the Covid-19 pandemic. Annals of Intensive Care. https://doi.org/10.1186/s13613-020-00702-7

Roman, T. E., Cleary, S., & McIntyre, D. (2017). Exploring the functioning of decision space: A review of the available health systems literature. International Journal of Health Policy and Management. https://doi.org/10.15171/ijhpm.2017.26

Rotenstein, L. S., Brown, R., Sinsky, C., & Linzer, M. (2023). The Association of Work Overload with Burnout and Intent to Leave the Job Across the Healthcare Workforce During COVID-19. Journal of General Internal Medicine, 38(8). https://doi.org/10.1007/s11606-023-08153-z

Rotenstein, L. S., Ramos, M. A., Torre, M., Bradley Segal, J., Peluso, M. J., Guille, C., … Mata, D. A. (2016). Prevalence of depression, depressive symptoms, and suicidal ideation among medical students

a systematic review and meta-analysis. JAMA - Journal of the American Medical Association. https://doi.org/10.1001/jama.2016.17324

Rotger, N. (2024). Narrating Loneliness: Isolation, Disaffection, and the Contemporary Novel. Journal of Medical Humanities. https://doi.org/10.1007/s10912-024-09855-z

Ruijter, U. W. de, Lingsma, H. F., Bax, W. A., & Legemaate, J. (2021). Hidden Bedside Rationing in the Netherlands: A Cross-Sectional Survey Among Physicians in Internal Medicine. BMC Health Services Research, 21(1). https://doi.org/10.1186/s12913-021-06229-2

Ruiz-Fernández, M. D., Ramos-Pichardo, J. D., Ibáñez-Masero, O., Carmona-Rega, M. I., Sánchez-Ruiz, M. J., & Ortega-Galán, Á. M. (2021). Professional quality of life, self-compassion, resilience, and empathy in healthcare professionals during COVID-19 crisis in Spain. Research in Nursing and Health, 44(4). https://doi.org/10.1002/nur.22158

Saddawi-Konefka, D., Brown, A., Eisenhart, I., Hicks, K., Barrett, E., & Gold, J. A. (2021). Consistency between State Medical License Applications and Recommendations Regarding Physician Mental Health. JAMA - Journal of the American Medical Association. https://doi.org/10.1001/jama.2021.2275

Savarese, G., Carpinelli, L., Stornaiuolo, G., Bifulco, S., Bruno, G., & Navarra, M. (2024). A Brief Report on the Correlation between Empathy and Gender Sensitivity among Italian Medical University Students. Preprints.Org. https://doi.org/10.20944/preprints202402.0360.v1

Schulze, H., Nacke, M., Gutenbrunner, C., & Hadamitzky, C. (2018). Worldwide assessment of healthcare personnel dealing with lymphoedema. Health Economics Review, 8(1). https://doi.org/10.1186/s13561-018-0194-6

Schwartz, R., Shanafelt, T. D., Gimmler, C., & Osterberg, L. (2020). Developing institutional infrastructure for physician wellness: Qualitative Insights from VA physicians. BMC Health Services Research, 20(1). https://doi.org/10.1186/s12913-019-4783-9

Spiers, J., Buszewicz, M., Chew-Graham, C., Dunning, A., Taylor, A. K., Gopfert, A., … Riley, R. (2021). What challenges did junior doctors face while working during the COVID-19 pandemic? A qualitative study. BMJ Open, 11(12). https://doi.org/10.1136/bmjopen-2021-056122

Spiers, J., Buszewicz, M., Chew-Graham, C., & Riley, R. (2018). The Experiences of General Practitioner Partners Living With Distress: An Interpretative Phenomenological Analysis. Journal of Health Psychology, 25(10–11), 1439–1449. https://doi.org/10.1177/1359105318758860

Sun, L., Zhang, Y., He, J., Qiao, K., Wang, C., Zhao, S., … Yang, Y. (2022). Relationship between psychological capital and depression in Chinese physicians: The mediating role of organizational commitment and coping style. Frontiers in Psychology, 13. https://doi.org/10.3389/fpsyg.2022.904447

Tan, A. J., Mancini, V., Gross, J. J., Goldenberg, A., Badcock, J. C., Lim, M. H., … Preece, D. A. (2022). Loneliness Versus Distress: A Comparison of Emotion Regulation Profiles. Behaviour Change, 39(3). https://doi.org/10.1017/bec.2022.18

Theeke, L. A., Mallow, J., Gianni, C., Legg, K., & Glass, C. (2015). The experience of older women living with loneliness and chronic conditions in Appalachia. Journal of Rural Mental Health, 39(2). https://doi.org/10.1037/rmh0000029

Turner, R. E., & Archer, E. (2020). Patient-centred care: The patients' perspective – A mixed-methods pilot study. African Journal of Primary Health Care and Family Medicine, 12(1). https://doi.org/10.4102/PHCFM.V12I1.2390

van Hof, K. S., Dulfer, K., Sewnaik, A., Baatenburg de Jong, R. J., & Offerman, M. P. J. (2024). The first steps in the development of a cancer-specific patient-reported experience measure item bank (PREM-item bank): towards dynamic evaluation of experiences. Supportive Care in Cancer, 32(2). https://doi.org/10.1007/s00520-023-08266-5

Walsh, G., Hayes, B., Freeney, Y., & McArdle, S. (2019). Doctor, how can we help you? Qualitative interview study to identify key interventions to target burnout in hospital doctors. BMJ Open, 9(9). https://doi.org/10.1136/bmjopen-2019-030209

Wei, Y., Tang, J., Zhao, J., Liang, J., Li, Z., & Bai, S. (2023). Association of loneliness and social isolation with mental disorders among medical residents during the COVID-19 pandemic: A multi-center cross-sectional study. Psychiatry Research, 327. https://doi.org/10.1016/j.psychres.2023.115233

Winkel, A. F., Robinson, A., Jones, A., & Squires, A. (2018). Physician Resilience: A Grounded Theory Study of Obstetrics and Gynaecology Residents. Medical Education, 53(2), 184–194. https://doi.org/10.1111/medu.13737

Xu, R. H., Wong, E. L. yi, Lu, S. Y. jun, Zhou, L. M., Chang, J. H., & Wang, D. (2020). Validation of the Toronto Empathy Questionnaire (TEQ) Among Medical Students in China: Analyses Using Three Psychometric Methods. Frontiers in Psychology, 11. https://doi.org/10.3389/fpsyg.2020.00810

Xu, W., Pan, Z., Li, Z., Lu, S., & Zhang, L. (2020). Job burnout among primary healthcare workers in rural china: A multilevel analysis. International Journal of Environmental Research and Public Health, 17(3). https://doi.org/10.3390/ijerph17030727

Yagci, H., Dayapoglu, N., & Karasahin, O. (2021). Evaluation of Stress and Burnout Levels of Healthcare Professionals Working in COVID-19 Services. Mersin Üniversitesi Tıp Fakültesi Lokman Hekim Tıp Tarihi ve Folklorik Tıp Dergisi, 11(2). https://doi.org/10.31020/mutftd.896858

Yuguero, O., Melnick, E. R., Marsal, J. R., Esquerda, M., & Soler-Gonzalez, J. (2018). Cross-sectional study of the association between healthcare professionals' empathy and burnout and the number of annual primary care visits per patient under their care in Spain. BMJ Open, 8(7). https://doi.org/10.1136/bmjopen-2017-020949

Zainab, S. (2023). Frequency of Burnout Syndrome in Doctors During COVID-19 Pandemic in a Tertiary Care Hospital. Isra Medical Journal, 15(2), 60–64. https://doi.org/10.55282/imj.oa1357

Zhang, Z., Lu, Y., Yong, X., Li, J., & Liu, J. (2020). Effects of occupational radiation exposure on job stress and job burnout of medical staff in xinjiang, China: A cross-sectional study. Medical Science Monitor, 27. https://doi.org/10.12659/MSM.927848

Zhao, R., Liu, F., & Zhu, K. (2020). Establishment of an Evaluation Index System of Competencies for Graduating Students in General Practice Medicine. https://doi.org/10.21203/rs.3.rs-54659/v2

Zheng, Q., Yang, K., Zhao, R. J., Wang, X., Ping, P., Ou, Z. H., … Qu, M. (2022). Burnout among doctors in China through 2020: A systematic review and meta-analysis. Heliyon. https://doi.org/10.1016/j.heliyon.2022.e09821

Ziegler, E., Martin-Misener, R., Rietkoetter, S., Baumann, A., Bougeault, I. L., Kovačević, N., … Bryant-Lukosius, D. (2023). Response and Innovations of Advanced Practice Nurses During the COVID-19 Pandemic: A Scoping Review. International Nursing Review, 71(2), 250–275. https://doi.org/10.1111/inr.12884