Exploring the impact of compassion and leadership on patient safety and quality in healthcare systems: a narrative review

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ABSTRACT

Background Patient safety and healthcare quality are considered integral parts of the healthcare system that are driven by a dynamic combination of human and non-human factors. This review article provides an insight into the two major human factors that impact patient safety and quality including compassion and leadership. It also discusses how compassion is different from empathy and explores the impact of both compassion and leadership on patient safety and healthcare quality. In addition, this review also provides strategies for the improvement of patient safety and healthcare quality through compassion and effective leadership.

Methods This narrative review explores the existing literature on compassion and leadership and their combined impact on patient safety and healthcare quality. The literature for this purpose was gathered from published research articles, reports, recommendations and guidelines.

Results The findings from the literature suggest that both compassion and transformational leadership can create a positive culture where healthcare professionals (HCPs) prioritise patient safety and quality. Leaders who exhibit compassion are more likely to inspire their teams to deliver patient-centred care and focus on error prevention.

Conclusion Compassion can become an antidote for the burnout of HCPs. Compassion is a behaviour that is not only inherited but can also be learnt. Both compassionate care and transformational leadership improve organisational culture, patient experience, patient engagement, outcomes and overall healthcare excellence. We propose that transformational leadership that reinforces compassion remarkably improves patient safety, patient engagement and quality.

INTRODUCTION

Across the world, healthcare leaders continue to face a multitude of challenges as they strive to deliver quality healthcare.[1] Some of these challenges include access and financial barriers to care, shortage of skilled healthcare workforce, mental health issues, burden of chronic and infectious diseases, antimicrobial resistance and concerns for patient safety and healthcare quality.[2–4]

Patient safety and quality of care are critical challenges within healthcare systems worldwide. Ensuring that patients receive safe and high-quality care is essential for improving healthcare outcomes.[2 5]

Patient safety challenges encompass a wide range of issues, including medication errors, hospital-acquired infections, surgical mistakes and misdiagnoses.[6] These errors can result from factors such as miscommunication among healthcare professionals (HCPs), inadequate training and system failures. Quality of care involves providing effective and evidence-based treatments that meet the individual needs of patients.[7] However, variations in care delivery, inappropriate or unnecessary treatments and disparities in healthcare access can have an adverse impact on healthcare quality.[2 8]

Patient safety and healthcare quality are considered vital parts of the healthcare system.[9] Patient safety is a healthcare discipline that emerged with the evolving complexity of healthcare systems and the resulting rise of patient harm in healthcare facilities. It aims to prevent and reduce risks, errors and harm that occur to patients during the provision of healthcare.[10 11] Quality of care is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes.[7] Quality healthcare can be defined in many ways, but there is a growing need for quality health services that should be effective, safe and people-centred.[7 12]

Patient safety and quality of care within healthcare systems are driven by a dynamic combination of human and non-human factors.[13] Human factors are the foundation of modern patient safety and healthcare quality approaches, providing an integrated and evidence-based approach to clinical excellence.[14] Human factors in the context of patient safety and quality are defined as improving clinical outcomes by understanding the impact of teamwork, equipment, culture and organisation of human behaviour and their application in clinical practice.[15] By

recognising human constraints, human factors provide ways to reduce human inaccuracy, thereby reducing the risk of medical error and its associated outcomes.[14 16]

This review article provides insight into two major human factors that impact patient safety and quality including compassion and leadership.[17] Not only do these two affect the quality of care, but they also play a significant role in improving patient outcomes. Leadership is the role that people play in leading and guiding healthcare organisations towards excellence. Effective leadership involves managing resources, motivating people around a shared purpose and creating an environment that promotes the highest quality of patient care.[18 19] Compassion, on the other hand, is a concept that is not always understood and is relatively unknown today. It is the ability to empathise with another person's suffering, along with the readiness to help and promote that person's well-being and to find a way to alleviate their distress.[20]

Leadership and compassion are two fundamental elements that have a significant impact on patient safety and the quality of healthcare.[18 21–23]

Leadership in healthcare institutions creates a culture that places patient well-being at the centre of the organisation. When leaders prioritise patient safety and quality of care, it is heard across the board. Leadership creates accountability structures that promote open communication, accurate reporting of errors and constant pursuit of improvement.[19] Compassion is the patient-centred approach, which involves recognising and empathising with patients, fostering open dialogue and establishing trust between the HCPs and patients.[24] HCPs who are compassionate, engage with patients, address their concerns and genuinely care for them. This allows them to better understand potential risks, reduce medical errors and build patient trust.[20]

This article aims to shed light on compassion and leadership that have an impact on patient safety and quality. It also discusses how compassion is different from empathy and explores the impact of both compassion and leadership on patient safety and healthcare quality. In addition, this review also provides strategies for improving patient safety and healthcare quality through compassion and leadership.

METHODS

This narrative review explores the existing literature on compassion and leadership and their combined impact on patient safety and healthcare quality. The literature for this purpose was gathered from published research articles, reports, recommendations and guidelines. Google Scholar, PubMed and Embase were used for the literature search, with the search terms 'leadership', 'compassion', 'patient safety' and 'quality'.

COMPASSION IN HEALTHCARE SYSTEM

The concept of compassion is derived from empathy, which is the capacity to empathise with the suffering of others. Compassion is an emotional response that seeks to promote the well-being of patients by following logical actions to find a way to eliminate their distress.[25] It can be conceived as the willingness to understand the pain of another person, along with the desire to help by finding the right solutions to ensure their well-being.[26] A lack of compassion can lead to an unsupportive work environment, causing HCPs to experience stress and burnout. In such cases, the peers do not extend support to each other, resulting in low self-esteem, reduced job satisfaction and overall well-being.[27] However, a culture of compassionate care not only improves health outcomes but also creates a sense of personalisation in HCPs that results in building a better team, and communication followed by lesser stress and burnout in HCPs. This will eventually reduce preventable medical harm by team members.[28 29]

How compassion is different from empathy

Compassion is often misinterpreted with empathy, as most healthcare research focuses on empathy rather than compassion.[30] In health systems, both terms are used interchangeably to describe some of the 'human qualities' that patients look for in their HCPs.[31–34] In the healthcare literature, empathy is defined as the capacity to comprehend and recognise the emotions of another person, resulting in an appropriate response from the person being observed.[35 36] Generally, researchers distinguish between cognitive empathy (recognising and understanding a distressful situation out of a sense of obligation) or affective empathy (which includes each element of cognitive empathy) and 'feeling with' someone in order to acknowledge and understand their situation.[35 36]

Compassion is defined as 'a deep sense of awareness of another person's suffering combined with the desire to alleviate that suffering'.[37 38] It is marked by the following three elements: recognising suffering, relating to people in their suffering and reacting to suffering.[39]

In addition, compassion and empathy have been shown to enhance patient satisfaction and improve patient-reported outcomes.[35] The difference between empathy and compassion is also given in table 1.[40]

How compassion works

Some researchers agree that compassion is inherited, while others argue that it can be learnt.[41] Whether inherited or learnt, compassion can have a significant impact on patient safety and quality.[42 43] These impacts can be classified into four main categories: psychological effects, physiological effects, increased patient self-care and increased healthcare quality.[44] When HCPs show compassion towards their colleagues, they are more attentive and are less prone to make a critical medical error.[40 45 46]

Numerous studies have linked compassion with improved patient outcomes.[23 47–49] In one study, patients recommended doctors who were more compassionate to their friends and family.[50]

A systematic review, published in the *Harvard Review of Psychiatry*, investigated the effectiveness of

Table 1 Difference between empathy and compassion

Aspects	Empathy	Compassion
Focus	Knowing how to listen to what someone is feeling, what they are going through and what they think.	The ability to empathise with someone's pain or suffering and to genuinely want to help them and make them feel better.
Response type	The mode of action is primarily cognitive and emotional.	A combination of emotional and motivational elements, often resulting in action.
Emotional tone	Can sometimes be emotionally exhausting, as it may involve sharing in another's pain or suffering	Evoke positive feelings such as kindness, care and meaning.
Outcome	Focuses on understanding and empathising with another person's feelings without necessarily taking any action.	More likely to result in positive behaviour and kind actions.
Feeling	Can sometimes cause withdrawal behaviours.	Can evoke positive emotions

compassion-based interventions for patients with mental disorders and found them to be highly effective.[51–56]

A meta-analysis of 21 randomised controlled trials found that compassion significantly lowers the symptoms of depression, anxiety and psychological distress while improving overall well-being.[57]

Another meta-analysis conducted by the National Institutes of Health found that patient-centred communication from HCPs was associated with 62% higher chances of patient adherence to treatment.[58]

A few other studies have shown that treating patients with compassion leads them to be more involved in their own healthcare, resulting in improved health outcomes.[59–61]

A study conducted by the University of California assessed over 9000 diabetics and found that patients who received compassionate care from their HCPs had better blood glucose control and experienced fewer complications requiring hospitalisation.[62]

How compassion fosters the culture of improved patient safety and quality

Compassion is an essential element in promoting a culture of enhanced quality and patient safety within healthcare institutions.[49] When HCPs demonstrate compassion and empathy towards their colleagues, patients and caregivers, it has a positive effect on a variety of elements that contribute to improved quality of service and patient protection.[42 43]

Compassionate interactions foster an open and honest dialogue between HCPs, patients and their families, which can help to identify and address potential risks, mistakes or misinterpretations that could endanger patient safety.[44] These interactions promote transparent and open dialogue between HCPs, patients and their caregivers.[63] This dialogue facilitates the identification and prevention of potential risks, mistakes or misinterpretations that could compromise patient health and safety. Compassion emphasises the needs, preferences and overall well-being of the patient.[64]

HCPs who demonstrate genuine concern for the physical and emotional well-being of their patients tend to provide more effective, patient-focused care that considers the individual's needs, resulting in better results.[65 66]

Additionally, compassion can help foster trust between patients and HCPs, which in turn leads to more adherence to treatment plans and safety recommendations.[67] Furthermore, compassion encourages patients and their families to voice their worries, which can help to identify and address safety issues sooner.[44] Compassion contributes to the development of a reassuring atmosphere in which patients are more inclined to share pertinent medical information and voice any safety concerns.[68] In a compassion-driven culture, HCPs are encouraged to report errors and close calls without fear of dismissal or disciplinary action. This fosters a culture of learning from mistakes and the implementation of corrective measures to avoid similar incidences down the line.[69 70]

LEADERSHIP IN THE HEALTHCARE SYSTEM

Leadership is the ability to direct the actions of a group of people towards a shared purpose. It is a set of practices that facilitate and help people to agree on a common course of action and execute strategic actions for the continuous growth of an organisation.[71]

Leaders in the healthcare system are responsible for cultivating a culture of patient safety and healthcare quality. This is achieved through establishing standards and clear objectives, providing training and fostering an environment where employees are empowered to express their patient safety concerns.[72]

Over the century, leadership has been considered a subject of interest.[73] In the 20th and 20st centuries, a variety of healthcare leadership styles have been identified such as autocratic leadership, transformational leadership, situational leadership, collaborative leadership,

ethical leadership and servant leadership among others.[74] It is important to note that the effectiveness of leadership style varies from situation to situation and one leadership style may not be effective in every context. Therefore, an effective leader should be able to switch between different leadership styles as the situation demands.[75]

TRANSFORMATIONAL LEADERSHIP

Transformational leadership is often considered the most effective style of leadership in healthcare for enhancing patient safety and quality.[76] These leaders motivate their teams to deliver high-quality care by defining a clear vision, empowering staff and focusing on patient-centred care and continuous improvement.[77] This style of leadership encourages innovation, responsibility and collaboration, which aligns with the fundamental values of healthcare organisations committed to providing the highest quality of care for their patients.[78 79]

Transformational leaders guide their followers and encourage them to reach their full potential.[74 75 78] This leadership style has been demonstrated to improve teamwork, staff performance, functioning and satisfaction,[80–82] new employee retention,[83] as well as patient care and satisfaction.[78 79 84] However, other leadership skills should be supplemented with transformational leadership to ensure improved employee performance, patient safety and healthcare quality.[83] Transformational leaders often set higher standards and take more calculated risks.[85] However, it is important for these leaders to respect their followers and treat them with fairness.[83]

How transformational leadership fosters the culture of improved patient safety and quality

Transformational leaders foster a culture of open communication and continuous improvement, and they empower staff to ensure patient safety and healthcare quality.[86] These leaders lead by example and set the bar for patient care excellence.[87] They focus on patient-centric care and create fault-free environments where staff can accurately report errors and work together to avoid future incidences.[88] Transformational leaders, in essence, cultivate a culture of innovation, accountability and excellence that is beneficial to both patients and the healthcare organisation, making it one of the most suitable types of leadership for improving patient safety and healthcare quality.[82 89]

How does the absence of leadership qualities impact the healthcare system?

Effective leadership in the healthcare system is essential to ensure the delivery of high-quality care and patient safety.[90] However, when there is a deficit in leadership qualities, it can have profound consequences on the healthcare system.[91] An example of Ignaz Semmelweis, a Hungarian doctor, who concluded that the higher infection rate among women delivered by doctors and medical students was due to the mishandling of corpses prior to attending the pregnant women, which the midwives

did not do. He conducted a study and suggested hand washing as an intervention. He then started a compulsory handwashing policy among doctors and medical students, which reduced the mortality rate significantly. However, his supervisor did not agree with his findings and argued that the reduction in mortality was caused by the hospital's new ventilation system. The assistant professorship of Semmelweis was also not renewed. Feeling dejected, he moved back home to Budapest and later died at the age of 47 in an asylum. Although he was the first to prove scientifically that hand washing prevents infections, unfortunately, due to the lack of leadership skills it was not until 20 years after his death that people started looking back on his work and gave him the due recognition he deserved.[73 92]

On the other hand, Ernest Amory Codman was a surgeon at Massachusetts General Hospital, Boston who made it his mission to follow each patient throughout their entire treatment. He noticed errors in the diagnostics and treatments and linked them to the outcomes so that he could suggest and make changes. His suggestions were not accepted by his peers, due to which he resigned and later established his own hospital called the 'End Result Hospital'. From 1911 to 1916, Codman's hospital discharged 337 patients out of which he recorded 123 errors that he grouped into various categories of medical errors. He admitted his errors and printed them in the annual hospital report so that the patients could judge themselves on the quality of care they had been receiving. His ideas and suggestions were rejected by the medical fraternity, but his leadership and perseverance kept him going which later rewarded him with the title of 'martyr of quality'.[42 93]

It has been proven time and time again that physicians with weak leadership can negatively impact the quality of care they provide.[91] Poor leadership can lead to communication issues between healthcare teams, making it harder to make decisions and even putting patients at risk.[94] Leaders who cannot fight for patient safety and quality initiatives, and fail to adjust to changing healthcare needs, may contribute to employee burnout and turnover.[42 94]

COMBINED IMPACT OF COMPASSION AND LEADERSHIP ON PATIENT SAFETY AND QUALITY

Compassion and leadership are key to patient safety and quality in health systems.[95] The combination of compassionate care along transformational leadership improves patient satisfaction, outcomes and overall healthcare excellence.[30] Compassionate care is all about empathising with patients, listening to them and caring for their physical and emotional health,[96] which leads to better communication and adherence to treatment plans.[97] On the contrary, healthcare leadership can create a culture where HCPs put patient safety and quality first.[98] Transformational leaders who show compassion tend to motivate their teams to focus on patient care and prevent medical

errors.[18 99–101] They also encourage open communication, give feedback and promote continuous improvement, all of which help to improve patient safety and healthcare quality.[102]

STRATEGIES FOR ESTABLISHING A CULTURE OF PATIENT SAFETY AND QUALITY THROUGH EFFECTIVE LEADERSHIP AND COMPASSION

Creating a culture of compassion and leadership that centres around patient safety and quality of care requires continuous efforts, dedication and perseverance.

► Begin from the top to ensure that senior leadership, including executives, administrators and department heads are committed to the core values of compassion, patient safety and quality care. Ensure that these values are visible and practised throughout the organisation.

► Provide training programmes that cover compassion, transformational leadership and their impact on patient safety and healthcare quality. The key components of these training courses should include empathy, active listening and conflict resolution.

► Empower employees to take ownership of patient safety and healthcare quality initiatives. Encourage them to raise their concerns openly and without fear of reprisal. Make communication channels open and transparent. Encourage staff, patients and families to provide feedback regularly. Properly record and analyse the feedback received to identify areas of improvement.

► Create a supportive work environment where multidisciplinary teams efficiently communicate and collaborate to achieve patient safety and quality standards. This could be achieved by defining proper roles of individuals within teams, regular training programmes, weekly team meetings and ensuring that teams have proper resources such as time, skills and technology to effectively carry out their responsibilities.

► Create a culture of continuous improvement. Encourage employees to report and respond to near misses, incidents, adverse events and system deficiencies. Review and revise policies regularly based on the feedback and lessons learnt. Reward employees who show exceptional dedication to patient care and healthcare quality.

► Set key performance indicators (KPIs) for patient safety and healthcare quality. Monitor these KPIs regularly to identify trends, achievements and areas of improvement.

► Hold leaders and employees accountable if they uphold the values of compassion, patient safety and quality care.

CONCLUSION

Compassion can become an antidote for the burnout of HCPs. Compassion is a behaviour that is not only inherited but can also be learnt. Both compassionate care and transformational leadership improve organisational culture, patient experience, patient engagement and overall healthcare excellence. We propose that transformational leadership that reinforces compassion remarkably improves patient safety, patient engagement and quality.

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REFERENCES

1 Katoue MG, Cerda AA, García LY, *et al*. Healthcare system development in the Middle East and North Africa region: challenges, endeavors and prospective opportunities. *Front Public Health* 2022;10:1045739.
2 Roncarolo F, Boivin A, Denis J-L, *et al*. What do we know about the needs and challenges of health systems? A Scoping review of the International literature. *BMC Health Serv Res* 2017;17.
3 Kluwer W. Six challenges to delivering quality healthcare 2022, Available: https://www.wolterskluwer.com/en/expert-insights/six-challenges-to-delivering-quality-healthcare [Accessed 27 Feb 2024].
4 Khan SJ, Asif M, Aslam S, *et al*. Pakistan's Healthcare system: a review of major challenges and the first comprehensive universal health coverage initiative. *Cureus* 2023;15:e44641.
5 West MA. Creating a culture of high-quality care in health services. *Global Economics and Management Review* 2013;18:40–4.
6 Siman AG, Braga LM, Amaro M de O, *et al*. Practice challenges in patient safety. *Rev Bras Enferm* 2019;72:1504–11.
7 WHO. Quality of care, Available: https://www.who.int/health-topics/quality-of-care
8 Williams DR, Rucker TD. Understanding and addressing racial disparities in health care. *Health Care Financ Rev* 2000;21:75–90.
9 Gupta M, Soll R, Suresh G. The relationship between patient safety and quality improvement in Neonatology. *Semin Perinatol* 2019;43.
10 Na DEC, Hipertensiva C. Patient safety. 2023. Available: https://www.who.int/news-room/fact-sheets/detail/patient-safety
11 Emanuel L, Berwick D, Conway J, *et al*. What exactly is patient safety. *J Med Regul* 2009;95:13–24.
12 Campbell SM, Roland MO, Buetow SA. Defining quality of care. *Soc Sci Med* 2000;51:1611–25.
13 Norris B. Human factors and safe patient care. *J Nurs Manag* 2009;17:203–11.
14 Motiwala F, Motiwala H, Goonewardene SS. Human factors in Healthcare. In: *When Things Go Wrong In Urology: Reflections to Improve Practice*.
15 Stramler JH. *The dictionary for human factors*. *The Dictionary for Human Factors/Ergonomics*. Taylor and Francis Group, 1993.

16 Rosen MA, Diazgranados D, Dietz AS, *et al*. Teamwork in healthcare. *Teamwork in Healthcare*. 2020: 433–50.

17 Cochrane BS, Ritchie D, Lockhard D, *et al*. A culture of compassion: how timeless principles of kindness and empathy become powerful tools for confronting today's most pressing Healthcare challenges. *Healthc Manage Forum* 2019;32:120–7.

18 Sfantou DF, Laliotis A, Patelarou AE, *et al*. Importance of leadership style towards quality of care measures in Healthcare settings: A systematic review. *Healthcare (Basel)* 2017;5:73.

19 McFadden KL, Stock GN, Gowen CRI. Leadership, safety climate, and continuous quality improvement impact on process quality and patient safety. *Health Care Manage Rev* 2015;40:24–34.

20 Perez-Bret E, Altisent R, Rocafort J. Definition of compassion in Healthcare: A systematic literature review. *Int J Palliat Nurs* 2016;22:599–606.

21 Jemal K, Hailu D, Mekonnen M, *et al*. The importance of compassion and respectful care for the health workforce: a mixed-methods study. *J Public Health (Berl)* 2023;31:167–78.

22 Frampton SB, Guastello S, Lepore M. Compassion as the foundation of patient-centered care: the importance of compassion in action. *J Comp Eff Res* 2013;2:443–55.

23 Gelkop C, Kagan I, Rozani V. Are emotional intelligence and compassion associated with nursing safety and quality care? A cross-sectional investigation in pediatric settings. *J Pediatr Nurs* 2022;62:e98–102.

24 Amutio-Kareaga A, García-Campayo J, Delgado LC, *et al*. Improving communication between physicians and their patients through Mindfulness and compassion-based strategies: A narrative review. *J Clin Med* 2017;6.

25 Strauss C, Lever Taylor B, Gu J, *et al*. What is compassion and how can we measure it? A review of definitions and measures. *Clin Psychol Rev* 2016;47:15–27.

26 Mascaro JS, Florian MP, Ash MJ, *et al*. Ways of knowing compassion: how do we come to know, understand, and measure compassion when we see it? *Front Psychol* 2020;11:547241.

27 Ellahham S. The domino effect of medical errors. *Am J Med Qual* 2019;34:412–3.

28 Day H. Compassionate care and reduce harm. In: *Brittish Journal of Nursing* . 2014: 23. 974–80.

29 Schneider-Biehl T, Koehn A. Patient safety. In: *Neonatal Nurse Practitioner Certification Intensive Review: Fast Facts and Practice Questions*. 2019: 427–31.

30 de Zulueta PC. Developing compassionate leadership in health care: an integrative review. *J Healthc Leadersh* 2016;8:1–10.

31 Francis R. Mid Staffordshire NHS foundation trust public inquiry. *Nursing Standard* 2010;25:30.

32 Crowther J, Wilson KCM, Horton S, *et al*. Compassion in Healthcare - lessons from a qualitative study of the end of life care of people with dementia. *J R Soc Med* 2013;106:492–7.

33 Heyland DK, Cook DJ, Rocker GM, *et al*. Defining priorities for improving end-of-life care in Canada. *CMAJ* 2010;182:E747–52.

34 TonyT. A guide to empathy and compassion the difference between empathy and compassion – and why we need both N.D. n.d. Available: https://www.tonyrobbins.com/mind-meaning/compassion-vs-empathy/

35 Post SG, Ng LE, Fischel JE, *et al*. Routine, Empathic and compassionate patient care: definitions, development, obstacles, education and beneficiaries. *J Eval Clin Pract* 2014;20:872–80.

36 Soanes CS, Empathy. *Oxford English dictionary of English*.

37 Hoad TF. *The Concise Oxford Dictionary of English Etymology*. 2003.

38 The American heritage dictionary of the English language. In: *Houghton Mifflin Harcourt Trade*. 2011.

39 Way D, Tracy SJ. Conceptualizing compassion as recognizing, relating and (Re)Acting: A qualitative study of compassionate communication at Hospice. *Communication Monographs* 2012;79:292–315.

40 Menendez ME, Chen NC, Mudgal CS, *et al*. Physician empathy as a driver of hand surgery patient satisfaction. *J Hand Surg Am* 2015;40:1860–5.

41 Lown BA. Compassion is a necessity and an individual and collective responsibility: comment on "Why and how is compassion necessary to provide good quality Healthcare. *Int J Health Policy Manag* 2015;4:613–4.

42 Trzeciak S, Roberts BW, Mazzarelli AJ. Compassionomics: hypothesis and experimental approach. *Med Hypotheses* 2017;107:92–7.

43 Malenfant S, Jaggi P, Hayden KA, *et al*. Compassion in Healthcare: an updated Scoping review of the literature. *BMC Palliat Care* 2022;21.

44 Dempsey C. The impact of compassionate connected care on safety, quality, and experience in the age of COVID-19. *Nurse Lead* 2021;19:269–75.

45 Daniel H, Lynn M, Gary E-L, *et al*. Populations T variation and factors influencing vertical migration behavior in HHS public access. *Physiol Behav* 2017;176:139–48.

46 Pestian T, Awtrey E, Kanov J, *et al*. The impact of organizational compassion in health care on Clinicians: A Scoping review. *Worldviews Evid Based Nurs* 2023;20:290–305.

47 Thoresen E by TGP and CE. Chapter 8 compassion and health. In: *spirit,science,and health*. How the spiritual mind fuels physical wellness, 2007.

48 Maillet S, Read EA. Areas of work-life, psychological capital and emotional intelligence on compassion fatigue and compassion satisfaction among nurses: A cross-sectional study. *Nurs Open* 2024;11.

49 Watts E, Patel H, Kostov A, *et al*. The role of compassionate care in medicine: toward improving patients' quality of care and satisfaction. *J Surg Res* 2023;289:1–7.

50 Hojat M LDZ. A brief instrument to. In: *Family medicine*. 2011.

51 Braehler C, Gumley A, Harper J, *et al*. Exploring change processes in compassion focused therapy in psychosis: results of a feasibility randomized controlled trial. *Br J Clin Psychol* 2013;52:199–214.

52 Laithwaite H, O'Hanlon M, Collins P, *et al*. Recovery after psychosis (RAP): A compassion focused programme for individuals residing in high security settings. *Behav Cogn Psychother* 2009;37:511–26.

53 Graser J, Stangier U. Compassion and loving-kindness meditation: an overview and prospects for the application in clinical samples. *Harv Rev Psychiatry* 2018;26:201–15.

54 Johnson SB, Goodnight BL, Zhang H, *et al*. Compassion-based meditation in African Americans: self-criticism mediates changes in depression. *Suicide Life Threat Behav* 2018;48:160–8.

55 Au TM, Sauer-Zavala S, King MW, *et al*. Compassion-based therapy for trauma-related shame and Posttraumatic stress: initial evaluation using a multiple baseline design. *Behav Ther* 2017;48:207–21.

56 Kelly AC, Wisniewski L, Martin-Wagar C, *et al*. Group-based compassion-focused therapy as an adjunct to outpatient treatment for eating disorders: A pilot randomized controlled trial. *Clin Psychol Psychother* 2017;24:475–87.

57 Kirby JN, Tellegen CL, Steindl SR. A meta-analysis of compassion-based interventions: Current state of knowledge and future directions. *Behav Ther* 2017;48:778–92.

58 Zolnierek KBH, Dimatteo MR. Physician communication and patient adherence to treatment: a meta-analysis. *Med Care* 2009;47:826–34.

59 Neumann M, Wirtz M, Bollschweiler E, *et al*. Determinants and patient-reported long-term outcomes of physician empathy in oncology: a structural equation Modelling approach. *Patient Educ Couns* 2007;69:63–75.

60 Heszen-Klemens I, Lapińska E. Doctor-patient interaction, patients' health behavior and effects of treatment. *Soc Sci Med* 1984;19:9–18.

61 Kerse N, Buetow S, Mainous AG, *et al*. Physician-patient relationship and medication compliance: A primary care investigation. *Ann Fam Med* 2004;2:455–61.

62 Ratanawongsa N, Karter AJ, Parker MM, *et al*. Communication and medication refill adherence the diabetes study of Northern California. *JAMA Intern Med* 2013;173:210–8.

63 George JM. Compassion in Healthcare: theoretical perspectives and attributes. *Int J Health Sci Res* 2022;12:340–8.

64 Zulueta P. How do we sustain compassionate Healthcare? compassionate leadership in the time of the COVID-19 pandemic. *Clinics in Integrated Care* 2021.

65 Baguley SI, Pavlova A, Consedine NS. More than a feeling? What does compassion in Healthcare 'look like' to patients. *Health Expect* 2022;25:1691–702.

66 Azizam NA, Shamsuddin K. Healthcare provider-patient communication: A satisfaction study in the outpatient clinic at hospital Kuala Lumpur. *Malays J Med Sci* 2015;22:56–64.

67 Weiner S. Can compassion help heal patients — and providers? Association of American Medical colleges 2019. Available: https://www.aamc.org/news/can-compassion-help-heal-patients-and-providers#:~:text=Compassionate care is associated with,burnout and greater well-being [Accessed 27 Feb 2024].

68 Sinclair S, Norris JM, McConnell SJ, *et al*. Compassion: A Scoping review of the Healthcare literature knowledge, education and training. *BMC Palliat Care* 2016;15:1–16.

69 Rizal F, Egan H, Mantzios M. Compassion, and self-compassion as moderator of environmental support on competency in mental health nursing. *SN Compr Clin Med* 2021;3:1534–43.

70 Strahan E. Compassionomics: the revolutionary scientific evidence that caring makes a difference. *Fam Med* 2020;52:454–5.

71 Naidu M. Leadership and management strategies that promote the implementation of consumer-centred care in residential aged care facility. *JBM* 2019;07:73–101.

72 Company M. What is leadership? 2022. Available: https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-leadership

73 Jambawo S. Transformational leadership and ethical leadership: their significance in the mental Healthcare system. *Br J Nurs* 2018;27:998–1001.

74 Doody O, Doody CM. Nursing practice. *Nurs Times* 1988;84:59–66.

75 Jazylo JV, Leadership Style Varies in Terms of Effectiveness. Leadership capital group. 2018. Available: https://lcgsearch.com/2023/10/16/leadership-style-varies-in-terms-of-effectiveness/#:~:text=There

76 Institute of medicine (US)Committee on the work environment for nurses and patient safety. In: *Keeping Patients Safe: Transforming the Work Environment of Nurses*. The National Academies Press, 2004: 488.

77 Iqbal K, Fatima T, Naveed M. The impact of Transformational leadership on nurses' organizational commitment: A multiple mediation model. *Eur J Investig Health Psychol Educ* 2019;10:262–75.

78 Henwood S, Soosalu G. Conclusions and moving forward. 2014. Available: https://doi.org/10.1201/b16629

79 Avery GC. *Understanding leadership: paradigms and cases*. *Understanding Leadership: Paradigms and Cases*. 1 Oliver's Yard, 55 City Road, London EC1Y 1SP United Kingdom : SAGE Publications Ltd, 2011.

80 Weberg D. Transformational leadership and staff retention: an evidence review with implications for Healthcare systems. *Nurs Adm Q* 2010;34:246–58.

81 Lavoie-Tremblay M, Fernet C, Lavigne GL, *et al*. Transformational and abusive leadership practices: impacts on novice nurses, quality of care and intention to leave. *J Adv Nurs* 2016;72:582–92.

82 Publichealth.tulane.edu. The importance of Healthcare leadership. PublichealthTulaneEdu; 2021. Available: https://publichealth.tulane.edu/blog/healthcare-leadership/#:~:text=Healthcare

83 Fischer SA. Transformational leadership in nursing: a concept analysis. *J Adv Nurs* 2016;72:2644–53.

84 Wong CA, Cummings GG, Ducharme L. The relationship between nursing leadership and patient outcomes: A systematic review update. *J Nurs Manag* 2013;21:709–24.

85 Chen Y, Ning R, Yang T, *et al*. Is Transformational leadership always good for employee task performance? examining curvilinear and moderated relationships. *Front Bus Res China* 2018;12:117–33.

86 Tangatarova S, Gao Y. Transformational leadership and patient safety in hospital: the roles of safety culture, decision-making

capacity, and locus of control. *International Journal of Research in Business and Social Science* 2021;10:106–22.

87 Connolly D. *A descriptive correlational study to examine the relationship between transformational leadership and the quality of nursing care*. 2010.

88 Liukka M, Hupli M, Turunen H. How Transformational leadership appears in action with adverse events? A study for Finnish nurse manager. *J Nurs Manag* 2018;26:639–46.

89 Hughes RG, ed. *Patient Safety and Quality: An Evidence-Based Handbook for Nurses*. Rockville (MD): Agency for Healthcare Research and Quality (US), 2008.

90 Jennings BM, Disch J, Senn L. Leadership. In: Hughes R, ed. *Patient Safety and Quality: An Evidence-Based Handbook for Nurses., Agency for Healthcare Research and Quality (US)*. 2008.

91 Figueroa CA, Harrison R, Chauhan A, *et al*. Priorities and challenges for health leadership and workforce management globally: A rapid review. *BMC Health Serv Res* 2019;19.

92 Schreiner S. Ignaz Semmelweis: a victim of Harassment. *Wien Med Wochenschr* 2020;170:293–302.

93 Donabedian A. The end results of health care: Ernest Codman's contribution to quality assessment and beyond. *Milbank Q* 1989;67:233–56.

94 Ghiasipour M, Mosadeghrad AM, Arab M, *et al*. Leadership challenges in health care organizations: the case of Iranian hospitals. *Med J Islam Repub Iran* 2017;31:560–7.

95 Leotsakos A, Petsanis K, Zhao H, *et al*. *Leadership Competencies framework on patient safety and quality of care (DRAFT)*. 2014.

96 Babaei S, Taleghani F, Farzi S. Components of compassionate care in nurses working in the cardiac wards: A descriptive qualitative study. *J Caring Sci* 2022;11:239–45.

97 Cole-King A, Gilbert P. Compassionate care: the theory and the reality. *Providing Compassionate Healthcare: Challenges in Policy and Practice* 2014:68–84.

98 Albright-Trainer B, Dayal R, Aalok Agarwala EP. Effective leadership and patient safety culture. *The Anesthesia Patient Safety Foundation* 2020;35.

99 Ystaas LMK, Nikitara M, Ghobrial S, *et al*. The impact of Transformational leadership in the nursing work environment and patients' outcomes: A systematic review. *Nurs Rep* 2023;13:1271–90.

100 Pattison N, Corser R. Compassionate, collective or Transformational nursing leadership to ensure fundamentals of care are achieved: A new challenge or non-Sequitur. *J Adv Nurs* 2023;79:942–50.

101 The importance of Transformational leadership and medication errors. n.d. Available: https://www.123helpme.com/essay/The-Importance-Of-Transformational-Leadership-And-Medication-729316

102 Tenney M. Compassionate leadership in Healthcare. Business LeadershipToday. n.d. Available: https://businessleadershiptoday.com/what-is-compassionate-leadership-in-healthcare