REVIEWS

Professionalism in healthcare: Time to renew commitment

Joann C. Harper*[1,2], Paul A. Silka[2]

[1] Department of Healthcare Leadership, National University, San Diego, CA, USA
[2] Department of Emergency Medicine, Oregon Health Science University, USA

Received: May 7, 2024 **Accepted:** August 12, 2024 **Online Published:** August 23, 2024
DOI: 10.5430/jnep.v14n12p32 **URL:** https://doi.org/10.5430/jnep.v14n12p32

ABSTRACT

This paper re-examined professional behavior because of its prominent significance to healthcare safety and outcomes. The authors sought to better understand what factors contribute to what is seemingly an erosion of professional behavior within the modern healthcare environment. To date, publications focus on educational and institutional factors, applied locally to organizational and academic programs to teach, mentor professionalism and remediate misbehavior. The literature was studied to inform educators and practitioners alike of what may be unexplored drivers to witnessed unprofessional behaviors and to validate our current experience. First, a brief overview of the contemporary history and the classical tenets of professionalism were undertaken and then a three-pronged approach investigated potential influences that might affect professional behavior: (1) the effects of popular culture using social media as a proxy; (2) a review of academic education and training through the formal and informal curricula; and (3) the commodification of healthcare as a proxy for secular change. There were no discoveries that compared studies to evaluate the direct effects of popular culture and secular change on professional behaviors over time, since secular forces evolve, and societal variables don't remain constant. However, findings indicated that while proper behavior declarations abound through professional organizations and academic curricula, professionalism wanes in the current health care environment. We assert that the external drivers within our respective secular societies be considered with more significant emphasis to weigh the root causes of unprofessional behavior to recognize and respond to these forces. Given the covenant to uphold professional values to promote patient safety and ethical dispositions, we call for the renewal of professionalism with the requisite industry, academic and secular insight to succeed.

Key Words: Professionalism, Healthcare industry, Curriculum, Academic development, Ethics, Safety, Quality

1. INTRODUCTION

Professionalism in Western Healthcare has been a central topic of many educators and authors for decades. An implicit social contract exists whereby healthcare professionals will uphold the highest of behavioral and ethical standards.[1] Cruess and Cruess recounted significant influences on the history of professionalism in healthcare.[2] The ability of healthcare professions, particularly medicine, to consistently self-direct and self-regulate in the public's interest came under fire near the end of the 20th Century. Institutions became increasingly focused on business operations with increasingly bureaucratic organizational structures that began to set standards for practice in healthcare while concurrently assuming control of financial arrangements and performance evaluations.[2] Managed care as a delivery model evolved and payers and healthcare institutions restructured to remain profitable and viable following the US enactment of the 1983 prospective payment system legislation. With the structural

*Correspondence: Joann C. Harper; Email: jc.harper@live.com; Address: Department of Healthcare Leadership, National University, San Diego, CA, USA.

changes to the operational infrastructure experienced within the developing healthcare marketplace, the nineties might be considered the period during which the first authentic threat to the medical profession's autonomy was experienced as the corporate practice of medicine took shape despite legal mandates to the contrary.

Concurrent with forces to control healthcare expenditures, in the year 2000, the Institute of Medicine (IOM) (now the National Academy of Medicine) published To Err is Human: Building a Safer Health System (Institute of Medicine, 2000).[3] This report described large numbers of in-hospital deaths occurring annually across the U.S. believed to be due to medical errors committed by healthcare professionals. The report urged re-engineering of systems and processes of care which can mitigate the impact of human error by safety centric workflow designs that can be deployed to thwart healthcare professionals drifting from best practice. The public admission by the IOM, a well-respected governmentally sponsored institution which had been a guiding force in medical policy, that medical errors could be inflicted by healthcare professionals, was groundbreaking. The safety alert had been sounded for the medical community and patient safety became a national initiative in the US.

While errors do not infer unprofessionalism, following the publication of To Err is Human report, institutions and scholars put forth policies and publications which amplified the responsibilities of healthcare professionals in a new era of intense focus on patient safety and quality.[4–13] The overarching concern then, and now, is how the diminution of professionalism threatens healthcare quality and is a direct risk to patient safety.[10,14–20] Furthermore, the curating of a culture of professionalism is the responsibility of healthcare teachers, clinicians, managers, and executives in all allied healthcare fields. To attain such a culture, institutions and professional organizations developed standards and curriculum to teach and maintain professionalism.[4,8,13] Despite these developments, increasingly complex care delivery models and societal shifts in folkways continue to challenge the healthcare industry to maintain optimal professional practices. According to Aunger et al., aberrant behaviors are often potentiated or precipitated by organizational factors such as culture, hierarchy, harmful processes, and intra-professional and interprofessional conflict.[20] Other authors have also cited interprofessional and intra-professional conflict as sources of communication disruption affecting the work milieu.[16,21] Multiple factors have been described as precursors or instigators of unprofessional behavior such as cynicism and exhaustion because of burnout, minimal time availability for institutional and compliance mandates, skill deficiencies, and physiological and psychological stressors, i.e. financial, family and impairment due to substance abuse, amongst others.[17,21] Other drivers may be the physical environment experienced in higher stress subspecialties, i.e. critical care, emergency medicine and surgery.[17]

In this work we examine the status of professional behavior amongst students and practicing healthcare professionals in all domains of the industry. A definition of professionalism and unprofessionalism supports the discussion. Although the definition of professionalism can be complicated by subjectivity and context, key facets of professional conduct include respect, compassion, integrity, responsiveness, altruism, accountability, commitment to excellence, sound ethics and sensitivity to diversity. (p. 134).[13] Other sources acknowledge additional professional responsibilities including a commitment to competence, honesty, patient confidentiality, improving quality and access to care.[4,13,22] Unprofessional behaviors have been characterized as rudeness, disrespect, dismissiveness, microaggressions, harassment and bullying[14,15,20] along with subtle nuances such as, "eye rolling", "walking away", avoidance and lack of participation (p.6).[23] Policies have been adopted nationwide by multiple healthcare organizations and are relevant to personnel throughout all healthcare settings.[4,8,13,24,25]

We believe a deeper pursuit of where professionalism stands in healthcare is relevant. In this pursuit, we seek to understand professionalism amongst students and teachers, managers and executives, as well as clinicians. Disruptions from multiple forces including societal behaviors which are reflected in popular culture, and accommodations to secular change including political and economic influences have likely affected how professional or unprofessional behaviors are exercised and interpreted. These disruptors were magnified with the challenges of the Covid-19 Pandemic and the secular response worldwide. With this exploration we intend to develop a reasonable explanation for a noticeable degradation in professionalism and offer guidance as to how we may avert further drift.

Unfortunately, studies that directly correlate professional conduct to actual reported adverse outcomes are scarce, though a few have been reported.[14,26] Institutional legal exposure due to claims of medical malpractice may be one reason why to date studies which can serve as scientific evidence are difficult to discover in the published literature, but as large databanks become retrievable, we may uncover the full scope of professional infractions that lead to adverse outcomes. Yet, enough testimony exists to posit that collectively medical, allied health and technical professionals espouse that unprofessional behavior can and does create the environment for errors and the predisposition for a harmful atmosphere. Fur-

ther, the compromise to patient safety is not the only fear, as unprofessional behavior threatens the well-being of all actors.[9, 15, 23, 27] Our literature review failed to unveil a published trajectory of the professional lapses longitudinally that we believe is occurring. Scientific methods to demonstrate this degradation would be complex to develop. Our attempt is to uncover a lesser explored underpinning for the sources of unprofessional conduct to discover how we might mitigate influences affecting healthcare. We assert there are ubiquitous forces at work that contribute to an insidious behavior change, which relaxes what was once deemed professional behavior. We also address the often-unreported indiscretions experienced in training milieus, though these are not recent phenomena.

2. Literature review

The authors sought to better understand what factors contribute to what is seemingly an erosion of professional behavior. We explored the literature to inform educators and practitioners alike of what may be drivers to witnessed unprofessional behaviors. We examined drivers such as the influence of social factors which today has their epicenter in virtual spaces, the impact of hidden curriculum to which learners are exposed, and the ever-increasing commercialization of healthcare.

The results of the literature search for publications and links between popular culture and professionalism were sparse. However, the literature was replete with publications about medical, nursing, dental, pharmacy, and other healthcare professions, and their use or misuse of social media platforms. The research did not directly correlate professional behavior with current social behaviors. Instead, we examined the literature about professional behavior on social media platforms as a proxy for the influence of popular culture. On another front, the hidden curriculum, well known amongst the practice professions, was revisited to gauge its influence. Finally, the inadvertent effects of the commercialization of healthcare on professionalism were examined, defined as: the set of practices, beliefs, and objects that embody the most broadly shared meanings of a social system.[28] It is embedded in secular culture, with a growing significance to the healthcare industry. We used the commodification of healthcare to serve as a second proxy for a profound secular change and its effects on behavior.

2.1 Social media

Infused into all our lives is the exponential rise in technology that has profoundly influenced popular culture as well as individual behavior. Mass media and the use of the internet through X (formerly Twitter), Facebook, Instagram, Wikis, Blogs and Podcasts, etc. can indirectly ratify casual communication which may then be conflated to describe complicated circumstances with legitimacy, true or not. Personal information is posted by others about others. Social media and all its platforms have created another dimension of professionalism sometimes referred to as digital professionalism or e-professionalism. Or has it?

Several studies indicated that the manifestations of professional attitudes and behaviors are not represented well on social media platforms.[29, 30] According to Guraya et al., professional infractions abound in the digital environment and are also elevated to egregious behavior such as unauthorized postings of patient health information, pictures, patient doctor communication blogs and images with clear patient identification.[29] In a systematic review these authors included 44 articles mostly from the US, which represented the disciplines of medicine, nursing, dentistry, pharmacy, and physiotherapy. Articles revealed a rapid rise in the usage of social media by health care professionals and students with an erosion of professional integrity. They identified an upsurge in the awareness of professional identity but at the same time a rise in unprofessional behaviors. According to the authors, concurrent with the rise and the usage of social media amongst medical educators, physicians and students, content is utilized regardless of its accuracy and authenticity. In one study, the authors reported that events such as posting identifiable patients' demographics, a radiological image, and inappropriate pictures of intoxicated colleagues were observed.

In a subsequent publication, Guraya, et al. asserted multiple reports of the gross violation of professional behaviors in the digital world by medical and dental students, further validating prior findings.[30] These included unauthorized postings of patients' pictures, podcasts detailing physician-patient communication, blogs with obvious patient identification, and healthcare professionals (HCP's) partying and drinking with inappropriate attire. The authors reported that these HCP parties were mostly driven by the commercial agenda of pharmaceutical companies. Their interest in these "abundance of lapses" was to develop remedial action to rescue the prescribed code of conduct (p. 2).[30] Imran and Jawald reporting on digital professionalism, claim professionalism wanes creating lapses that have led to disciplinary action including dismissal. Users are significantly less vigilant and struggle to find the right balance between online professional and personal presence, an imbalance that jeopardizes their careers.[31]

Interestingly, the students represented in several studies are presumably digital natives.[29–31] Yet, were students unaware

that social media is visible to a wide audience and patient confidentiality prevails in every setting? Given the ubiquitous forces of the internet and the behavior replication of native digital users, the challenge is not confined to healthcare professionals in the United States, but inappropriate use of digital media has surfaced as a universal issue with studies published by the Netherlands,[32] Croatia,[33] China,[34] Lebanon,[35] Italy,[36] Ireland,[37] and others. The universal nature is pertinent since professionals can easily cross the globe to further their careers.[29] More importantly, the studies confirm behaviors are pervasive and transcend geography with the potential to exacerbate unprofessionalism by worldwide bad examples.

2.2 Informal and hidden curriculum

Hafferty defined three components of the medical training curriculum: formal, informal, and hidden curriculum.[38] Formal curriculum is intended and validated. Informal curriculum is unscripted and learned through the relationships between faculty and students and reflects what students come to know as a result of interactions in elevators, hallways, and lounges. This learning underscores the importance of role models or mentors. Hidden curricula are influences that are disseminated through an organization's customs, rituals, and "taken-for-granted aspects of what goes on in the life-space" of medical education (p. 404).[38] Professionalism or the lack of it is often absorbed by students through tacit learning: observations, the interactions of peers and colleagues, observed patient encounters, and the procedural protocols demonstrated by teachers or assigned preceptors. While Hafferty described informal curricula as an element of medical training, it is reasonable to assume all healthcare professionals are subject to similar influence. Organizations intending to curate a culture of professionalism must understand the informal and hidden curriculum present within their organization.

Murphy et al. described three methods of learning professionalism: the "traditional apprenticeship," "role modeling" and importantly the hidden curriculum (p. 10).[39] An apprenticeship enables a learner to gain knowledge and develop skills, particularly technical skills. In addition, Murphy et al contend that "attitudes, behaviors, language, and values including professional values are learned through formal and informal observation" (p. 10).[39] This exemplifies a traditional clinical training approach practiced in many disciplines at some point in training. Like the apprentice instructor, role models can provide informal teaching that can enhance professional development by demonstrating positive behaviors. Unfortunately, negative behaviors can also be demonstrated and subsequently emulated by learners. When a breach in professional behavior is demonstrated by a role model, a positive teachable moment can still occur if the role model discusses how the situation could have been handled by adhering to higher standards and values. If the importance of professionalism is not explicitly addressed, learners may choose behaviors that they have witnessed as expediting workflows to complete patient care tasks.[39]

Evidence of the influence informal and hidden curriculum has over learners is demonstrated in work conducted by Hendelman and Byszewski.[40] They deployed an electronically distributed survey to quantify and categorize lapses in professionalism observed by medical students. Thirty-six percent of students experienced exemplary demonstration of professionalism while 64% had witnessed lapses in professional conduct. Lapses in professionalism were found to be committed by multiple parties including fellow students, faculty, and administrative staff. These lapses were seen with increasing frequency as students progressed through training with more lapses being experienced during the later clerkship years. The most common professional lapse reported was a display of arrogance. Other unprofessional behaviors documented were impairment (due to substances or alcohol), cultural or religious insensitivity, and breach of confidentiality. The authors concluded that role modeling of professionalism is a key component in the development of professional identity. They recommended that institutions develop a formal professionalism curriculum which can counter the impact of informal unprofessional learning.[40]

Foster and Roberts provided an "interpretivism" perspective in their investigation of the profound nature of faculty as positive or negative role models. The interpretive premise is that "individuals construct meaning differently, depending on context, place and other circumstances" (p.2).[41] The authors obtained Personal Interview Narratives from doctors, post ten years of training, representing seven medical and seven surgical specialties. Study participants recalled memories from their time as medical students, interns, and junior medical officers. Their memories captured images of both villains and heroes. The attributes leading to the recollection that a clinical educator or supervisor was heroic, was their caring demeanor towards patients and trainees. When villainous behavior was experienced, it precipitated a significant amount of emotional residual within students and residents. Anger often persisted about the villain with a feeling of self-disappointment for not confronting the perpetrator. Participants conveyed distress with the perception that the health care system did not address the villain's behavior. However, there was evidence that as these individuals matured, developing their unique professional identity, they reconciled their experience with an understanding that healthcare is complex

and often ambiguous. The dissonance and the disappointment in oneself created lasting memories that evolved as they realized both villains and heroes were amongst their mentors. Importantly, this study demonstrated influence predominantly created in everyday routine encounters and that a theme of caring for both patients and for students was critical to invoke the compassion required for productive role modeling.

Yahyavi et al. investigated hidden curriculum and professionalism using structured individual interviews and group interviews of psychiatric residents working in a Psychiatric Emergency Department (ED).[42] The institution in which the study was performed had committed to high standards of professionalism, which was a priority to leaders within the organization. In their work, the authors found the hidden curriculum varied significantly from the formal curriculum. The investigators discovered residents were significantly influenced by the subliminal messages of the hidden curriculum. Residents acknowledged that in practice, professionalism, including a commitment to quality, patient autonomy, and the provision of empathy, were in fact not the priorities. Rather, keeping the ED "calm" and "orderly" was what the social environment of the ED and organizational culture prioritized via a hidden curriculum (p. 3).[42] The interviews uncovered multiple breaches of confidentiality as well as alleged incidences of the use of physical restraint as punishment versus a therapeutic intervention. Additionally, higher level residents and not faculty (attending) physicians were predominantly in a supervisory role in this ED, and these senior residents did not demonstrate the maturity and experience required to provide ideal oversight. The authors concluded that the hidden curriculum could undermine patient safety. Suggestions to mitigate a negative hidden agenda included conducting guided sessions to discuss the ethics of clinical decision making and underscored the need for direct involvement of faculty to guide practice and provide mentorship with ethical challenges.

Professional lapses by staff, peers, or faculty contribute to the informal or hidden curriculum. The experience can be normalized by learners. Kelly and Mullan described resources and methods for teaching professionalism in a radiology training program, explicitly noting the need to align values while balancing the undue influence of a negative hidden curriculum that may be present.[43] Role modeling in addition to formal instruction in groups discussions, by storytelling, and peer-assisted learning may be valuable tactics. Progressive methods for teaching the topic are warranted as professionalism does not lend itself to a traditional didactic approach. The authors commented that the challenge of teaching professionalism to learners without life or practice experience can influence learners to deem it irrelevant. Additionally, young adult trainees often have their moral character "established" by this stage of their learning, making attempts to reshape personality and ethical beliefs difficult. Despite these challenges, authors concluded faculty must commit to progressive teaching methodologies along with an ongoing assessment of professional virtues for students. Attaining competency in these virtues can minimize the effect of negative messages communicated in hidden curriculum.[43]

Torralba et al., using a case-based format, advocated for creating psychological safety in the clinical learning environment as an effective way to balance hidden curriculum that promotes unprofessional behavior during medical training.[44] The authors suggested that psychological safety is not a concept well known to clinical educators but is crucial to overcome the inherent uncertainty and ambiguity while treating patients within the hierarchical organizational structure of medicine. Psychological safety exists when members of a team can express themselves freely without fear of humiliation, particularly in the setting of clinical learning which the authors described as a "cognitive apprenticeship" (p. 668).[44] A cognitive apprenticeship describes the progression of a learner to competency, based on development of an internal thought process rather than a tangible product of labor. Hidden curriculum is an important vehicle to convey practice norms and culture to trainees in a cognitive apprenticeship. The authors imparted that students and residents alike are motivated for self-protection while concurrently attempting to impress evaluators and to establish professional credibility. They used Amy Edmondson's work on psychological safety and its function within teams as a backdrop.[45] Edmondson describes psychological safety as the willingness to speak up without fear of embarrassment, ridicule or shame. In this context, hidden curriculum is a socialization process whereby daily norms are transmitted, and the learner often assumes these norms. Negative consequences of dismissive and aggressive communication by teachers can disengage learning and can cause emotional debilitation. A positive influence through examples of empathy, perseverance, resilience, and psychological safety can elicit desirable professional shaping. Creating such a proactive learning environment through psychological safety empowers learners to admit mistakes, report errors, and to ask questions. This translates to a degree of professionalism which can directly influence safe clinical practices.

Finally, it is understood that the effects of a hidden curriculum are long lasting and if they run afoul can be detrimental. Robertson and Long detailed how bullying and shaming have been used as training tools in the clinical setting. In medical training the use of one tool is "pimping" – a process by

which senior medical personnel asks challenging questions of a junior physician or student in a disrespectful way during rounds attended by multiple team members (p.332).[46] This hidden curriculum was promulgated within the hierarchical and cyclic nature of training with faculty, senior trainees, and junior trainees employing these teaching methods on those of a lower status, ostensibly to support professional growth. This shaming and bullying can be dehumanizing, discouraging learner engagement. Even more concerning is the association of injury due to shame and the associated development of mental health disorders including depression with suicidality. The solution, in part, to eliminate bullying and shaming, is acknowledging the existence of these ineffective tools and normalizing empathy among leaders and teachers.[46] Empathy encompasses non-judgement and understanding of another's feelings and thereby comprises support. This approach provides a safer environment with which to learn and can lead to constructive discussion of errors. An empathic and thus supportive environment appears to be the path to a healthier clinician and a safer and more professional healthcare environment. However, hidden curricula are continuously impacted by external forces that learners assimilate often before educators can redirect undesirable behavior.

2.3 The commercialization of healthcare

The commercialization and or the commodification of healthcare may be the most influential to deconstruct professionalism, relabel it, repackage it, and establish a new normal. Some of the transformations are unanticipated, but others are predictable as business strategies prevail over what was once professional practice. The most significant effect of healthcare's business trajectories, its leadership, its legislation and how we interact with one another is changing how we think. It permeates every healthcare professional role: provider, faculty, student, patient/client, academic, and administrator. Some authors attribute the Medicare legislation in 1965 to a watershed event.[47,48] Following the advent of Medicare, taxpayers saw Medicare expenditures rise exponentially some 20 years later. Despite medical necessity provisions for services, fee for service Medicare did not successfully abate program costs. Even with the inception of Diagnoses Related Groups (DRG's) in 1983, managed care, and capitation through Health Maintenance Organizations, Medicare costs continued to escalate. DRGs minimized acute care facilities' ability to maintain profitability as payments were capped as a fixed prospective payment with some exceptions. This led acute hospitals to affiliate with skilled nursing facilities, home health agencies and durable medical equipment (DME) companies to mitigate acute care costs and create new revenue sources.

In 2008 healthcare expenditures totaled somewhere between $2.1 and $2.3 trillion. US health care spending grew to reach $4.3 trillion in 2021 with a GDP contribution at 18.3%.[49] Two examples of commercialization of healthcare through Medicare legislation are Hospice programs and Dialysis Centers. The Hospice movement began as a small effort to reframe dying in a compassionate, less painful experience where the psychosocial condition of the patient and the patient's family is integrated in a holistic approach to terminal illness. In its early years, hospice care was provided by a not-for-profit community-based model, often supported by volunteers. It was financed under the Medicare program in 1982 at a per diem rate for patients diagnosed as terminally ill, with classifications of care and rate payments based on services required. Shortly thereafter, profit-making Hospice entities emerged. Not surprisingly, Medicare per diem rates for hospice care increased through the 1990s. From 2001 to 2008 the for-profit Hospice industry grew 128%.[50] A profit mandate is inevitable in a for profit business. Professionals assigned to care are susceptible to leaning into the demands of a commercialized for-profit service.[51] Despite this reality, there were no overt reports of an adverse impact on the quality of care in the publications reviewed, but there were longer lengths of stay.[50]

The second profit-making enterprise that continues to represent privatization with government funds is Dialysis Centers. After CMS covered dialysis treatment under Medicare in 1972, for-profit chains grew exponentially with 75% of dialysis services provided by private for-profit facilities by 2002.[50] Thamer et al. reported on the use of epoetin alfa therapy in 2004, a drug that by 1989 significantly improved the anemic status of patients with end stage renal disease (ESRD).[52] Their findings indicated that epoetin alfa therapy was associated with different dosing patterns by for-profit chain facilities, which used larger dose adjustments and targeted higher hematocrit levels. These dosages and targets departed from the clinical guidelines, which were in place in 2004. Notably then, epoetin alfa therapy comprised 11% of all ESRD costs with therapy for dialysis-related anemia representing the single largest Medicare drug expenditure.[52]

On speculation, the professional tolerance for both the Hospice and Dialysis Centers' examples, might be the silent consensus that these services were and are essential - hospice for its deep recognition of the painful deaths of patients that could be addressed differently and better, and dialysis for ESRD that was and is clearly lifesaving without transplantation. Perhaps the second reason might be that in both instances, then and now, there is still a belief that a reputable and trained core team is at work.

Universities also assumed a role in healthcare commercialization. To many the passage of the Bayh-Dole Act paved the way for widespread university technology.[53] The Act passed in 1980 as a hedge to remain internationally competitive. The Act allowed the rights for intellectual property to transfer from federally funded research to the university. A university technology transfer office (TTO) serves as a mechanism to commercialize university scientific research and to facilitate revenue streams for the university. The Act has been hailed as one of the most significant successes by precipitating gains through research. While there are other paths for commercialization, the establishment of a TTO resulted in many more patents resulting in licensure and adding billions to the economy.[53] It also opened the door to entrepreneurship at the university level which in some cases opened the door to novel technology transfer approaches.[54]

Funk compared the scientific or research activities conducted by universities to the rapid-cycle improvement or enhancement strategy employed by technology firms with regards to innovation and product development.[55] Universities employ a linear model which trusts science, or evidence based iterative advancement, where each step relies on concepts "proven" to be effective by virtue of rigorous standards of investigation and review. This contrasts with profit driven entities which value rapid migration of new or improved products to market. The process is known as the "Silicon Valley" method and allows firms to rapidly develop and deploy increased internet speeds, integrated circuits, and smartphones to name just a few products where value can be returned expeditiously (Funk, p.33).[55] Thus far, for-profit driven organizations surpass a university-based science development model, which in contrast is slow and unfavorable from a business perspective as products lose value over time. Funk asserted ecommerce firms rarely applied for a patent, few academic papers are read, and the patents are not relevant for most businesses.[61] The critical point is that the incremental improvements vis a vis the Silicon Valley approach enabled iPhones and app stores to become lucrative, paving the way for health care driven apps that are easily available now.

The Internet has been leveraged on a variety of fronts, but a worrisome power has been the prolific medical marketing to consumers, often through apps. Beyond the misinformation exchanged through platforms such as Facebook and or app specific social networks, there is a global wellness industry that was valued at $4.9 trillion in 2019.[56] The global "mHealth market" size is expected to reach USD 293.29 billion by 2026, exhibiting a compound annual growth rate of 29.1% during the forecast period.[57]

Even when commercially developed apps may be effective such as their application to behavioral health when face to face meetings may not be required, the apps are problematic. Commercially based apps often have not run the course of evidence based clinical guidelines or employed health scientists in the developmental process.[58] There are also the inherent security risks as apps were not developed for pinnacle exchanges between provider and patient.

One example of consumer exposure to potential hazards through the Internet was reported by Hesse-Biber et al.[59] The authors claimed that several tools to assess genetic predisposition rates for hereditary breast cancer risk were developed mostly for professionals. The U.S. Preventive Services Task Force recommended that women who scored high on the BRCA predisposition screening tool should receive genetic counseling, and if recommended, undergo BRCA Genetic testing.[60] These risk assessments have now moved into the public domain with access through the Internet. The authors analyzed and differentiated between decision making testing websites and risk assessment screens. Their analyses were built from a template that coded these tools for: urging toward action, fear mongering, and degree of transparency, along with validating what the tool was measuring, how the tool was created and for what use. Their summary indicated that there appears to be a connection between online instruments and a degree of prompting a person's actions such as screening and genetic testing. In some cases, preventive procedures and these instruments have an inherent conflict of interest between patient advocacy and corporate ties.[59]

Grundy et al. did a content analysis on healthcare-related apps found in the USA, Canada and Australia.[61] Digital platforms are used directly for soliciting information while delivering promotional messaging that are often not subject to regulatory mandates and yet represent privacy and security risks to users. They reviewed 24 apps of which 42% provided mobile services related to medication management, reminders, or prescription refills. Another 58% provided drug or medical information on a mobile platform with symptom checkers and/or prescribing support. According to the authors, developers claim unbiased and impartial sources of drug information; but the sources are not cited. The developers describe sites collecting information through user registration or app usage including name, e-mail address, clinical specialty (if a provider), diagnosis, medication list or symptoms. Many of the developers collected third party analytics that captured 'IP' address location or unique mobile device identifiers. Developers in the studies' sample commercialized App user data in the form of selling reports about user behavior. Grundy et al. posited this is an example of "digital patient experience economy" that permits commercializing data for targeted advertising or for selling data

to third parties (p. 2840).[61]

Through decades the interrelationship and interdependency of the pharmaceutical and device industries with medical practices, hospitals, government, and public-private enterprise is undeniable, along with the spinoffs of private businesses, incentives and other remunerations undisclosed. Beyond these organizations, Beaulieu and Lehoux presented how health technology organizations seize entrepreneurial opportunities to particularly leverage the healthcare system.[62] Along with the healthcare Internet players already described, yet other innovators or entrepreneurs are patients. Cennamo et al. depicted multi-sided platforms that can empower patients as innovators and these platforms enable development and diffusion by orchestrating the networks that historically create bottlenecks such as the highly regulated healthcare sector.[63] According to the authors, "Patient Innovation" is a platform that moves the product through the value chain of actors to create a pathway for innovation by the patient community (p.49).[63] Yet, the scenarios represented by the publications of Beaulieu and Lehoux and Cennamo et al. are reminiscent of a sophisticated marketing tutorial, couched in intangible explanations and require more hands-on exposure to conceive the processes by which products emerge through scientifically and regulatory sound channels, established with ethical principles to promote to a healthcare audience.

The Internet has catapulted commodification of healthcare at an accelerated pace. Required permissions consumer access and collected information are blurred as technology or e-commerce has seemingly dodged the same compliance provisions demanded from healthcare organizations licensed for care and services.[58] The tolerance for actors and industries has emerged which did not have a former role in healthcare, nor the credentials believed by many to qualify to pass through the healthcare entry door. Secular mechanisms have shaped culture that govern behavior and represent overt and covert tactics that propagate unprofessionalism as if these ubiquitous forces mandate acceptance.

3. Discussion

Like other industries, healthcare has evolved, deconstructed and has been reinvented, with subsequent metamorphosis. But doesn't healthcare answer a different calling? The principal reason for professionalism is to advocate for, and protect, the patients we serve. For instance, speaking up is about raising concerns on behalf of patient safety and care quality.[64] The failure to speak up is not limited to specific health care professionals or roles within the industry. While a key barrier to speaking up was reported by Echegaray et al. to be leadership (i.e., fear of retaliation, lack of management support and budgetary concerns), there were also personal reasons reported such as fear that others will perceive speaking up as negative, fear of being wrong and fear of creating conflict, amongst others.[64] However, professionalism is the prerequisite that determines behavior in any clinical context and the risks have always been ever present. Therefore, the requisite emphasis must be on professionalism during training and post-graduation to minimize acts or inactions that diminish care and safety.

To further support advocacy for care safety and quality, and their inextricable links to professionalism, in 2016, Makary and Daniel reviewed the scientific literature to better understand the likely contribution of medical error on US mortality rates, according to the causes listed by the CDC.[65] Using methods of prior researchers and data from the US Department of Health and Human Services' health records of hospital inpatients, they applied the US hospital admissions in 2013 to estimate the number of deaths per year. Extrapolating from prior data, they calculated approximately 400,000 deaths a year with a mean rate of 251,454 per year, though they state the number is likely to be an underestimate. Using the CDC rankings, the number would rank medical error as the third most common cause of death.[65] How do we better intercede to mitigate potential harm, reduce morbidity and mortality rates? Report the error immediately. If healthcare workers don't act because they believe someone else should report, or it avoids incrimination or the priority is to retain their job; and therefore, professionalism does not prevail, patient harm is inevitable.[66]

Marcum asserted that in recognition of the evolving healthcare networks, physicians must perceive their position in the network differently.[67] They are another node in the maze of providers and services with a loss of their prior centrality. Marcum suggested, to define professionalism within the network and to direct due attention to the threats of healthcare's commercialization, physicians should cooperate, redefine, and re-situate their role within the network. Marcum does an extraordinary job reciting the contributions of Flexner, Peabody and Pellegrino and reminds us of the philosophical grounding of medicine's role. However, we argue here that the commercialized network has become a runaway train, and physicians remain the most qualified at least to co-conduct the train. Albeit, there is a need to supplement physician training through post-graduation to broaden their understanding of the commercialized environment within which they exercise professionalism. In this way, the dire warnings concerning healthcare's commercialization may be averted.[68]

Teaching and maintaining professionalism have been a per-

sistent issue in all domains of healthcare for decades. Cruess and Cruess (1997) suggested that the degradation of professionalism in the eye of the lay public is a "crisis" (p. 942).[2] Cruess et al. provided an overview regarding the teaching of professionalism to Healthcare Professionals.[69] The authors support continued "explicit teaching" of professionalism but also described the need for learners to experience "identity formation" for metamorphosis from learner to practitioner. (p.1446)[69] This identity formation should be socialized throughout the medical environment to achieve the highest possible quality and safety in the industry.

A less obvious influence on professionalism, but no less important, are the changes in the format of education throughout all university systems, affecting faculty and all healthcare students alike. Online learning grew as institutions addressed student learning convenience and use of the format catapulted during Pandemic heights. Online enrollment remains attractive. The disappearance of classroom formality and decorum diminishes communities of inquiry. Professional development is at risk with the informal student behaviors often observed online without the institutional glue afforded by the bricks and mortar.[70] In addition, the exposure time to influence through role modeling and positive elements of informal curriculum is reduced if the online setting is permitted to erode with students who are "missing in action", technically attending but aren't present.

Universities facing enrollment declines have also created a juxtaposition between faculty, the University, and the student population. In the wake of preserving students' sense of self, embracing inclusivity, and shielding students who may have been marginalized by a variety circumstances, U.S. university systems have become more student-centric, moving away from academic performance as a gauge but alternatively, finding means to attract and retain students. Academic institutions too have become highly commercialized with commodification. An unwritten directive is to accommodate students to get coursework done and coddle them through academic rigor. While the collocation of student and faculty have been influenced by the entitlement phenomenon Singleton-Jackson et al.[71] to prepare students to work in the healthcare industry, faculty have an added responsibility to ready them to respond to the demands of the workplace, fraught with physical, intellectual, emotional, and professional challenges.

McFarland et al. teaching professionalism to nuclear medical technology students, proclaim earlier cohorts of students readily mirrored the desirable behavior of role models in health professions and the authors do not observe the same behavior nearly as much among the students currently entering.[72] They reported that behaving professionally is not foremost in the minds of the students with observed new negative trends about student time management and dependability. They add that discussing emotional intelligence and the importance of developing grit and perseverance, and to provide students an opportunity to self-reflect on these skills, are strategies to improve early signs of student unprofessionalism. Common signs of student difficulties early in the program are unwillingness to receive criticism and failure to acknowledge errors.

Our first responsibility as healthcare industry educators is a promise to uphold professional standards. We are the gatekeepers. Admittedly, how professionalism develops is internalized and how it is sustained is complex, but we must be attentive to what we can manage. The student selection process may be the first obligation to screen with the best available tools, beyond grade point average (GPA). McLachlan and Robertson theorized about the presence of a common personality factor taken from a 'Five Factor' (Openness to new experience, Conscientiousness, Agreeableness, Extraversion, and Neuroticism) personality model.[73] They demonstrated that conscientiousness as measured by a conscientiousness index (CI) is a key factor to predict future behavior in future medical practice. When the CI is extended to postgraduate medical students and other healthcare professions, it co-distributes with independent staff and peer ratings of professionalism. The CI might be used to monitor students and guide them to professionalism early on in their academic tenures, if not at admission. But selection remains an even more significant imperative as students seek "jobs," and not vocational callings. The healthcare industry is now well-known for its job security haven. When students view their future work as a "job" rather than a vocation, there is a concern that such individuals may lead a clinician to believe their work is simply done at the end of their shift rather than when safe patient care, is satisfied (p. 59).[73] Secondly, during students' academic tenure, we must continue to screen, assess, help, and act upon the professional infractions and do so with progressive discipline for egregious breaches. Finally, we cannot fall prey to the failure to fail syndrome: "observers (educators) 'pass' candidates who they really believe should fail", due to worries about the student, self-doubt, compliance with colleagues or institutional policy, and fear of accusations of bias amongst others (p. 63).[73] To avoid these scrutinizing obligations, is to supplant patients, and instead, place students ahead of the patients and clients for whom we educate to serve.

Bhardwaj (2022) justifiably espoused the Vanderbilt Center for Patient and Professional Advocacy as one framework that embraces professionalism by preventive measures that iden-

tify clinicians at risk for developing unprofessional behaviors with well-outlined iterative interventions.[17] Bhardwaj included an action plan for nurturing an institutional culture of medical professionalism. However, we contend that secular forces are alarming and are unrecognized or understated in much of the literature that addresses how we achieve professionalism that is sustainable across generations.

The teaching of professionalism has been complicated by several other factors in the healthcare industry not the least of which was the Covid-19 public health emergency which has significantly disrupted an already complex and rapidly evolving healthcare industry. How will this disruption impact professionalism throughout the domains of healthcare from administrative leadership to the working professionals at the bedside? And how do the latest generations of learners such as Millennials who were born between 1981and 1996 and Gen Z individuals who were born between 1997 and 2012, relate to traditional concepts of becoming a professional?[74] Shorey described evidence that each generation possesses unique characteristics which impact their learning needs.[74]

The history revealed may seem irrelevant in a 2024 world, but importantly and in both dramatic and insidious ways, the reshaping of professionalism we encounter today began forty years ago. Despite this forewarning, many of us are still stunned by what has followed. Professional curricula are present. Healthcare professional programs reside in universities and academic centers. Not only is commercialization evident on these campuses that shapes professional behavior, but the Internet's powers also generate a formidable obstacle to sustaining professional behaviors. The witnessed hidden curriculum by students, faculty and other healthcare professionals is well documented. As the literature supports, education is not the issue, compliance and commitment are. However, the focus may be misdirected at students, instead of the role modeling required of faculty and other professionals as a monitored requirement of their jobs. Anecdotally, as experienced through multiple internship programs, employers are becoming increasingly concerned about how to preserve professionalism amongst their current and incoming employees, despite integrity policies. Partnerships with employers and academic institutions must be forged with memoranda of understanding to solidify behavior expectations and renew the empowerment of professionalism.

Changes to the delivery model will occur in all healthcare domains from traditional academic settings to the start-up segment supported by venture capital. In these novel healthcare locations, from on-line platforms to the pop-up or permanent clinic space supported by pharma or giant retailers, will professionalism be an expectation, and will it matter?

4. Conclusion

The literature review and the confluence we addressed obliges us to embrace professionalism with compelling intensity. We applaud those who have come before us with far more eloquent writings, defenses and appeals to reinstate professionalism and its tenets as the most quintessential creed for health care practitioners and administrators. American Healthcare, and more broadly for organized healthcare worldwide, a call to action must be issued to assure the tenets of professionalism are advocated for and evolve to maintain relevance in the complex and shifting foundations of training and practice.

A paradox is before us. Healthcare policies, institutional rules, and organizational charters guide professional behavior now more than ever before, yet is unprofessional behavior more pervasive than ever before? We differentiate secular culture as an influence represented by economic actors with the commodification of the healthcare industry and the unrestrained and ubiquitous influence of social media and the Internet. In the social media literature described, publications called for guidelines for e-professionalism. But would these guidelines face the same fate as the powerful statements, charters, and protocols crafted and avowed by multiple academic and professional institutions to communicate professional expectations already? There is evidence that undesirable behaviors are committed, inconsistent with professional practice.

Academic institutions may be the first barrier to professionalism, though there are multiple exemplars that describe professional curricula. We call for vigilance, monitoring and action on selection, admission and during the tenure of students' academic lives. However, the hidden curriculum may be a far more significant influence on how professionalism is transmitted and manifested. Though the hidden curriculum is characterized as a principal educator, and there are positive examples, the literature is far more condemning of behaviors by faculty and mentors who misbehave, exemplify poor images of professionalism, and create indelible marks in the minds of students to whom they are entrusted. Ultimately, students want the professionalism they imagined before they entered their academic programs.

We must forge a partnership with industry that bolsters our collective stance on professionalism and makes compliance clear for both students and employees. We make pleas to circumvent the adverse and perverse incentives to de-professionalism by engaging our commitment to professionalism through vital channels of academics, industry, and legislation. The call for action is tantamount to protecting patients and our disciplines for the safety of those for whom

we are entrusted, regardless of the cause, the culture, or the generational behavior differences we might uncover. We believe it is time for a recommitment to professional values and practices throughout the healthcare industry. We call on healthcare educators and clinicians to lead the offensive.

ACKNOWLEDGEMENTS
Not applicable.

AUTHORS CONTRIBUTIONS
Not applicable.

FUNDING
Not applicable.

CONFLICTS OF INTEREST DISCLOSURE
The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

INFORMED CONSENT
Obtained.

ETHICS APPROVAL
The Publication Ethics Committee of the Sciedu Press. The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

PROVENANCE AND PEER REVIEW
Not commissioned; externally double-blind peer reviewed.

DATA AVAILABILITY STATEMENT
The data that support the findings of this study are available on request from the corresponding author.

DATA SHARING STATEMENT
No additional data are available.

REFERENCES

[1] Cruess RL, Cruess SR. Expectations and obligations: Professionalism and medicine's social contract with society. Perspectives in Biology and Medicine. 2008; 51(4): 579-98. PMid:18997360 https://doi.org/10.1353/pbm.0.0045

[2] Cruess R L, Cruess, SR. Teaching medicine as a profession in the service of healing. Academic Medicine. 1997; 72: 941–952. PMid:9387815 https://doi.org/10.1097/00001888-199711000-00009

[3] Institute of Medicine. To err is human: Building a safer health system. Washington, DC: The National Academies Press. 2000. https://doi.org/10.17226/9728

[4] ABIM Foundation, ACP-ASIM Foundation, European Federation of Internal Medicine. Medical professionalism in the new millennium: A physician charter. Annals of Internal Medicine. 2002; 136(3): 243-246. PMid:11827500 https://doi.org/10.7326/0003-4819-136-3-200202050-00012

[5] Papadakis MA, Hodgson CS, Teherani A, et al. Unprofessional behavior in medical school is associated with subsequent disciplinary action by a state medical board. Academic Medicine. 2004; 79: 244-249. (Reprinted from "Unprofessional behavior in medical school is associated with subsequent disciplinary action by a state medical board"), Journal of medical licensure and discipline. 2004; 90(1): 16–23. https://doi.org/10.30770/2572-1852-90.1.16

[6] Papadakis MA, Teherani A, Banach MA, et al. Disciplinary action by medical boards and prior behavior in medical school. New England Journal of Medicine. 2005; 353: 2673–2682. PMid:16371633 https://doi.org/10.1056/NEJMsa052596

[7] Papadakis MA, Arnold GK, Blank LL, et al. Performance during internal medicine residency training and subsequent disciplinary action by state licensing boards. Annals of Internal Medicine. 2008; 148: 869–876. PMid:18519932 https://doi.org/10.7326/0003-4819-148-11-200806030-00009

[8] Accreditation Council for Graduate Medical Education (ACGME) (2022) Competencies: Professionalism. Available from: https://www.acgme.org/globalassets/PDFs/commonguide/IVA5e_EducationalProgram_ACGMECompetencies_Professionalism_Explanation.pdf

[9] Samenow CP, Swiggart W, Spickard Jr A. A CME course aimed at addressing disruptive physician behavior. The Physician Executive. 2008; 34(1): 32-40.

[10] Rosenstein AH, O'Daniel M. Disruptive behavior and clinical outcomes: Perceptions of nurses and physicians. American Journal of Nursing. 2005; 105: 54-64. PMid:15659998 https://doi.org/10.1097/00000446-200501000-00025

[11] Rosenstein AH, O'Daniel M. A survey of the impact of disruptive behaviors and communication defects on patient safety. Joint Commission Journal on Quality and Patient Safety. 2008; 34(8): 464-471. PMid:18714748 https://doi.org/10.1016/S1553-7250(08)34058-6

[12] Vermeir P, Vandijck D, Degroote S, et al. Communication in healthcare: A narrative review of the literature and practical recommendations. International Journal of Clinical Practice. 2015; 69(11): 1257–1267. PMid:26147310 https://doi.org/10.1111/ijcp.12686

[13] Mueller PS. Incorporating professionalism into medical education: The Mayo Clinic experience. Keio Journal of Medicine. 2009; 58(3): 133-143. PMid:19826207 https://doi.org/10.2302/kjm.58.133

[14] Cooper W. Professionalism of Admitting and Consulting Services and Trauma Patient Outcomes. Annals of Surgery. 2022; 275(5). PMid:35185124 https://doi.org/10.1097/SLA.0000000000005416

[15] Dmochowski RR, Cooper WO., Hickson GB. Professionalism, leadership and a pilfered apple. The Joint Commission. 2022; 48: 419-423. PMid:35753995 https://doi.org/10.1016/j.jcjq.2022.05.003

[16] Turner A, Adesina A, MTP., Schmidt RM, et al. Perceptions of Communication Between Emergency Medicine and Internal Medicine physicians. The American Journal of Emergency Medicine. 2022; 56: 310-311. PMid:34602332 https://doi.org/10.1016/j.ajem.2021.08.020

[17] Bhardwaj A. Medical professionalism in the provision of clinical care in healthcare organizations. Journal of Healthcare Leadership. 2022; 14: 183-189. PMid:36320452 https://doi.org/10.2147/JHL.S383069

[18] Urwin R, Pavithra A, McMullan RD, et al. Hospital staff reports of coworker positive and unprofessional behaviours across eight hospitals: Who reports what about whom? BMJ Open Quality. 2023; 12(4). PMid:37963673 https://doi.org/10.1136/bmjoq-2023-002413

[19] Rich A, Medisauskaite A, Henry WW. et al. A theory-based study of doctors' intentions to engage in professional behaviours. BMC Medical Education. 2020; 20(44): 1-10. PMid:32041599 https://doi.org/10.1186/s12909-020-1961-8

[20] Aunger JA, Maben J, Abrams R, et al. Drivers of unprofessional behaviour between staff in acute care hospitals: a realist review. BMC Health Services Research. 2023; 23: 1-22. PMid:38037093 https://doi.org/10.1186/s12913-023-10291-3

[21] Gerlach KE, Phalak KA, Parikh JR The disruptive radiologist, Clinical Imaging. 2022; 87: 5-10. PMid:35447372 https://doi.org/10.1016/j.clinimag.2022.04.002

[22] Frain J. Why clinical professionalism matters. In: Cooper N, Frain A, Frain J (eds), ABC of clinical professionalism, 1st edn. Wiley; 2018. p. 1-8.

[23] Pavithra A, Sunderland N, Callen J, et al. Unprofessional behaviours experienced by hospital staff: qualitative analysis of narrative comments in a longitudinal survey across seven hospitals in Australia. BMC Health Services Research. 2022; 22: 1-15. PMid:35351097 https://doi.org/10.1186/s12913-022-07763-3

[24] American Physical Therapy Association (APTA). 2021. Available from: https://www.apta.org/contentassets/1787b4f8873443df9ceae0656f359457/corevaluesptandptahodp09-21-21-09

[25] Fitzgerald A. Professional identity: A concept analysis. Nursing Forum. 2020; 1-26.

[26] Cooper WO, Spain DA; Guillamondegui O, et al. Association of coworker reports about unprofessional behavior by surgeons with surgical complications in their patients. JAMA Surgery. 2019; 154(9): 828-834. PMid:31215973 https://doi.org/10.1001/jamasurg.2019.1738

[27] Westbrook J, Sunderland N, Atkinson V, et al. Endemic unprofessional behaviour in health care: The mandate for a change in approach. Medical Journal of Australia. 2018; 209: 380. PMid:30376656 https://doi.org/10.5694/mja17.01261

[28] Kidd D. Popular Culture. 2021; Oxford Bibliographies. https://www.oxfordbibliographies.com/display/document/obo-9780199756384/obo-9780199756384-0193.xml

[29] Guraya SS, Guraya SY, Yusoff MSB. Preserving professional identities, behaviors, and values in digital professionalism using social networking sites: A systematic review. BMC Medical Education. 2021; 21: 1–12. PMid:34247617 https://doi.org/10.1186/s12909-021-02802-9

[30] Guraya SS, Yusoff MSB, Rashid-Doubell F, et al. Changing professional behaviors in the digital world using the medical education e-professionalism (MEeP) framework: A mixed methods multicentre study. Frontiers in Medicine. 2022; 9: 1-14. PMid:35425778 https://doi.org/10.3389/fmed.2022.846971

[31] Imran N, Jawaid M. E-Professionalism: challenges of being social in social media in health profession Health Professions Educator Journal. 2021; 4(1): 7-8. https://doi.org/10.53708/hpej.v4i1.1301

[32] Pronk SA, Gorter SL, van Luijk SJ, et al. Perception of social media behaviour among medical students, residents and medical specialists. Perspectives on Medical Education. 2021; 10: 215–221. PMid:33826108 https://doi.org/10.1007/S40037-021-00660-1

[33] Rukavina TV, Viskić J, Poplašen LM, et al. Dangers and benefits of social media on E-Professionalism of health care professionals: Scoping review. Journal of Medical Internet Research. 2021; 23(11): 1-24. PMid:34662284 https://doi.org/10.2196/25770

[34] Wanga Z, Wang S, Zhangc Y, et al. Social media usage and online professionalism among registered nurses: A cross-sectional survey. International Journal of Nursing Studies. 2019; 98: 19-26. PMid:31255853 https://doi.org/10.1016/j.ijnurstu.2019.06.001

[35] Soubra R, Hasan I, Ftouni L, et al. Future healthcare providers and professionalism on social media: A cross-sectional study. BMC Medical Ethics. 2022; 23(4): 1-9. PMid:35057787 https://doi.org/10.1186/s12910-022-00742-7

[36] Smaldone F, Ippolito A, Ruberto M. The shadows know me: Exploring the dark side of social media in the healthcare field. European Management Journal. 2020; 38: 19-32. https://doi.org/10.1016/j.emj.2019.12.001

[37] Marshal M, Niranjan V, Spain E, et al. 'Doctors can't be doctors all of the time': A qualitative study of how general practitioners and medical students negotiate public professional and private personal realms using social media. BMJ Open. 2021; 11: 1-8. PMid:34667001 https://doi.org/10.1136/bmjopen-2020-047991

[38] Hafferty FW. Beyond curriculum reform: Confronting medicine's hidden curriculum. Academic Medicine: Journal of the Association of American Medical Colleges. 1998; 73(4): 403–407. PMid:9580717 https://doi.org/10.1097/00001888-199804000-00013

[39] Murphy S, Greig A, Frain A. Acquiring and developing professional values. In: Cooper N, Frain A, Frain J (eds.) ABC of clinical professionalism. 1st edn., Wiley; 2018. p. 9-15.

[40] Hendelman W, Byszewski A. Formation of medical student professional identity: Categorizing lapses of professionalism, and the learning environment. BMC Medical Education. 2014; 14(139): 1-10. PMid:25004924 https://doi.org/10.1186/1472-6920-14-139

[41] Foster K, Roberts C. The Heroic and the Villainous: A qualitative study characterising the role models that shaped senior doctors' professional identity. BMC Medical Education. 2016; 16(1): 206-47. PMid:27530252 https://doi.org/10.1186/s12909-016-0731-0

[42] Yahyavi ST, Hoobehfekr S, Tabatabaee M. Exploring the hidden curriculum of professionalism and medical ethics in a psychiatry emergency department. Asian Journal of Psychiatry. 2021a; 66: 102885. PMid:34700180 https://doi.org/10.1016/j.ajp.2021.102885

[43] Kelly AM, Mullan PB. Teaching and assessing professionalism in radiology: Resources and scholarly opportunities to contribute to

required expectations. Radiology Health Services Research. 2018; 25(1): 599-609. PMid:29478920 https//doi.org/10.1016/j.acra.2018.01.008

[44] Torralba KD, Jose D, Byrne J. Psychological safety, the hidden curriculum, and ambiguity in medicine. Clinical Rheumatology. 2020; 39: 667-671. PMid:31902031 https://doi.org/10.1007/s10067-019-04889-4

[45] Edmondson A. Psychological safety and learning behavior in work teams. Administrative Science Quarterly. 1999; 44(2): 350. https://doi.org/10.2307/2666999

[46] Robertson JJ, Long B. Medicine's Shame Problem. The Journal of Emergency Medicine. 2019; 57(3): 329–338. PMid:31431319 https://doi.org/10.1016/j.jemermed.2019.06.034

[47] Fleming D, Moss L. Mentoring Profession Part I: The "Deprofession" of Medicine—How and Why. Annals of Behavioral Science and Medical Education: Journal of the Association for Behavioral Sciences and Medical Education. 2011; 17(2): 7–13. https://doi.org/10.1007/BF03355156

[48] Spurgeon D. Commercialization of healthcare in US raises costs. BMJ. 2008; 336: 349-54. https://doi.org/10.1136/bmj.39486.688356.DB

[49] Centers for Medicare and Medicaid Services. National Health Expenditures 2021 Highlights. 2021. Available from: https://www.cms.gov/files/document/highlights.pdf

[50] Perry JE, Stone RC. In the business of dying: Questioning the commercialization of Hospice. Journal of Law, Medicine & Ethics. 2011; 224-234. PMid:21561517 https://doi.org/10.1111/j.1748-720X.2011.00591.x

[51] United States ex rel. Landis v. Hospice Care, LLC, 2010 U.S. Dist. LEXIS 129484 (United States District Court for the District of Kansas, 2010). Available from: https://advance-lexis-com.eu1.proxy.openathens.net/api/permalink/dac7e990-31da-4a53-b57c-5e198c99f785/?context=1516831

[52] Thamer M, Zhang Y, Kaufman J, et al. Dialysis facility ownership and epoetin dosing in patients receiving hemodialysis. Journal of the American Medical Association. 2007; 15: 1667-74. PMid:17440144 https://doi.org/10.1001/jama.297.15.1667

[53] Aldridge T, Audretsch DB. Does policy influence the commercialization route? Evidence from National Institutes of health funded scientists. Research Policy. 2010; 39: 583-588. https://doi.org/10.1016/j.respol.2010.02.005

[54] Davies GH, Roderick S, Huxtable-Thomas L. Social commerce open innovation in healthcare management: An exploration from a novel technology transfer approach. Journal of Strategic Marketing. 2019; 27(4): 356-367. https://doi.org/10.1080/0965254X.2018.1448882

[55] Funk J. What does innovation today tell us about the US economy tomorrow? Issues in Science and Technology. 2017; 29-36.

[56] Global Wellness Institute. Global wellness: Statistics and facts 2023. Available from: https://globalwellnessinstitute.org/press-room/statisticsand-facts/

[57] Fortune Business Insights (2023).Available from: https://www.globenewswire.com/en/news-release/2022/10/18/2536086/0/en/With-29-1-CAGR-mHealth-Market-Size-worth-USD-293-29-Billion-in-2026.html

[58] Arigo D, Jake-Schoffman DE, Wolin K, et al. The history and future of digital health and the field of behavioral medicine. Journal of Behavioral Medicine. 2019; 42: 67–83. PMid:30825090 https://doi.org/10.1007/s10865-018-9966-z

[59] Hesse-Biber S, Flynn B, Farrelly K. The pink underside: The commercialization of medical risk assessment and decision making tools for hereditary breast cancer risk. Qualitative Health Research. 2018; 28(10): 1523-1538. PMid:29642776 https://doi.org/10.1177/1049732318767395

[60] Moyer VA. Risk assessment, genetic counseling, and genetic testing for BRCA-related cancer in women: U.S. Preventive Services Task Force recommendation statement. Annals of Internal Medicine. 2014; 160: 271–281. PMid:24366376 https://doi.org/10.7326/M13-2747

[61] Grundy Q, Chiu K, Bero L. Commercialization of user data by developers of medicine-related apps: A content analysis. Journal of General Internal Medicine. 2019; 34(12): 2833-2841. PMid:31529374 https://doi.org/10.1007/s11606-019-05214-0

[62] Beaulieu M, Lehoux P. The emergence of health technology organizations among institutional health care and economic actors. International Entrepreneurship and Management Journal. 2018; 15: 1115-1151. https://doi.org/10.1007/s11365-018-0551-2

[63] Cennamo C, Oliveira P, Zejnilovic L. Unlocking innovation in healthcare: The case of the patient innovation platform. California Management Review. 2022; 64(4): 47–77. https://doi.org/10.1177/00081256221101657

[64] Echegaray JM, Ottosen MJ, Dancsak T, et al. Barriers to speaking up about patient safety concerns. Journal of Patient Safety. 2020; 16(4): e230-e234. PMid:29112033 https://doi.org/10.1097/PTS.0000000000000334

[65] Makary M, Daniel M. Medical error–the third leading cause of death in the US. BMJ (Clinical Research ed.). 2016; 353: 1-5.

[66] Rodziewicz TL, Houseman B, Hipskind JE. Medical error reduction and prevention. StatPearls [Internet]. StatPearls Publishing. 2022; Available from: https://www.ncbi.nlm.nih.gov/books/NBK499956/

[67] Marcum JA. Professing clinical medicine in an evolving health care network. Theoretical Medicine & Bioethics. 2019; 40(3): 197–215. PMid:31377897 https://doi.org/10.1007/s11017-019-09492-x

[68] Relman AS. Medical professionalism in a commercialized health care market. Journal of the American Medical Association. 2007; 298(22): 2668-2669. PMid:18073363 https://doi.org/10.1001/jama.298.22.2668

[69] Cruess RL, Cruess SR, Boudreau JD, et al. Reframing medical education to support professional identity formation. Academic Medicine: Journal of the Association of American Medical Colleges. 2014; 89(11): 1446–1451. PMid:25054423 https://doi.org/10.1097/ACM.0000000000000427

[70] Harper J, Robinson JB. Teaching from a distance: Challenges in classroom management to promote professionalism. Journal of Business and Educational Leadership. 2022; 12(1): 35-56.

[71] Singleton-Jackson JA, Jackson DL, Reinhardt J. Students as consumers of knowledge: Are they buying what we're selling? Innovative Higher Education. 2010; 35: 343–358. https://doi.org/10.1007/s10755-010-9151-y

[72] McFarland GA, Hoylman RG, Prekeges JL, et al. Teaching professional behavior. Journal of Nuclear Medical Technology. 2021; 48: 317-325. PMid:32518120 https://doi.org/10.2967/jnmt.120.244095

[73] McLachlan JC, Robertson KA. Teaching and assessing professionalism. In: Cooper N, Frain A, Frain J (eds.), ABC of clinical professionalism,1st edn. Wiley; 2018. p. 59-65.

[74] Shorey SA, Chan V, Rajendran P, et al. Learning styles, preferences and needs of generation Z healthcare students: Scoping review. Nurse Education in Practice. 2021; 57: 103247. PMid:34768214 https://doi.org/10.1016/j.nepr.2021.103247