

## REVIEW

# Technologies, Physician's Caring Competency, and Patient Centered Care : A Systematic Review

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**Abstract :** This study aimed to conduct a systematic review to clarify patient understanding, understanding of caring concepts, understanding of technology, competency to express compassion, appropriate involvement in caring, and ethical and moral attitudes and responses toward patients. This systematic review was conducted through an electronic search across PubMed, Google Scholar, MEDLINE, and Science Direct. Authors independently appraised the methodological quality of the studies using the Mixed Method Appraisal Tool. A narrative synthesis approach was used to present these findings. Nine studies met the inclusion criteria and quality appraisal guidelines. Through thematic analysis, four major themes were identified : *Technology and caring competency, Technology and patient-centered care, Empathetic skills, and Caring competency*. This review has shown that patients choose physicians considering their emotions and communicate well with them, empowering them to take responsibility of their own or their loved ones' healthcare. In the age of technological advancement and availability of vast sources of information, it is expected of physicians to adapt to these character priorities while maintaining their sense of humanness, not only focusing on healing modalities, but also to guide, educate, and appropriately empower their patients toward achieving their healthcare goals. *J. Med. Invest.* 70 : 307-316, August, 2023

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## INTRODUCTION

The healthcare environment in which clinicians work and patients live continues to dramatically change due to the recent advancement in medical care and rapid technological development (1). Advanced technologies with quality network services enable individuals to improve healthcare delivery and make it available to more and more people. Telehealth can make health care more effective, organized, and available (2). The growth of Medical 4.0 technologies enhances healthcare to make better and wiser decisions. The use of high-tech IoT devices in smart healthcare improves the quality of the treatment process (3). Patient centered care ideals have permeated in healthcare systems. Additionally, patient centered care has been expanded to encompass a cultural shift in care delivery, beginning with patients' experiences entering a facility (4). Care to patients using ever-evolving technology, patient-centered care that deeply understands the patient is essential (5), and it is vital to conduct healthcare with an understanding of the harmonious relationship between technology and caring (6). If healthcare providers do not recognize and respond to these changes, they will not be able to build a relationship of trust with patients, which may lead to problems and even litigation (7, 8). Alternatively, good patient-centered care improves patient satisfaction and hospital management outcomes (9). However, providing care that is both evidence-based and patient-centered requires organizations to

reflect on their current practices. It is important to recognize that characteristics such as culture, are difficult to change, when striving to deliver care that is both evidence-based and patient centered (10).

Competencies required of physicians (11) include interpersonal skills, patient-centeredness, and protection of rights. It has been reported that it is important to coordinate ongoing care, listen to the patient's voice, and provide sufficient scientifically reliable information in friendly communication using plain language that the patient can understand, and then support the patient's decision-making (12).

Next, a search for "patient care and procedural skills" indicated the need to provide, appropriate, and effective care to patients and their families based on good communication (13). Education and treating patients with compassion were noted (14). Additionally, the importance of "a sincere attitude toward patients" and "constant efforts to improve the quality of care," which are fundamental to caring competence, were also noted (15).

Simply explaining to the patient or understanding of the patient is not sufficient, as it can be one-sided by the physician (16). It is critical the physician tries to enter the patient's world, to see the illness through the patient's eyes (17). No matter how much empathy is intended, it is meaningless if it is not conveyed to the other person, patients' perceptions of their physicians' empathy and caring attitude are of key importance in contributing to patient outcomes in clinical practice (18). Competency can be subdivided into empathic skills, communication skills, and the skills to build up a relationship with a patient based on mutual trust. Empathic skill is the approach by which the physician can elicit the inner world of the patient and get as much information as possible from the patient, while recognizing the patient's problem (19).

This study aims to conduct a systematic review to clarify patient understanding, understanding of caring concepts,

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Data Extraction

Based on the data requirements, the following data were extracted from each article, namely : study aim, design, setting, population/sample, main results, and themes derived. The main characteristics and results of the reviewed papers are shown in Table 2. The results revealed four main themes, which help in coding and arranging data to generate themes. The selected themes were used to group similar findings and present them. The first data extraction was carried out by one reviewer (LB), and it was then discussed with the other reviewers. The review’s themes and its findings were presented and discussed using a narrative synthesis approach.

RESULTS

Search Results

The search strategy yielded a total of 273 records identified from manual searches, PubMed, MEDLINE, Google scholar, and Science Direct. After the selection of potential titles, removal of duplicates and studies not written in English, 114 records remained. These records were further reduced to 46 potential reports after reviewing the abstracts and removing studies that were unrelated to the study’s aims. The relevant reports were extracted and underwent a full text review, after which 37 studies

were excluded. A total of 9 articles underwent data extraction and synthesis of the results.

Characteristics of the reviewed studies

The results are based on 9 studies published between 1998 and 2022. Of the 9 reviewed papers, 7 employed qualitative studies (24-30), and two used quantitative studies (31, 32). The reviewed studies were conducted in different countries, which includes UK, Canada, Hong Kong, Guinea, U.S.A., Iran, Indonesia, Israel, and Italy. The studies employed physicians, patients, nurses, and medical students as participants. Further information about the reviewed studies’ characteristics is provided in Table 2.

Synthesis of the findings

Following the process of thematic analysis, four major themes were identified : 1) Technology and caring competency, 2) Technology and patient-centered care, 3) Empathetic skills, 4) Caring competency.

Technology and Caring Competency

Two studies that showed the theme of technology involvement with a physician’s or physician- in training’s caring competency. Neville *et al.* (24) explored the views of physicians and patients on the use of computer systems during consults, and while both sides believed that modern technology should never be allowed to replace face-to-face interaction during patient consultations,

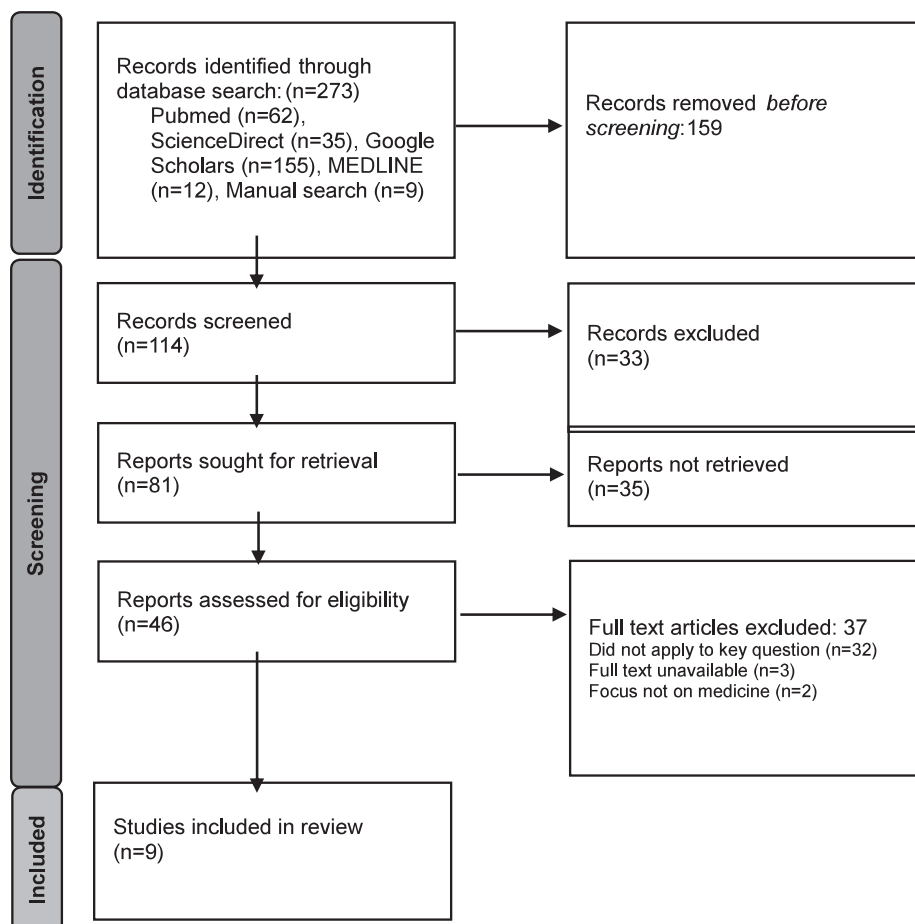


Figure 1. Search flowchart following PRISMA guidelines

Table 2. The main characteristics and findings from the reviewed articles.

Author/Study title Country	Aims	Study design/ methods	Participants/sampling and sample size	Main findings	Relative themes
<b>Neville et al. (24)</b> Patient and healthcare professional views and experiences of computer agent-supported health care <i>U.K</i>	To explore patient and healthcare professional views towards the use of multi-agent computer systems in their general practitioner practice.	Qualitative method  In-depth interviews and analysis of transcriptions  Grounded theory	Five representative healthcare professionals and 11 patients (n = 16)	When rapport and trust between healthcare professionals and patients are established, new technology can be introduced and readily accepted by patients ; Trust of one's patients may be a greater asset than technological skills.	Technology and caring competency
<b>Miller et al. (25)</b> A Narrative Study on the Impact of Information and Communication Technology on the Relationship between Patients and Medical Learners <i>Canada</i>	To explore medical learners' perspectives on Information and Communication Technologies (ICTs) and its impact on the relationship between them and their patients.	Qualitative method (Narrative inquiry)  Semi-structured, in-depth interviews.  Thematic analysis	Five student physicians from a single hospital	ICT implementation improved the quality of care by allowing for rapid access to patient information and facilitating clinical decision-making but may hinder the patient rapport building skills of student physicians.	Technology and caring competency
<b>Leung et al. (26)</b> Perceptions of professional attributes in medicine : a qualitative study in Hong Kong <i>Hong Kong</i>	To explore the perceptions of medical professionalism in Hong Kong.	Qualitative method  Semi structured interviews  Grounded theory was employed for framing and analyzing the interviews.	Thirty-nine participants included six medical faculty preceptors, six hospital residents, four medical interns, eight nurses, eight out-patients, and seven medical students.	The image of a professional physician as a morally ideal person, with virtue ethics, communication skills, attitudes encompassing holistic care, and a balance between patient and family autonomy.	Technology and patient-centered care
<b>De Rosis and Barsanti (32)</b> Patient satisfaction, e-health, and the evolution of the patient-general practitioner relationship : Evidence from an Italian survey <i>Italy</i>	To investigate whether a patient's decision to : 1) use the internet for health- related information or 2) share information found on line with a general practitioner is affected by the previous relationship and experience with general practitioners and the healthcare system.	Quantitative method  Cross-sectional survey using the Likert scale	1793 participants Random sampling	A productive relationship with the family physician and the use of effective empowerment strategies can provide more support for the patient's health literacy and internet use for health-related information.	Technology and patient-centered care
<b>Haddad et al. (27)</b> What Does Quality Mean to Lay People? Community Perceptions of Primary Health Care Services In Guinea <i>Republic of Guinea</i>	To identify, characterize, and classify the criteria that the public uses to judge the quality of primary healthcare (PHC) services in an African Rural context.	Qualitative method  Focus group discussions	180 participants	Patients want to be treated as a whole person rather than the case and perceive the quality of health cases based on technical competence, interpersonal skills of healthcare providers, available and adequate resources, and effectiveness of care.	Empathetic skills
<b>Brown-Johnson et al. (28)</b> What is clinician presence? A qualitative interview study comparing physician and non-physician insights about practices of human connection <i>U.S.A.</i>	To investigate the concept and practices of 'clinician presence,' exploring how physicians and professionals create connections, engage in interpersonal interaction, and build trust with individuals across different circumstances and contexts	Qualitative method  semi structured interviews	Forty participants included 10 physicians and 30 representatives from each non-medical profession Convenience sampling	Presence as a purposeful practice of awareness, focus, and attention with the intent to understand and connect with individuals/patients.	Empathetic skills
<b>Bahadori et al. (29)</b> Patients' and physicians' perspectives and experiences on the quality of medical consultations : a qualitative evidence <i>Iran</i>	To explore patients' and physicians' perspectives and experiences of the quality of medical consultations.	Qualitative method Face-to-face or telephone Interview  Thematic analysis	Forty-eight participants  Purposive sampling	Exemplary interpersonal skills are an important aspect of physicians' clinical competence. The patients assume that if the information about their health and illness is described by physicians in detail, it will promote the communication between them.	Empathetic skills

<p><b>Mustika <i>et al.</i> (30)</b> Unveiling the Hurdles in Cultivating Humanistic Physicians in the Clinical Setting : An Exploratory Study <i>Indonesia</i></p>	<p>To explore the process of teaching humanism and professionalism in the clinical setting from the perspectives of clinical teachers, residents, and medical students.</p>	<p>Qualitative method Focus group discussions and in-depth interviews  Thematic analysis</p>	<p>Medical clerks, residents, and junior and senior clinical teachers  Maximum variation sampling</p>	<p>Humanism is a core feature of medical professionalism whose attributes include altruism, a collaborative spirit, knowledgeability, competence, attentiveness, caring, and compassion.</p>	<p>Caring Competency</p>
<p><b>Berger <i>et al.</i> (31)</b> The patient–physician relationship : an account of the physician’s perspective <i>Israel</i></p>	<p>To explore and clarify how physicians perceive the mutual relationship they share with their patients.</p>	<p>Quantitative method  Descriptive survey using a semantic scale</p>	<p>291 physicians</p>	<p>While physicians believe their job performance is the most significant indicator of trust in the relationship, patients prefer interpersonal relationship with their physicians and want to be more informed about their problems and be more involved in the treatment process</p>	<p>Caring competency</p>

they believed that technological intervention can be complementary. Through structured interviews, they determined that when trust and patient rapport have been established, new technology are more readily accepted when introduced. Meanwhile, through a narrative study, Miller *et al.* (25) explored medical learners’ perspectives on Information and Communication Technologies (ICTs) and its impact on the patient- physician relationship. They found that ICT integration into healthcare allows physicians-in-training rapid access to patient information and facilitates in clinical decision making, however, there were mixed reviews regarding the ability to maintain the patient-physician relationship as technological advancements may increase the psychological distance between physicians and patients and hindering the development of their clinical empathy.

*Technology and Patient-Centered Care*

Two studies stood out with the theme of the role of technology in the care of the patient. In the study by De Rosis *et al.* (32), they investigate what motivates patients to use the internet for health-related information (e-health) and share it with a general practitioner (GP). The use of surveys inquired about the patient’s satisfaction and experiences with their general practitioners, the healthcare system, health information and communication related behaviors. It showed that a younger, more educated population use the internet for health- related purposes and that dissatisfaction with the healthcare system leads them to use the internet more. There was no significant association with internet use for e-health and patient dissatisfaction with their GPs ; however, it was noted that their role was important in creating a productive relationship with their patients as well as empowering and directing them to better health literacy practices. Leung *et al.* (26) sought to explore the qualities patients consider to be ideal or sought- after among the physicians in their respective communities, and while their study was not primarily geared toward technology involvement, their results reveal that patients consider technological competency as one of the ideal physician qualities. Leung *et al.* (26) conducted interviews and revealed that the respondents’ image of a professional physician is a morally ideal person, with virtue ethics, communication skills, attitudes encompassing holistic care, and provides a balance between patient and family autonomy. It was also noted that patients who use the internet feel more informed and less “submissive” hence, respondents believe that a physician who is continually “striving for excellence” in medical technological advancement is a good attribute to have.

*Empathetic Skills*

The theme of physician’s empathetic skills towards patients is prominent in three studies. In the study of Haddad *et al.* (27), they identify the perceptions of quality Primary Health-Care (PHC) services in an African rural community context through focus group discussions. It revealed that although the community holds the healthcare provider’s technical ability “to cure” important, they are most concerned about having proper reception and treatment and to be considered as a person with a health problem rather than a case. For the respondents, it inspires courage and the way the physician receives the patient is a source of comfort and helps the patient accept their difficult situation. Similarly, Bahadori *et al.* (29) sought to explore patients’ and physicians’ perspectives and experiences of the quality of medical consultations in Iran. The study showed that among all other components of quality discussed in their interviews, most respondents found that the exemplary interpersonal skills are the most important aspect of the physicians’ clinical competence. They also find that the clarification of the health problem and clear description of the treatment process are the most important parts of a physician’s visit and patients assume that if the information about their health and illness are described by physicians in detail, it will promote the communication between them. Brown-Johnson *et al.* (28) on the other hand explored how “clinician presence” is defined from insights inside and outside the medical field. Through structured interviews, physicians and non-medical professionals were asked about the concept of creating a connection, being more present, building trust, adjusting strategies for different people, and navigating the environment during interactions with clients and patients, and derived a definition that “Presence is a purposeful practice of awareness, focus, and attention with the intent to understand and connect with individuals/patients.” They found that “presence” is a universal concept that involves intentionality, focus, and attention to time and physical environment.

*Caring Competency*

The theme of caring competency or the understanding of caring competency was observed in two studies. Berger *et al.* (31) explored and clarified how physicians perceive a mutual relationship with their patients. Because social relationships are complex and not a single dimensional concept, Berger *et al.* (31) used the multi-dimensional Ganqing-Renqing-Xinren (GRX) scale to explore individual relational constructs and when put together, can build a better picture of what is seen as a quality relationship. They utilized three major relational

constructs: *Benevolence*, representing mutual feelings and emotional attachments, *Reciprocity* or matching differing viewpoints, and *Trust*, implying credibility. Each main concept had subconstructs representing other social qualities such as "Compassion" under *Benevolence* and "Careness" under *Trust*. Through the semantic scale and semi-structured interviews, the researchers found that the respondent physicians perceived "Trust" as the most important factor for patient satisfaction, followed by "Reciprocity" and "Benevolence." Among the sub concepts, the study showed that physicians evaluate their patient relationship based on their ability to solve the patient's problems through *devotion*, *serviceability*, *reliability*, and *trustworthiness* and least likely through the sub concepts of *social interaction* and *friendship*. The researchers pointed out that "Trust" and "Reciprocity" are the two most important factors in explaining the variation in overall patient satisfaction more than any other aspects in the eyes of the physician. This is a contrast from the patients' viewpoint, as researchers pointed out that in other studies, the patients stress the importance of their feelings and emotions in the patient-physician relationship. The quality of communication between the physician and patient involves assessment of the physician's willingness to include a patient in the decision-making process and to provide a patient with information at the same time balancing it with better social interaction. As a result, a more active role must be given to the patient, who being well informed by the physician, can help in the decision-making process.

On the other hand, Mustika *et al.* (30) explored the process of teaching humanism and professionalism in a clinical setting from the perspectives of clinical teachers, residents, and medical students. Their respondents studied modules on humanism in a clinical setting and underwent focus group discussions and interviews to discuss humanism and professionalism. Through the discussions, the respondents proposed the attributes of a humanistic physician to include patient centeredness, altruism, a collaborative spirit, knowledgeability, competence, attentiveness, caring, and compassion. Meanwhile, the study noted that hurdles in cultivating humanistic physicians include a less humanistic learning climate, negative role models, students' backgrounds, and the differences between clinical teachers and students in their perceptions of effective teaching and learning approaches. The respondents agreed that teaching future physicians these attributes require a nurturing approach and role modeling of these attributes. The researchers concluded that although technology is developing rapidly, the need for humanistic physicians has not diminished.

## DISCUSSION

Four themes were revealed as findings of the study: 1) Technology and caring competency, 2) Technology and patient-centered care, 3) Empathetic skills, 4) Caring competency. This section expands on them to provide further evidence.

### *Technology and caring competency*

Technology has come a long way and has improved the practice and delivery of medicine in many aspects, but the age of technological advancements and the information overload of the 21<sup>st</sup> century has also brought many challenges, especially for the patient-physician relationship. Competence is developmental, impermanent, and context-dependent (33). Qidwai (34) mentioned that exhibition of compassion and empathy through attentively listening to the patient's complaints, proper eye contact, and appropriate use of nonverbal cues enables the physician to gain the trust of a patient and build a rapport, which in turn helps enhance patient adherence to treatment. From the patients'

perspective, advancements in information technology have improved their access to information. Therefore, they are not only better aware of medical conditions and the treatment options available but are also exposed to a lot of non-evidenced-based information. Such advancements have made patients more demanding and in need for better explanation, which has also been a contributing factor in taking the focus away from providing compassion and empathy during consultations. In a relationship, the mere presence of fear from litigation erodes trust, thereby making a demonstration of compassion and empathy even more challenging.

A peek into the evolution of technology use in healthcare exhibits a dynamic and fascinating sequence of events that led to the digital health era as we know it, keeping in view the progress in technology has been exceedingly fast-paced and is increasingly orienting towards patient-centric principles (35). Hawk (36) declared that technology is only ever as useful as the value it helps us deliver. It is important to encounter new digital health technology, we should take a step back and assess how it can help us to deliver better patient-centered care. Artificial intelligence, for example, clearly has the potential to flag positive findings on a Computed Tomography examination or an X-ray and bring them to a radiologist's attention quicker than can be achieved currently. However, that is not where its real power lies. Well-designed technology like this also makes a physician's task easier by giving them more control over their work and enabling deeper interactions with their patients and colleagues. The best technology reduces the time physicians spend on mundane tasks, simplifies their work, and allows them to focus on the meaningful art of medicine. To realize technology's potential to help us achieve the goal of truly patient-centered care, however, we need a culture shift within healthcare.

Recent technological advances are enabling a more individualized consultation experience through Telemedicine or Telehealth services and secure messaging open communication channels between their physicians, between patients and health professionals, or between similar patients (37-39). Technologies that engage patients to report their care experience, outcomes, and follow-up activities empower them to improve the way healthcare providers deliver care and measure their performance. Together, these tools can increase transparency, manage expectations, and instill trust when patients are at their most vulnerable (37).

### *Technology and patient-centered care*

The quality of patient-physician relationship affects health and recovery from illness, costs, and outcomes of chronic disease by altering the patient's understanding of their illness and reducing their anxiety; it is responding to their emotions and allowing them to participate in the decision making (33). Emerging technology helps improve access, efficiency, and quality of care by putting the patient in the center of the digital experience to drive patient empowerment and engagement (40). Advances in information technology (IT) enable a fundamental redesign of healthcare processes based on the use and integration of electronic communication at all levels. New communication technologies can support a transition from institution-centric to patient-centric applications. However, the literature to date on the subject of patient-centered systems has focused overwhelmingly on technical feasibility matters (41).

Patient-facing technology has the potential to improve quality and safety by enabling patients to take a more active role in their care (37). By increasing the involvement of patients in their own healthcare, enabling them to proactively avoid health problems and better manage their conditions, we create a changing patient-centered technology ecosystem.

A previous study (24), the views of physicians and patients

on the use of computer systems during consults, and while both sides believed that modern technology should never be allowed to replace face-to-face interaction during patient consultations, they believed that technological intervention can be complementary. The integration of technology into healthcare allows physicians-in-training rapid access to patient information and facilitates in clinical decision making but may hinder empathy development as over reliance on technological advancements may increase the psychological distance between physicians and patients and affect their relationship (25). Physicians and physicians-in-training have access to practice data through Electronic medical records (EMRs) and can engage in quality improvement. Innovations in consultations with other specialists, such as “eConsult” and Rapid Access to Consultation Expertise, are improving access and offering ease for patients and referring physicians (42). Through proper training and use of EMRs, patient care can go beyond diagnosis and treatment discussion and involve appreciating contextual and socioeconomic factors, which can aid in developing trust and influence decision-making and approaches to management.

#### *Empathetic skills*

Empathetic skills inspire courage, and the way the physician receives the patient is a source of comfort and helps the patient accept their difficult situation (29). Empathy, sympathy and compassion also share elements with other forms of pro-social behavior such as generosity, kindness and patient-centeredness. Caring involves some degree of identification of a person as a human being with the same needs and deserving the same respect as oneself; this is part of the moral force of empathy (43).

Empathy and compassion are vital components of healthcare quality; however, physicians frequently miss the opportunities for empathy and compassion in patient care. Empathy and compassion are closely related terms, with empathy defined as the ability to sense, feel, and understand another's emotions, and compassion defined as an emotional response to another's pain or suffering involving an authentic desire to help (44). Physicians should be able to understand and connect with their patients on an emotional level, expressing genuine care and concern.

The exemplary interpersonal skills are the most important aspects of the physicians' clinical competence. Competence of clarification of the health problem and clear description of the treatment process are the most important parts of a physician's visit and patients assume that if the information about their health and illness are described by physicians in detail, it will promote the communication between them (29).

Brown-Johnson *et al.* (28) found that “clinician presence” is defined from insights inside and outside the medical field. The concept of creating a connection, being more present, building trust, adjusting strategies for different people, and navigating the environment during interactions with clients and patients, and derived a definition that “Presence is a purposeful practice of awareness, focus, and attention with the intent to understand and connect with individuals/patients.”

#### *Caring competency*

Mayeroff (45) mentioned about caring as the antithesis of simply using the other person to satisfy one's needs; it is not as an isolated feeling or momentary relationship, but a process of helping another grow and actualize oneself through mutual trust and through deepening and qualitative transformation of the relationship. Being benevolent is equated with being motivated by sympathy, understanding, and generosity. Benevolence, in the medical education literature, is frequently conceptualized as altruism, a concept, which has been central to the professionalism movement in medical education. A professional who is humble is

not arrogant or prideful (46).

Caring is an innate human trait, the “human mode of being,” (47) a part of human nature, and essential to human existence (48). It is a language of relationships, of attitudes and emotions; a nontechnical, commonsense language of interpersonal engagement, and less a language of knowledge and facts (49). Although all humans have the potential to care, it is not expressed uniformly in every individual (50).

The practice of medicine has always seen the physician as one with a unique range of knowledge and skills who puts them to use in the care of patients. As such, the physician-patient interaction is paramount and has served as the foundation of healthcare delivery—a personal, caring relationship that has stood the test of time (51). With the demands of modern medicine, however, the physician's ability to deliver humanistic, patient centered care now seems to inadvertently become a lesser priority in return for adapting to the changes the 21<sup>st</sup> century has brought to medical care (51).

The notion of compassion and compassionate care is playing an increasingly important role in health professional education and in the delivery of high-quality healthcare. Compassion—defined as noticing the suffering of another and being motivated to alleviate it is an important healthcare characteristic (52). It is a topic of great interest in recent healthcare research (53) as patients preferred the physician who are more compassionate and professional and as having better communication skills (25, 54).

## LIMITATIONS AND IMPLICATIONS

Only 9 studies met the criteria established for the systematic review. Although studies from different countries were highlighted, the study findings may have widened the horizon of the findings if more articles qualified for the study. For example, increasing the inclusive years of article publications may have captured more articles that met the criteria for inclusion that as a lack of studies to represent the aims that our study wanted to address.

The emphasis on technologies skewed the findings to detect the prioritization of the roles of physicians in their practice. Although it is understood that technology is advancing in an exponential rate and that technological dependency in healthcare processes only heightened the reality of healthcare quality as dependent on technologies. Physicians, therefore, must engage in the design, development, application, and evaluation of technologies in healthcare, recognizing the necessity of advanced technologies as a critical to the implementation of interventions with technologies as priority tools for fostering quality healthcare. However, while patients recognize the role of physicians in a highly technological world, supported by the findings of this study is the appreciation of humanness as the critical quality of physicians that patients consider in choosing to whom to entrust their healthcare. Physicians' future dependency on technology is integral to the characteristics of expressing competency as an expression of caring. As such, being technologically competent is being caring.

The authors hope that this study can be used in furthering active discussion of valuing physician caring practices within the framework of being technologically competent and caring. Technological competency and its involvement in patient care understanding grounded in caring concepts and ethical and moral attitudes and responses toward patients is vital to attaining human health and well-being. Physicians should adhere to ethical and moral standards, maintain patient confidentiality, and act in the best interests of their patients at all times.

## CONCLUSION

This systematic review explored patient understanding, understanding of caring concepts, understanding of technology, competency to express compassion, appropriate involvement in caring, and ethical and moral attitudes and responses toward patients. This review has shown that patients look for a physician as someone who considers their emotions and communicates with them with the intention to empower them to be responsible for their own healthcare, or their loved ones' healthcare. For the patients, to be cared for by their physician means that beyond their knowledge and expertise, there is an empathetic understanding and expression of compassion, open communication, and a developed sense of trust with one another. Enhanced caring competency by physicians today may be directly related to technology adoption, influencing the physician's role in adapt to these changes while maintaining their expressions of humanness, not only to heal but to guide, educate, and appropriately empower their patients towards attaining their healthcare goals.

## CONFLICT OF INTEREST

The authors have no conflict of interest to disclose.

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