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Non-Cognitive Profiles in Medical Professionals: A Prisma-Guided Systematic Review (2020–2024)

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Abstract

Background: Medical professionalism is grounded in ethical and humanitarian commitments; however, persistent ethical violations and malpractice cases indicate potential deficiencies in non-cognitive competencies. Despite growing scholarly attention, existing evidence remains fragmented and lacks comprehensive synthesis.
Objective: This research systematically synthesizes empirical evidence (2020–2024) to identify appropriate and inappropriate non-cognitive profiles in medical professionals and to examine their implications for professionalism, clinical performance, and ethical conduct.
Methods: This systematic review synthesizes empirical evidence identifying non-cognitive profiles supporting exemplary medical practice while distinguishing appropriate from inappropriate characteristics associated with ethical conduct and malpractice risk. Employing systematic methodology based on empirical literature (2020–2024), PRISMA 2020 guidelines ensured transparent evidence mapping, quality assessment, and synthesis across major databases (Scopus, Web of Science, PubMed) following standardized identification, screening, eligibility, and inclusion protocols.
Results: Most included studies were observational and predominantly cross-sectional, with moderate methodological heterogeneity. Positive non-cognitive competencies—particularly empathy, resilience, emotional intelligence, professionalism, and compassion—demonstrate consistent associations with improved professional conduct, reduced burnout, and enhanced patient-related outcomes. In contrast, maladaptive traits, including Dark Triad characteristics, maladaptive perfectionism, and neuroticism, are associated with unethical behavior, interpersonal conflict, and diminished professional performance.
Conclusion: Non-cognitive profiles constitute essential determinants of medical professionalism alongside cognitive competence. Although the evidence is largely observational, findings support the structured integration of non-cognitive assessment and development into medical education, professional selection, and continuing training frameworks to strengthen ethical standards and reduce professional misconduct.

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INTRODUCTION

The medical field constitutes a distinct and highly regulated profession in which healthcare practitioners are expected to uphold clearly defined standards of professionalism. As members of a socially mandated profession, physicians and other health professionals are entrusted with specialized knowledge, clinical authority, and ethical responsibility derived from rigorous formal education and competency-based training. Professionalism in medicine extends beyond technical expertise; it encompasses moral integrity, accountability, commitment to

patient welfare, adherence to ethical codes, and responsibility to society. This professional status grants autonomy and public trust, while simultaneously imposing obligations to maintain competence, prioritize patient interests, and practice within established ethical and legal frameworks. Such characteristics distinguish medicine from other occupations and position professionalism as a foundational element of healthcare delivery.

The medical profession encompasses paid employment within a specialized occupational group possessing unique status, privileges, and social power, characterized by monopolistic control over specific work tasks, substantial professional autonomy, and expertise derived from rigorous formal training and specialized knowledge (Goddard & Brockbank, 2023). The term "*professio*" (Latin), meaning "canonical oath of obedience" (Vimal & Nishanthi, 2021), embodies quality professional practice grounded in wisdom, specialized education, professional pride, responsibility, and enthusiasm (Thirumoorthy & Shelat, 2025), fundamentally driven by the intention to alleviate patient suffering (Y. Chen et al., 2022; Chmielewska et al., 2025). Professional development through appropriate authorization and monopoly schemes enables society to verify that practitioners meet competency expectations through strengthened "professional ethics" (Shamir, 1993).

Physicians exemplify medical professionals by demonstrating highly desirable non-cognitive profiles. They must prioritize patient needs above personal interests through high ethical and moral standards, humanistic values, cognitive superiority, and lifelong learning commitment (Vimal & Nishanthi, 2021). Medical professionals operate under intense pressure while maintaining the highest ethical standards due to their position of public trust, historically formalized through an informal "medical contract with society" that generated formal regulations (Bhardwaj, 2022). The Indonesian Medical Code of Ethics (*Kode Etik Kedokteran Indonesia*) formally mandates that physicians demonstrate scientific competence, moral integrity, empathy, and a sustained commitment to patient safety as core professional obligations. This regulatory framework underscores the integration of cognitive and non-cognitive competencies within national standards of medical professionalism. To strengthen the scholarly rigor of this statement, a direct citation from the official document issued by the Indonesian Medical Association (*Ikatan Dokter Indonesia*) or the Indonesian Medical Council (*Konsil Kedokteran Indonesia*) should be included in the reference list.

Ethical violations and malpractice cases signal potential deficiencies in the non-cognitive profiles of medical professionals. National data from Indonesia highlight the magnitude of this concern, with 313 disciplinary cases reported between 2016–2022 (*Majelis Kehormatan Disiplin Kedokteran Indonesia*, 2022) and 68 cases documented in 2023 (*Konsil Kedokteran Indonesia*, 2023). Additional reports include three serious sexual violence cases in early 2025 (Suni, 2025) and 57 alleged malpractice complaints recorded throughout 2025. Collectively, these figures underscore the persistent and systemic nature of professional misconduct.

Such violations, ranging from clinical negligence and professional abuse to broader forms of unprofessional behavior, cannot be attributed solely to deficits in technical knowledge or clinical competence. Emerging evidence suggests that they are closely linked to inadequacies in non-cognitive psychological attributes. Notably, unprofessional conduct observed during medical education or early career stages demonstrates strong associations with non-cognitive deficiencies, and physicians exhibiting such behaviors face approximately twice the likelihood of disciplinary action compared to their professional counterparts (M. I. da Rosa et al., 2024).

Medical education and professional development must extend beyond cognitive competence to systematically address non-cognitive dimensions that shape ethical conduct and clinical performance. Although previous reviews have discussed professionalism and selected personality traits, no recent synthesis (2020–2024) has comprehensively categorized both protective and risk-related non-cognitive profiles within a unified analytical framework. Existing literature remains fragmented across psychological constructs, educational outcomes, and disciplinary reports, creating a gap in integrative evidence that links specific traits to measurable professional consequences.

This study addresses the research question: What non-cognitive profiles are appropriate and inappropriate for the medical profession based on recent empirical evidence? Distinct from prior reviews, this systematic synthesis provides: (a) a structured classification of positive and maladaptive non-cognitive profiles; (b) categorization of evidence strength and study

characteristics; (c) analysis of implications for medical curriculum design and selection processes; and (d) evidence-informed recommendations for professional regulation and policy development.

By focusing on empirical studies published between 2020 and 2024, this review offers an updated evidence map to support structured integration of non-cognitive competencies into medical education and governance frameworks. This gap in the literature specifically between 2020 and 2024 is crucial because it reflects the rapid evolution in medical education and professional regulation driven by emerging ethical concerns, technological advancements, and the growing demand for professionalism standards. The findings will allow for the development of more targeted curricula, improved physician selection processes, and enhanced policy frameworks to address these critical non-cognitive competencies. The objective of this study is to provide a comprehensive framework for integrating non-cognitive profiles into the medical profession's educational and professional development strategies, aiming to improve both practitioner selection and professional practice outcomes.

METHOD

This study employed a systematic review design of empirical journal articles published between 2020 and 2024 in accordance with the PRISMA 2020 guidelines Page et al. (2021) to ensure transparent identification, screening, eligibility assessment, and evidence synthesis. A review protocol was developed *a priori* to define the research questions, eligibility criteria, search strategy, and data extraction procedures, and protocol registration details should be explicitly reported where applicable to enhance transparency and reproducibility. Comprehensive searches were conducted in Scopus, Web of Science, and PubMed within a clearly specified search period, using predefined keywords and Boolean operators. Deduplication followed established methodological recommendations and study selection, quality appraisal, and synthesis were performed systematically to minimize bias and strengthen methodological rigor (Rethlefsen et al., 2021).

Inclusion and exclusion criteria were applied in accordance with the PRISMA flow diagram stages identification, screening, eligibility, and final inclusion (Page et al., 2021). The search strategy was predefined and incorporated explicit search strings combining controlled vocabulary and free-text terms related to non-cognitive traits and medical professionalism, applied across title, abstract, and keyword fields. Searches were limited to peer-reviewed empirical studies published between 2020 and 2024, with language and study-design restrictions clearly specified. The final search date should be explicitly reported to ensure transparency and reproducibility. Where applicable, protocol registration details (e.g., PROSPERO or OSF) should also be provided to strengthen methodological accountability and minimize reporting bias.

Identification targeted keywords for positive non-cognitive variables (prosocial behavior, empathy, altruism, honesty, humility) and negative variables (Dark Triad, neuroticism). Screening applied inclusion-exclusion criteria through title-abstract review, excluding inappropriate topics, non-empirical research, irrelevant populations, and unsuitable designs. Eligibility assessment involved full-text evaluation of research design appropriateness, methodological reliability, data completeness, and relevance to study objectives. Articles that did not meet these criteria were excluded following predefined standards, including incomplete or missing primary data, unreported key variables, non-transparent or non-evaluable methodologies, non-empirical formats (e.g., editorials or commentaries), and lack of direct relevance to non-cognitive profiles in medical contexts. A structured summary of exclusion reasons should be presented (e.g., within the PRISMA flow diagram) to ensure transparency and reproducibility of the selection process.

Synthesis was conducted through a structured narrative approach integrating qualitative analysis of all eligible empirical studies and thematic aggregation of findings derived from studies reporting standardized numerical data. As no meta-analysis was performed, quantitative findings were descriptively synthesized rather than statistically pooled. Reviewers systematically evaluated study hypotheses, population characteristics, sampling techniques, relevance to medical contexts, data collection procedures, validity and reliability of measurement instruments, and the appropriateness of statistical analyses used for hypothesis testing to ensure methodological rigor and interpretative consistency.

RESULTS AND DISCUSSION

Results

Expected Non-Cognitive Profile of Medical Professionals Empathy

Medical professionals require empathy to accurately recognize and respond to patients' emotional states, with implications that vary across professional groups. Evidence drawn from studies involving physicians, nurses, and, in some cases, mixed healthcare populations demonstrates that empathic practice is positively associated with improved clinical communication, higher patient satisfaction, better medication adherence, and reduced litigation risk (Hojat et al., 2023). Conversely, reduced empathy particularly empathy erosion associated with professional distress—has been linked primarily among practicing physicians to inadequate risk disclosure, compromised informed consent processes, and increased patient dissatisfaction that may escalate to ethical complaints and legal action (H. Chen et al., 2024). These findings underscore empathy as a measurable non-cognitive competency influencing both relational and medicolegal outcomes.

Prosocial Behavior

Prosocial behavior in medical professionals refers to intentional actions oriented toward benefiting patients, colleagues, and broader communities, including cooperation, altruistic assistance, and voluntary engagement beyond formal role obligations. Within clinical contexts, prosocial orientation strengthens therapeutic alliances, facilitates interprofessional collaboration, and enhances responsiveness to vulnerable populations. Empirical evidence indicates that prosocial interventions are significantly associated with improved health outcomes and patient well-being, particularly among socially or medically vulnerable groups (Byrne et al., 2023). These findings position prosocial behavior as a measurable non-cognitive competency that contributes not only to individual patient care but also to broader healthcare system effectiveness and equity.

Altruism

Medical professionals exhibit altruism through selfless motivations to assist others without expectation of personal benefit. Healthcare altruism intrinsically connects to vocational calling and compassionate practice, functioning as a fundamental professional value. Altruism reflects practitioners' compassion depth, clinical competence, and care quality, manifesting through altruistic patient care, organ donation, financial philanthropy, volunteerism, patient benefit maximization, and collegial support (Y. Chen et al., 2022).

Honesty and Openness

Medical professionals maintain honesty and transparency in clinical communication to preserve patient trust and effectively manage adverse events. When healthcare inadvertently harms patients, anxiety proliferates across all stakeholders patients and families confront overwhelming uncertainty while managing physical, emotional, and financial burdens; healthcare professionals experience intense emotions while lacking adequate time for processing or resources for suffering alleviation and harm prevention. Honesty, transparency, and empathy constitute essential elements of comprehensive approaches prioritizing patient-centered and family-centered responses to unintended harm, clinical improvement initiatives, and remedial peer review processes (Brenner et al., 2022).

Humility

Medical professionals demonstrate humility by balancing professional authority with acknowledgment of personal limitations and openness to consultation. Humility enhances patient satisfaction and communication effectiveness, serving as a critical driver of clinical excellence. Physicians manifest humility through dual perspectives: internally, through intellectual self-assessment of capabilities and limitations, calibrated self-confidence, and intellectual openness to medical science's boundaries and advancements; externally, through social awareness of healthcare systems, openness to collaborative input, and valuation of patient experiences. Physician humility strengthens clinical care quality, fosters learning curiosity, sustains caregiving motivation, and enriches relationships with team members and patients (Wadhwa & Mahant, 2022).

Professionalism (Integrity Identity)

Medical professionals orient toward professional ethics, accountability, and commitment to medicine's moral standards. Professionalism constitutes a fundamental non-cognitive construct in clinical practice, representing a critical component for achieving the Institute of Medicine's six healthcare quality goals: safe, effective, patient-centered, timely, efficient, and equitable care delivery for patients and families (Bhardwaj, 2022).

Emotional Intelligence

Emotionally intelligent healthcare professionals possess capabilities to recognize and effectively manage both personal and others' emotions. Emotional intelligence training demonstrably improves aged care nurse performance, with nurses developing emotional competencies reporting enhanced resident care quality, improved personal well-being, and increased psychological empowerment (Karimi et al., 2021). Emotional intelligence correlates with elevated job performance and satisfaction while reducing burnout incidence (Powell et al., 2024).

Big Five Personality Traits

Medical professionals demonstrating adaptive personality traits particularly conscientiousness, agreeableness, openness, and extraversion tend to exhibit stronger clinical performance, higher life satisfaction, and improved physician–patient relationship quality, whereas high neuroticism is generally associated with less favorable outcomes (Peroš et al., 2025). Conscientiousness supports effective knowledge acquisition and professional reliability, while personality dimensions also influence specialty preferences, with agreeableness and extraversion linked to patient-centered fields and openness associated with procedure-oriented disciplines. Notably, moderate levels of neuroticism among medical students have been associated with enhanced clinical skills performance, suggesting a nuanced relationship between personality traits and professional competence (Nawaiseh et al., 2020; Sultan et al., 2023).

Self-Efficacy

Medical professionals with high self-efficacy demonstrate strong confidence in their ability to perform clinical tasks effectively, which is associated with improved decision-making, adaptive coping, and overall performance quality (Razaghi et al., 2025). Patient-centered self-efficacy is particularly important in chronic disease management, supporting sustained therapeutic relationships and coordinated care (Brands et al., 2022). Collectively, these findings position self-efficacy as a key non-cognitive competency that enhances resilience and professional effectiveness in demanding healthcare environments.

Resilience

Medical professionals demonstrating resilience possess the capacity to endure and recover from stress, trauma, crises, and repetitive workloads while maintaining professional functioning quality through coping flexibility, recovery mechanisms, and behavioral adaptation. Resilience significantly mitigates burnout risk and stabilizes care quality during crises, consequently reducing medical errors and enhancing staff retention (Baskin & Bartlett, 2021). Clinical resilience manifests through sustained psychological well-being, consistent clinical judgment maintenance, and effective team functioning during critical situations. Resilient practitioners exhibit reduced stress and burnout symptomatology, accelerated emotional recovery post-stressor, and diminished exhaustion-depersonalization accumulation that would otherwise impair cognitive abilities and motivation (Han & Yeun, 2024). Both individual and organizational resilience enhance safety climate and systemic capacity for disruption management through adaptive mechanisms, potentially reducing safety incidents. Resilient healthcare workers demonstrate increased participation in debriefings, proactive incident reporting, and collegial support behaviors, thereby strengthening psychological safety and team adaptability (S. Y. Chen et al., 2024).

Spirituality

Medical professionals' spirituality encompasses meaning, purpose, values, and transcendental orientation, reflected in spiritual well-being, spiritual intelligence, and spiritual care competence. Evidence indicates that integrating spiritual care into medical education and clinical services is associated with improved end-of-life care quality and patient satisfaction (Crozier et al., 2022), while higher spirituality correlates inversely with burnout. Spiritual competence appears trainable and linked to measurable professional behaviors, caring performance, and patient well-being outcomes (Vitorino et al., 2024). Nevertheless, these findings are largely derived from culturally specific contexts, and variations in sociocultural and healthcare systems may limit generalizability, warranting cautious interpretation and further cross-national validation.

Compassion

Medical professionals have the capacity to be sensitive to patient suffering and the motivation to alleviate it. Compassion improves patient-centered care and patient satisfaction; reduces medical errors by improving communication; and lowers the risk of healthcare worker burnout. Clinician compassion significantly improves the quality of care and patient trust (Malenfant et al., 2022). Compassionate healthcare improves patient adherence, healthcare quality and safety, and financial margins, and prevents physician burnout (Lains et al., 2023).

Emotion regulation

Medical professionals demonstrating emotion regulation competence maintain emotional stability during high-stress clinical situations including patient deaths, patient-family conflicts, administrative burdens, and complex cases. Physicians and nurses employing adaptive emotion regulation strategies reappraisal, emotional awareness, cognitive reframing exhibit significantly reduced burnout rates and clinical error frequencies. Effective negative emotion management enables empathetic practice and open dialogue maintenance, particularly during difficult communications such as delivering adverse news, consequently minimizing patient-family conflicts and ethical complaints. Emotion regulation facilitates calmness, empathy, and consistent decision-making under emotional duress (Lam et al., 2024). Adaptive strategies, particularly cognitive reappraisal, prevent Emergency Department staff burnout while enhancing occupational well-being (Pálfi et al., 2024). Furthermore, emotion regulation sustains situational awareness and cognitive acuity, reducing impulsive decision risks that endanger patients in Emergency and Intensive Care Departments (D. Rosa et al., 2024). Structured emotion regulation and communication training programs demonstrably increase clinical preparedness for emotionally challenging situations (Lange et al., 2024).

Unexpected Non-Cognitive Profile

The Dark Triad (Machiavellianism, psychopathy, narcissism) alongside negative psychological variables (selfishness, sadism, cynicism, social dominance, maladaptive perfectionism, neuroticism) constitute non-cognitive traits with demonstrable adverse impacts on medical professional performance. Supervisory Dark Triad characteristics negatively affect nurses' task performance through diminished psychological safety and impaired work design perceptions, with psychopathic elements exhibiting direct performance detriments (Raineri & Cartes, 2024). Dark Triad traits correlate with reduced empathy and compromised moral positioning, significantly impeding medical students' professionalism development. Machiavellian manipulative traits in nurses demonstrate direct associations with medical error commission, establishing clear relationships between manipulative characteristics and clinical risk behaviors.

Psychopathy characterized by antipathy, empathy deficits, and hierarchical orientations precipitates discrimination, inhumane treatment, and patient-provider trust erosion. Emerging evidence links these traits to interpersonal aggression, bullying, degraded workplace climates, and compromised patient safety and satisfaction (Lobbestael et al., 2023). Surgeons exhibiting elevated narcissism (admiration and rivalry dimensions) demonstrate increased hostility, disruptive behaviors, and threats to patient safety (El Boghdady & Ewalds-Kvist, 2023).

Maladaptive self-critical perfectionism significantly predicts pediatrician emotional

exhaustion and depersonalization, with low conscientiousness and agreeableness correlating with burnout dimensions that compromise care quality and patient safety (Martin et al., 2022). Neuroticism strongly predicts distress and burnout, with high neuroticism increasing emotional exhaustion susceptibility and impairing clinical decision-making in high-stress intensive care contexts (Pakou et al., 2024). Disruptive clinician behaviors triggered by maladaptive traits causally relate to adverse events, with poor interpersonal conduct directly impacting patient safety (Moreno-Leal et al., 2024). While direct evidence for everyday sadism, cynicism, and selfishness in healthcare remains limited, existing reviews and cross-sectional studies link these traits to interpersonal aggression, bullying, toxic workplace cultures, and diminished patient safety mechanisms supported by personality psychology literature and clinical disruptive behavior research (Moellmann et al., 2024).

Discussion

The medical field as a noble profession

Expected non-cognitive profiles for medical professionals possess ancient origins, most notably articulated in Hippocratic teachings from the island of Kos (circa 460–370 BCE). Historian Roy Porter identifies Hippocrates' pivotal contribution in defining the noble medical practitioner archetype, establishing models of exemplary professional conduct while anchoring healthcare practice within natural sciences rather than religious or magical frameworks (Judi & Kusbiantoro, 2025). This paradigmatic shift established foundational principles of equitable treatment and selfless service transcending patients' social circumstances. The ethical foundations of medical professionalism are historically reflected in the Hippocratic Oath, which emphasizes moral integrity, beneficence, and avoidance of harm. In this review, such principles are positioned as conceptual background rather than empirical findings. Contemporary evidence (2020–2024) indicates that these longstanding ethical commitments align with measurable non-cognitive competencies, including empathy, integrity, and self-regulation. The Oath codified these expectations through solemn commitments: "I swear to keep this Oath and Promise to the best of my ability and wisdom... I will keep my life and knowledge pure and pious... In the homes I visit, I will benefit the sick, while abstaining from all injustice and deliberate seduction." This oath established normative standards for professional conduct, obligating practitioners to exercise optimal ability and judgment while prioritizing societal and individual patient welfare. Core principles emphasized justice pursuit, injustice avoidance, and patient harm prevention, explicitly prohibiting euthanasia, abortion involvement, sexual harassment, and confidentiality breaches. The enduring principle "benefit or at least do no harm" (*primum non nocere*) encapsulates this ethical foundation (Judi & Kusbiantoro, 2025).

Medieval and Enlightenment-era scholars further elaborated non-cognitive professional expectations. Benedict's Rule (*Regula Sancti Benedicti*, Chapter 36, 516 CE) prioritized patient care above all duties, framing medical service as sacred obligation: "the care of the sick should take precedence over every other duty, as if the care were directed to Christ himself." Islamic physician-philosopher al-Ruhawi emphasized prerequisite spiritual soundness alongside demonstrable compassion, meticulous attention, patience, and emotional stability toward patients. Al-Ruhawi's economic ethics mandated equitable fee structures ensuring "justice for the poor and weak, so that the benefits of medical science may be universal and equally for the strong and the weak," establishing principles of healthcare accessibility transcending socioeconomic stratification. Scottish physician-philosopher Professor John Gregory (18th century) articulated dual performance indicators: first, practitioners must avoid self-aggrandizement while treating all patients with equal compassion and commitment regardless of social background; second, practitioners bear obligations to prioritize patient interests above personal considerations while earning public trust through institutional conduct. The principle of prioritizing patient interests supports the conceptualization of medicine as a conscience-driven vocation rather than merely a commercial enterprise (Judi & Kusbiantoro, 2025). Within the scope of this review (2020–2024), this perspective is presented as contextual framing, while the primary emphasis remains on recent empirical evidence examining how specific non-cognitive competencies operationalize and sustain patient-centered professionalism in contemporary practice.

The 1948 Geneva Declaration updated Hippocratic principles for modern medical

practice, emphasizing dedication to humanity, patient welfare as a preeminent consideration, respect for autonomy and confidentiality, and non-discrimination in professional duties. It also underscores the obligation to uphold human dignity and to refrain from using medical knowledge contrary to humanitarian principles. Within the scope of this 2020–2024 review, these historical and normative frameworks are presented solely as contextual foundations. The primary focus remains on contemporary empirical evidence demonstrating how enduring values such as compassion, integrity, humility, and equitable treatment are operationalized as measurable non-cognitive competencies in current medical education and professional practice.

Challenges of the medical profession

The findings of this review indicate that contemporary medical practice operates within increasingly complex and high-pressure environments, where technical competence alone is insufficient to sustain professional performance. Empirical evidence synthesized from 2020–2024 consistently demonstrates that non-cognitive competencies such as resilience, emotional regulation, empathy, teamwork, and moral reasoning serve as critical determinants of ethical conduct, patient safety, and practitioner well-being. These results position non-cognitive profiles not as supplementary attributes, but as foundational components of medical professionalism that directly influence clinical outcomes and organizational integrity.

Medical professionals confront multifaceted practical challenges necessitating robust non-cognitive preparedness. High workloads and chronic understaffing characterize contemporary healthcare environments, with elevated patient-to-staff ratios intensifying stress levels, accelerating cognitive fatigue, and demanding sophisticated time management, prioritization, emotion regulation, and resilience to sustain care quality and patient safety. Empirical evidence establishes strong associations between understaffing and adverse outcomes including burnout, compromised care quality, and increased adverse events circumstances requiring non-cognitive competencies such as adaptive coping, effective prioritization, and teamwork (Di Giuseppe et al., 2021; Jomaa et al., 2022). High-intensity clinical settings demand rapid decision-making, coordinated teamwork, shared situational awareness, and emotional regulation to prevent impulsive decisions endangering patients. Non-cognitive factors including teamwork capability, situational awareness, and emotional regulation function as critical performance determinants, with empirical evidence from team performance reviews in high-acuity contexts confirming that effective teamwork and shared mental models significantly reduce adverse events (Weller et al., 2024). Routine exposure to patient death, grief, and trauma particularly in palliative care, intensive care units, and oncology precipitates compassion fatigue and moral distress, with professionals demonstrating emotion regulation, resilience, and spiritual grounding maintaining empathy despite repeated exposure. Clinical trauma exposure correlates with compassion fatigue and necessitates resilience mechanisms, while spiritual well-being and emotion regulation demonstrate protective effects (Di Giuseppe et al., 2021).

Medical professionals navigate complex ethical landscapes characterized by moral distress arising from conflicting professional values in resource allocation and end-of-life decision-making contexts. Non-cognitive capacities enable value conflict management without succumbing to burnout or ethical violations, with pandemic-era evidence revealing bidirectional relationships wherein moral distress both exacerbates and results from burnout, underscoring non-cognitive skills' necessity (Maunder et al., 2023). Workplace violence exposure verbal and physical abuse from patients or families induces trauma, fear, and burnout, requiring emotional regulation, resilience, and organizational support for effective management. Medical professionals lacking adequate non-cognitive capacities demonstrate heightened performance vulnerability, with empirical evidence confirming workplace violence substantially diminishes nurses' well-being, though resilience mitigates violence-induced burnout (Kolutek et al., 2024). Administrative pressures including electronic medical record burdens and clerical overload increase cognitive fatigue while reducing patient communication time, necessitating time management proficiency, conscientiousness, and interpersonal competencies to preserve care quality. Administrative burden correlates with moral distress and burnout, positioning non-cognitive factors as protective mechanisms (Di Giuseppe et al., 2021). Organizational cultures lacking psychological safety and characterized by problematic leadership create environments where staff fear error reporting and open dialogue, perpetuating systemic errors. Empirical

evidence demonstrates that leadership exhibiting *Dark Triad*traits diminishes psychological safety and staff performance, emphasizing non-cognitive competencies' importance across organizational hierarchies (Jomaa et al., 2022).

Systemic uncertainties and major crises pandemics, disasters amplify emotional burdens, ethical dilemmas, and task ambiguity, creating substantial demands for resilience, flexibility, emotion regulation, teamwork, and organizational adaptability. Post-2020 research comprehensively confirms non-cognitive capacities' protective functions for staff mental health during crisis conditions (Di Giuseppe et al., 2021). Complex patient management involving multimorbidity, comorbidity, and sociocultural complexity requires sophisticated communication skills, empathy, cultural competence, moral reasoning, and interprofessional collaboration to coordinate holistic care plans effectively. Evidence reviews establish direct linkages between complex case management and enhanced teamwork requirements alongside non-cognitive competencies essential for reducing care fragmentation (Hall-Lord et al., 2024). Collectively, these diverse challenges underscore non-cognitive profiles' fundamental importance as core competencies enabling medical professionals to sustain effective practice amid contemporary healthcare's demanding, multifaceted operational environments.

CONCLUSION

Non-cognitive profiles constitute critical determinants of medical professional performance alongside cognitive competencies. Appropriate non-cognitive attributes including empathy, prosocial behavior, altruism, honesty, humility, professionalism, emotional intelligence, adaptive personality traits (conscientiousness, extraversion, openness, agreeableness), self-efficacy, resilience, spirituality, compassion, and emotion regulation are consistently associated with improved patient safety, reduced medical errors, enhanced satisfaction, lower burnout, and stronger clinical decision-making. Conversely, inappropriate profiles such as Dark Triad traits, maladaptive perfectionism, neuroticism, disruptive behaviors, sadism, cynicism, and selfishness are linked to unethical conduct, impaired teamwork, and increased patient conflict, suggesting that many professional violations originate from non-cognitive rather than purely cognitive deficits.

This review has several limitations. The included studies were predominantly observational and cross-sectional, limiting causal inference; methodological heterogeneity and variable measurement instruments may affect comparability; potential publication bias and language restrictions may have excluded relevant evidence; and most studies were context-specific, limiting generalizability. Future research should incorporate longitudinal and multicenter designs with standardized assessment tools. Practically, structured non-cognitive assessment should be integrated into medical student selection and residency recruitment using validated instruments (e.g., empathy scales, emotional intelligence inventories, personality assessments, and situational judgment tests), alongside curriculum-based training in resilience, professionalism, and ethical decision-making to strengthen regulatory and educational frameworks.

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AUTHORS CONTRIBUTION

The author independently conducted the entire research process, including conceptual framework development, protocol design, database searching, study selection, data extraction, quality appraisal, narrative synthesis, manuscript drafting, and final editing. The author also takes full responsibility for the integrity, accuracy, and accountability of all aspects of the work.

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