

THE ETHICAL ATTRIBUTES OF A MUSLIM RADIOGRAPHER: AN INTEGRATIVE REVIEW BASED ON THE QUR'AN, SUNNAH AND CONTEMPORARY RADIOGRAPHY LITERATURE

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Abstract: Radiography is a healthcare profession in which technical competence, patient-centred care, professional judgement, and radiation protection are inseparable. Radiographers are entrusted with patient communication, positioning, image acquisition, confidentiality, exposure control, radiation justification, optimisation, and safe use of imaging modalities. Although contemporary radiography practice is guided by professional standards on patient safety, communication, confidentiality, competence and radiation protection, limited attention has been given to how Qur'anic and Prophetic ethical principles can shape the professional identity and daily conduct of Muslim radiographers. This integrative review synthesises Islamic normative texts, professional standards and guidelines, and contemporary radiography literature to identify the ethical attributes of a Muslim radiographer and align them with radiographic practice. The review identifies ten ethical attributes which are amanah (trustworthiness), ihsan (excellence), hifz al-nafs (preservation of life), justice, protection of dignity and privacy, compassion, truthfulness, knowledge and competence, patience and sincerity. These attributes align closely with contemporary radiography ethics, particularly beneficence, non-maleficence, justice, autonomy, privacy, confidentiality, competence, accountability, justification, optimisation, and dose management. The study concludes that Islamic ethics does not replace professional radiography standards; rather, it provides a moral and spiritual foundation through which Muslim radiographers may internalise professional duties as ethical responsibilities. Future research should focus on evaluating the impact of Qur'an-Sunnah-based ethics education on radiographic practice, developing validated Islamic ethical assessment tools, and exploring patient perspectives alongside ethical responses to artificial intelligence in medical imaging.

Keywords: Islamic ethics; Muslim radiographer; Qur'an and Sunnah; radiography ethics; radiation protection.

Introduction

Radiography is not merely a technical discipline concerned with producing diagnostic images. It is a healthcare profession involving direct patient interaction, informed communication, privacy protection, professional judgement, radiation safety and ethical accountability (Health and Care Professions Council [HCPC], 2023; International Commission on Radiological Protection [ICRP], 2024; Ochonma et al., 2015; Society of Radiographers [SoR], 2025). Radiographers often interact with patients at moments of vulnerability, including when patients are anxious, in pain, undressed, immobilised, embarrassed, confused, or uncertain about the procedure being performed (Fakes, 2024; Makanjee et al., 2021; Pollard et al., 2019). These encounters make radiography a morally significant practice, not simply a technical imaging task, because radiographers must balance diagnostic image quality and radiation safety with communication, autonomy, confidentiality, dignity and compassionate patient care (Hancock & Bleiker, 2023; ICRP, 2024; Makanjee et al., 2021; Ochonma et al., 2015).

The ethical attributes of radiographers are significant because radiographic practice involves both technical decision-making and direct human care. Radiographers are often the professionals who translate a clinical request into an actual imaging procedure; therefore, their ethical judgement affects whether patients are properly identified, informed, positioned, protected, exposed, documented, and treated with dignity. In medical imaging, ethical conduct is closely related to patient safety because unjustified or poorly optimised exposure may increase avoidable radiation risk, while poor communication, inadequate consent, or disregard for privacy may weaken patient trust and satisfaction (Bochud et al., 2020; Makanjee & Engel-Hills, 2018; Martínez & Zölzer, 2024; Reitan et al., 2024).

The reviewed literature shows that radiation protection compliance, patient communication, informed consent and ethical conduct remain relevant concerns in radiography practice; indicating that ethical attributes such as trustworthiness, compassion, honesty, competence, patience and accountability are not merely personal virtues but professional necessities (Botwe et al., 2016; Ochonma et al., 2015; Radzi, 2018; Zainuddin, 2018). This is particularly important for Muslim radiographers because Islamic ethics frames professional conduct as both a responsibility towards patients and an accountability before Allah, thereby giving moral and spiritual depth to contemporary radiography duties such as radiation justification, optimisation, confidentiality, patient-centred communication, and protection of dignity.

The ethical significance of radiography is especially clear in the use of ionising radiation. Medical imaging is essential to healthcare, but radiation exposure must be clinically justified and optimised because unnecessary exposure may place patients at avoidable risk. The World Health Organization (WHO, 2022) describes ethics as an essential component of radiation protection in medicine. The International Atomic Energy Agency (IAEA, 2018) explains that justification aims to prevent unnecessary radiological procedures that would expose patients to ionising radiation without sufficient benefit. The International Commission on Radiological Protection (ICRP) has also emphasised ethical values such as dignity, beneficence, non-maleficence, justice, prudence, transparency, and accountability in radiological protection (Bochud et al., 2020; Martínez & Zölzer, 2024).

Professional standards reinforce this ethical framing. The Society of Radiographers (SoR, 2025) places patient-centred care and patient safety at the centre of professional conduct. The Health and Care Professions Council (HCPC, 2024) requires practitioners to communicate appropriately, respect confidentiality, work within their knowledge and skills, minimise risk,

report safety concerns, and be open, honest, and candid when something has gone wrong. These expectations are directly relevant to radiographic tasks such as patient positioning, consent communication, image acquisition, dose optimisation, image confidentiality, incident reporting, and professional escalation.

For Muslim radiographers, professional ethics may also be shaped by Islamic moral concepts derived from the Qur'an and authentic Sunnah. These values can guide how radiographers communicate with patients, protect bodily privacy, maintain confidentiality, justify exposure, avoid unnecessary repeats, report errors and treat vulnerable patients with dignity. Existing literature has described broad conceptual alignment between Islamic ethics and contemporary radiography or radiation-protection standards, particularly in relation to responsibility, justice, beneficence, non-maleficence, radiation justification, optimisation, and patient safety (Bohang & Sohaimi, 2023; Radzi, 2018; Ruzlan & Zainuddin, 2018; Sharip et al., 2022a, 2022b, 2024; Zainuddin, 2017, 2018). However, this literature remains scattered across studies on *maqasid al-shari'ah*, Islamic personality, radiation protection culture, medical imaging professionalism, confidentiality, consent, and curriculum integration. Much of the work also remains conceptual, with limited empirical validation and limited translation into concise practice-oriented ethical attributes for Muslim radiographers.

Therefore, the gap addressed in this review is not the absence of alignment between Islamic ethics and radiography ethics. Rather, the gap lies in the need to consolidate Qur'an Sunnah-based ethical attributes and map them clearly onto contemporary radiography standards and daily radiographic tasks. This integrative review aims to identify and synthesise the ethical attributes of a Muslim radiographer based on the Qur'an, authentic Sunnah, and contemporary radiography literature, and to discuss their relevance to professional radiography ethics and daily medical imaging practice.

Methodology

This study adopted an integrative review design with narrative synthesis to examine the ethical attributes of a Muslim radiographer based on Islamic normative sources, professional standards, and contemporary radiography literature. An integrative review was appropriate because the study synthesised heterogeneous sources, including Qur'anic verses, authentic Prophetic traditions, professional guidelines, radiation protection standards; and scholarly literature on radiography ethics, Islamic medical ethics, patient-centred care, confidentiality, informed consent and radiation safety. Integrative reviews are suitable for combining theoretical, empirical, conceptual, professional, and policy-oriented sources to generate a broader understanding of complex healthcare issues (Torraco, 2005; Whittemore & Knafl, 2005). Since the review was concept-driven rather than intervention-driven, narrative synthesis was used to organise, compare, and interpret findings across religious, professional, and clinical sources (Popay et al., 2006; Snyder, 2019).

Data extraction focused on three domains. First, Islamic normative sources were reviewed to identify ethical concepts relevant to professional conduct, with Qur'anic sources cited by surah and ayah, and Sunnah operationalised through selected authentic hadith mainly from *Sahih al-Bukhari* and *Sahih Muslim*. Second, professional standards and guidelines were reviewed to extract contemporary ethical domains such as patient safety, dignity, confidentiality, competence, accountability, justification, optimisation, and dose management. Third, contemporary radiography and medical imaging literature was reviewed to identify recurring themes relating to radiation protection culture, patient-centred communication, informed

consent, confidentiality, Islamic personality, curriculum integration, and ethical challenges. The extracted concepts were then synthesised narratively by grouping Islamic ethical concepts according to their Qur'anic and Prophetic foundations, mapping them against contemporary radiography ethical domains, and interpreting their relevance to daily medical imaging practice.

Results

The reviewed literature collectively suggests that Islamic ethics aligns conceptually with contemporary radiography ethics, especially around beneficence, non-maleficence, justice, responsibility, preservation of life, confidentiality, patient dignity, and professional accountability. Islamic values are repeatedly linked to radiation protection, patient-centred care, professional integrity, and ethical compliance (Bohang & Sohaimi, 2023; Radzi, 2018; Ruzlan & Zainuddin, 2018; Sharip et al., 2022a, 2022b, 2024; Zainuddin, 2017, 2018). Table 1 presents the ethical attributes identified in this review. It traces each attribute to its Islamic textual origin, reviewed literature support and contemporary radiography alignment.

Table 1 : Ethical Attributes of a Muslim Radiographer

Ethical attribute	Islamic textual origin	Reviewed literature support	Radiography alignment
Amanah / trustworthiness	Quran 4:58; <i>Sahih al-Bukhari</i> , Hadith 6095: betrayal of trust is a sign of hypocrisy.	<i>Amanah</i> is repeatedly identified as central to Muslim healthcare and radiography professionalism (Ruzlan & Zainuddin, 2018; Sharip et al., 2024).	Confidentiality, responsibility, patient safety, accountability (HCPC, 2024; SoR, 2025).
Ihsan / excellence	Quran 16:90; <i>Sahih Muslim</i> , Hadith 1955a: Allah has prescribed excellence in all things.	<i>Ihsan</i> and Islamic spirituality are linked to ethical excellence and professional motivation (Zainuddin, 2017, 2018).	Competence, Continuous Professional Development (CPD), quality assurance, optimisation (HCPC, 2024; IAEA, 2018).
Hifz al-nafs / preservation of life	Quran 5:32; Surah al-Baqarah 2:195; <i>Sahih al-Bukhari</i> , Hadith 10: a Muslim is one from whose tongue and hand others are safe.	<i>Maqasid al-shari'ah</i> is aligned with radiation protection, especially justification, optimisation, and dose limitation (Bohang & Sohaimi, 2023; Radzi, 2018).	Non-maleficence, justification, optimisation, dose management, safety culture (Bochud et al., 2020; Martínez & Zölzer, 2024).
Justice / 'Adl	Quran 4:135; Quran 5:8.	Justice is a shared value between Islamic bioethics and contemporary biomedical ethics (Mustafa, 2014; Hasan et al., 2025; Shah & Randhawa, 2024).	Equity, non-discrimination and impartial care (HCPC, 2024).
Dignity and privacy / <i>Haya'</i>	Quran 24:27–31; <i>Sahih al-Bukhari</i> , Hadith 6117 on modesty; <i>Sahih Muslim</i> , Hadith 338a on bodily privacy.	Islamic confidentiality and privacy literature emphasises dignity, harm avoidance, and protection from unjustified disclosure (Muhsin, 2021, 2023).	Privacy, confidentiality, professional boundaries, dignity (HCPC, 2024; SoR, 2025).
Compassion / <i>Rahmah</i>	Quran 21:107; <i>Sahih al-Bukhari</i> , Hadith 7376 on mercy.	Prophetic soft skills such as compassion, trust, respect, and patience are linked to patient-centred care (Soe et al., 2025; Botwe et al., 2016; Ochonma et al., 2015).	Empathy, patient-centred care, respectful communication (Botwe et al., 2016; Ochonma et al., 2015).

Truthfulness / Sidiq	Quran 9:119; <i>Sahih al-Bukhari</i> , Hadith 6094 on truthfulness.	Honesty is linked to professional integrity, transparency, and accountability in healthcare ethics (Zin et al., 2024).	Honest communication, accurate documentation, open disclosure (HCPC, 2024).
Knowledge and competence / 'Ilm	Quran 17:36; <i>Sahih Muslim</i> , Hadith 2699a supports seeking knowledge and helping others.	Radiography literature treats competence, lifelong learning, and ethical decision-making as professional duties (Makanjee & Engel-Hills, 2018; Reitan et al., 2024; Zölzer et al., 2022).	Evidence-based practice, competence, CPD and protocol adherence (HCPC, 2023; 2024).
Patience / Sabr	Quran 2:153; <i>Sahih al-Bukhari</i> , Hadith 1469 on patience.	Patience is part of Prophetic soft skills and patient-centred communication (Soe et al., 2025; Botwe et al., 2016; Ochonma et al., 2015).	Professional emotional regulation and respectful communication (Botwe et al., 2016; Ochonma et al., 2015).
Sincerity / Ikhlas	Quran 98:5; <i>Sahih al-Bukhari</i> , Hadith 1: actions are judged by intentions.	Islamic personality models identify sincerity, humility, gratitude, and spiritual motivation as relevant to ethical compliance among Muslim radiographers (Sharip et al., 2022a, 2022b, 2024).	Professional integrity and accountability (HCPC, 2024).

Discussion

This integrative review demonstrates that the ethical attributes of a Muslim radiographer can be derived from Qur'anic and Prophetic ethical principles and meaningfully aligned with contemporary radiography ethics. However, for a Muslim radiographer, this alignment should not be understood merely as a comparison between religious values and professional standards. Rather, it reflects a deeper moral relationship between servitude to Allah, responsibility towards patients, and professional accountability in the use of medical imaging technology. The reviewed literature indicates that Islamic ethical principles have already been conceptually linked with radiation protection, medical imaging professionalism, Islamic personality, patient-centred care, and curriculum integration (Bohang & Sohaimi, 2023; Radzi, 2018; Ruzlan & Zainuddin, 2018; Sharip et al., 2022a, 2022b, 2024; Zainuddin, 2017, 2018). Nevertheless, much of this work remains conceptual, with limited empirical validation and limited translation into daily radiographic conduct.

Amanah / Trustworthiness

One of the most important findings of this review is that the ethical identity of a Muslim radiographer can be understood through the concept of *amanah*. The Qur'an commands believers to render trusts to whom they are due and to judge with justice (Qur'an 4:58). The Prophet Muhammad (p.b.u.h) also warned that betrayal of trust is a sign of hypocrisy (*Sahih al-Bukhari*, Hadith 6095). In radiography, this trust is not abstract. It includes the patient's body, clinical information, privacy, radiation exposure, image records, equipment, and the professional authority to perform an imaging procedure.

From an Islamic perspective, the radiographer is therefore not merely a technical operator. The radiographer is a trustee. Poor patient identification, careless positioning, avoidable repeat exposure, unauthorised access to images, breach of confidentiality, or inaccurate documentation are not only professional weaknesses; they may also represent failures in *amanah*. This interpretation is consistent with studies that identify *amanah* as central to Muslim healthcare professionalism and medical imaging ethics (Ruzlan & Zainuddin, 2018; Sharip et al., 2022a,

2022b, 2024). The daily practical application of *amanah* can be seen in careful patient identification, protection of Picture Archiving and Communication System (PACS) images, accurate exposure records, responsible equipment use, and confidentiality. These applications are supported by professional standards requiring practitioners to respect confidentiality, maintain accurate records, work within competence, report safety concerns, and justify public trust in the profession (HCPC, 2024; SoR, 2025). Thus, *amanah* connects faith, professional responsibility, patient safety, and medical imaging governance.

Ihsan and Excellence

The Qur'an commands justice and *ihsan* (Qur'an 16:90), while the Prophet Muhammad (p.b.u.h) stated that Allah has prescribed excellence in all things (*Sahih Muslim*, Hadith 1955a). In radiography, *ihsan* means more than producing a technically acceptable image. It requires excellence in the entire imaging encounter: preparation, communication, positioning, radiation protection, patient comfort, image quality, documentation, and professional follow-up. This is significant because medical imaging is often evaluated mainly through technical outcomes. Yet Islamic ethics broadens the meaning of excellence. A radiographic examination may produce a diagnostic image but still fall short of *ihsan* if the patient was not properly informed, was unnecessarily exposed, was poorly draped, or had their privacy compromised. Therefore, *ihsan* integrates technical quality with moral quality.

The daily application of *ihsan* includes maintaining competence, engaging in continuing professional development, following protocols, producing diagnostic-quality images, reducing unnecessary repeat exposures, and communicating respectfully with patients. Contemporary radiography ethics supports this view by treating diagnostic radiography as a complex ethical encounter involving patient interaction, technology, teamwork, radiation protection, and professional judgement (Makanjee & Engel-Hills, 2018; Reitan et al., 2024; Zölzer et al., 2022). Professional standards similarly require practitioners to keep knowledge and skills up to date and to practise safely and effectively within their scope of competence (HCPC, 2024; SoR, 2025). From an Islamic perspective, technical competence is therefore not separate from spirituality; it is part of fulfilling one's professional trust properly.

Hifz al-Nafs / Preservation of Life

Radiation protection is the strongest area where Islamic ethics and contemporary radiography ethics converge. Contemporary radiation protection is built on justification, optimisation, and dose management. These principles are ethically grounded because ionising radiation should not be used unless the clinical benefit outweighs the risk (Bochud et al., 2020; IAEA, 2018; Martínez & Zölzer, 2024). From an Islamic perspective, this aligns closely with *hifz al-nafs*, the preservation of life, which is one of the central objectives of *maqasid al-shari'ah*.

The Qur'an gives great moral weight to the preservation of life (Qur'an 5:32) and warns against causing destruction to oneself (Qur'an 2:195). The Prophet Muhammad (p.b.u.h) also described a Muslim as one from whose tongue and hand others are safe (*Sahih al-Bukhari*, Hadith 10). Although this hadith is broad, its ethical meaning is directly relevant to radiography. A Muslim professional should not be a source of avoidable harm, whether physical, emotional, informational, or radiation-related.

The daily radiographic application of *hifz al-nafs* includes checking whether an examination is justified, avoiding unnecessary repeat imaging, optimising exposure parameters, clarifying doubtful referrals, communicating radiation-related information appropriately, and

participating in departmental radiation safety culture. These applications are supported by Bohang and Sohaimi (2023), who aligned CT radiation protection with *maqasid al-shari'ah*, and by Radzi (2018), who argued that Islamic perspectives may strengthen radiation protection culture among Muslim diagnostic radiographers. They are also consistent with radiological protection ethics, which emphasise beneficence, non-maleficence, dignity, justice, prudence, transparency, and accountability (Bochud et al., 2020; Martínez & Zölzer, 2024).

However, Islamic values alone do not automatically produce safe practice. The literature identifies barriers such as low awareness, inconsistent training, workload pressure, weak institutional support, and non-compliance with radiation protection protocols (Fahssi et al., 2024; Rowili et al., 2024; Zainuddin, 2018). Therefore, *hifz al-nafs* must be translated into training, protocols, reminders, dose audits, referral escalation pathways, and practical safety culture.

Justice / 'Adl

Justice is a core Qur'anic command. The Qur'an instructs believers to stand firmly for justice even against themselves or those close to them (Qur'an 4:135), and not to allow hatred or bias to lead to injustice (Qur'an 5:8). In radiography, justice requires fair access, non-discrimination, equitable communication, and impartial treatment regardless of religion, ethnicity, gender, disability, age, socioeconomic status, or diagnosis. Justice also relates to consent and autonomy. Western biomedical ethics often emphasises individual autonomy, while Islamic medical ethics tends to understand autonomy within a relational and theocentric framework that includes family, welfare, moral accountability, and communal responsibility (Hasan et al., 2025; Mustafa, 2014; Naji et al., 2017; Packer, 2012). This does not mean Islamic ethics rejects patient autonomy. Rather, it means that patient decision-making may be shaped by family involvement, religious concerns, modesty, and perceived benefit or harm.

In daily radiographic practice, patients should still be informed about what the examination involves, why positioning is required, whether radiation is involved, and how privacy will be protected. At the same time, radiographers should be sensitive to patients who wish to involve family members or who have modesty-related concerns. The critical point is balance. Islamic relational autonomy should not be used to bypass the patient's own understanding or dignity. The patient remains the person whose body is being imaged. Therefore, *amanah*, *sidq*, *rahmah*, and *'ilm* require truthful, compassionate, and understandable communication

Dignity and Privacy / Haya'

Radiography often involves bodily exposure, physical positioning, close contact, and patient vulnerability. Islamic teachings on modesty and privacy are therefore directly relevant. The Qur'an instructs believers regarding permission, lowering the gaze, and guarding modesty (Qur'an 24:27–31). The Prophet Muhammad (p.b.u.h) prohibited looking at another person's private parts (*Sahih Muslim*, Hadith 338a) and taught that modesty brings good (*Sahih al-Bukhari*, Hadith 6117). In radiography, *haya'* should not be understood narrowly as personal shyness. It is an ethical principle of dignity. It requires radiographers to minimise unnecessary bodily exposure, use proper draping, provide privacy during changing, explain positioning before touching, avoid unnecessary viewing and use chaperones or same-gender assistance where appropriate and feasible.

The practical application of *haya'* is supported by Islamic confidentiality literature, which treats privacy and harm avoidance as serious juristic concerns (Muhsin, 2021, 2023). It is also

consistent with professional expectations on confidentiality, dignity, professional boundaries, and respectful patient care (HCPC, 2024; SoR, 2025). In modern medical imaging, *haya* ' also applies to digital privacy. Patient images are not ordinary files. They may reveal anatomy, disease, trauma, pregnancy status, or other sensitive information. Thus, *amanah* and *haya* ' require careful handling of PACS access, teaching images, mobile-device sharing, anonymisation, and informal case discussion. This makes Islamic privacy ethics highly relevant to contemporary digital imaging environments.

Compassion / Rahmah

Compassion, or *rahmah*, is a distinct ethical attribute because it concerns how the radiographer responds to the patient's vulnerability. The Qur'an describes the Prophet Muhammad (p.b.u.h.) as "a mercy to the worlds" (Qur'an 21:107), and the Prophet taught that mercy towards people is morally required (*Sahih al-Bukhari*, Hadith 7376). In radiography, *rahmah* is applied when the radiographer recognises that a short imaging encounter may still be frightening, painful, embarrassing, or emotionally significant for the patient. Its daily application includes greeting the patient respectfully, introducing oneself, explaining the purpose of the examination, checking pain or mobility limitations, asking permission before touching, using gentle language, preserving modesty, and responding calmly to fear or embarrassment. This is especially important in paediatric, geriatric, trauma, emergency, disability-related, mammography, mobile, and intimate imaging situations.

Patient-centred radiography studies show that patients value respectful communication, privacy, professional conduct, and feeling physically and psychologically comfortable during imaging (Botwe et al., 2016; Ochonma et al., 2015; Pollard et al., 2019). Radiographers also recognise patient information as important for preparation, radiation protection, and patient understanding (Tohidnia et al., 2022). Therefore, *rahmah* functions as a practical communication competency, not merely a personal virtue within the imaging room and wider patient pathway.

Truthfulness / Sidq

Truthfulness is another major attribute identified in this review. The Qur'an commands believers to be with the truthful (Qur'an 9:119), and the Prophet Muhammad (p.b.u.h.) taught that truthfulness leads to righteousness (*Sahih al-Bukhari*, Hadith 6094). In radiography, *sidq* applies to patient explanation, image labelling, exposure documentation, incident reporting, and error disclosure. This is important because imaging errors can have serious consequences. Wrong-patient imaging, wrong-side imaging, repeat exposure, pregnancy-screening errors, confidentiality breaches, or incorrect labelling may affect diagnosis, patient safety, and legal accountability. From an Islamic perspective, concealing such errors contradicts *sidq* and *amanah*. From a professional perspective, honesty and accurate documentation are required by contemporary professional standards (HCPC, 2024; SoR, 2025).

The daily application of *sidq* therefore includes explaining procedures honestly, documenting accurately, labelling images correctly, recording exposure or incident details properly, and reporting errors through appropriate institutional channels. Literature on Muslim professional integrity links religiosity, honesty, and transparency with ethical conduct (Zin et al., 2024), while radiography ethics literature emphasises professionalism, patient safety, and accountability in clinical imaging encounters (Horta et al., 2023; Makanjee & Engel-Hills, 2018). Thus, *sidq* strengthens the bridge between professional accountability and spiritual accountability.

Knowledge and Competence / 'Ilm

Islamic ethics places high value on knowledge. The Qur'an warns against acting without knowledge and links the faculties of hearing, sight, and the heart to accountability (Qur'an 17:36). The Prophet Muhammad (p.b.u.h) also praised seeking knowledge and helping others (*Sahih Muslim*, Hadith 2699a). In radiography, 'ilm is directly linked to professional competence. A Muslim radiographer must therefore maintain knowledge of anatomy, imaging protocols, radiation safety, patient preparation, pregnancy screening, contrast precautions, communication requirements, and escalation pathways. Good intention alone is insufficient if practice is unsafe or incompetent. This point is important because it corrects a possible misunderstanding. Islamic ethics is not merely about being kind or religiously observant; it also requires technical competence.

The daily application of 'ilm includes maintaining CPD, following departmental protocols, recognising limits of competence, seeking clarification when referrals are unclear, and escalating unjustified or unsafe requests. Contemporary radiography literature treats competence, lifelong learning, justification, and professional judgement as ethical responsibilities (Makanjee & Engel-Hills, 2018; Reitan et al., 2024; Zölzer et al., 2022). Therefore, 'ilm bridges Islamic ethics and professional radiography standards. It also supports the argument that CPD is not only an administrative requirement but part of moral responsibility.

Patience / Sabr

Patience, or *sabr*, is a separate ethical attribute because it concerns emotional regulation and steadiness when radiographic work becomes difficult. The Qur'an commands believers to seek help through patience and prayer (Qur'an 2:153), while the Prophet Muhammad (p.b.u.h.) described patience as a great gift (*Sahih al-Bukhari*, Hadith 1469). In radiography, *sabr* is required when patients are anxious, confused, in pain, frightened, slow to move, unable to cooperate, or repeatedly asking questions. Its daily application includes giving clear repeated instructions, allowing extra time for elderly or disabled patients, remaining calm with distressed children, avoiding irritation during trauma or emergency imaging, and maintaining respectful tone despite workload pressure.

Sabr also supports safe practice because rushed or impatient communication may compromise positioning, consent, image quality, and patient dignity. Research on radiographer-patient communication shows that clear explanation, gentle manner, and attention to physical and psychological comfort help patients feel confident and at ease (Pollard et al., 2019). Ethical and professional conduct also influences patient satisfaction with radiological examinations (Ochonma et al., 2015). Thus, *sabr* is not passive tolerance. It is disciplined professionalism that enables the radiographer to remain calm, compassionate, and safe under pressure while still preserving accuracy, consent, and radiation safety throughout.

Sincerity / Ikhlas

Sincerity, or *ikhlas*, is an important ethical attribute because much radiographic work occurs when the radiographer is not directly observed. The Qur'an commands sincere devotion to Allah (Qur'an 98:5), and the Prophet Muhammad (p.b.u.h.) taught that actions are judged by intentions (*Sahih al-Bukhari*, Hadith 1). In radiography, *ikhlas* strengthens internal moral accountability when the radiographer is alone with a patient, handling confidential images, selecting exposure parameters, documenting incidents, deciding whether to repeat an image or deciding whether to escalate a doubtful referral.

In daily practice, *ikhlas* requires the radiographer to maintain professionalism even when unsupervised. It includes protecting patient privacy when a breach is unlikely to be detected, avoiding shortcuts during busy shifts, documenting honestly, treating every patient with respect and complying with radiation safety principles even when no one is checking. Islamic personality models identify sincerity, humility, gratitude and spiritual motivation as relevant to ethical compliance among Muslim radiographers (Sharip et al., 2022a, 2022b, 2024). This aligns with professional standards requiring patient-centred care, patient safety, honesty, confidentiality, escalation of concerns and conduct that justifies public trust (SoR, 2025). *Ikhlas* may support consistent professionalism, but it must still be supported by protocols, supervision and audit.

Significance for Medical Imaging Practice

The significance of this review for medical imaging practice lies first in strengthening radiation protection culture. Contemporary radiological protection emphasises justification, optimisation, dose management, dignity, beneficence, non-maleficence, prudence, transparency, and accountability (Bochud et al., 2020; IAEA, 2018; Martínez & Zölzer, 2024; Vano, 2021). The attributes identified in this review deepen these principles: *hifz al-nafs* frames radiation protection as preservation of life and prevention of avoidable harm, while *amanah* frames the authority to expose patients to radiation as a spiritual trust (Bohang & Sohaimi, 2023; Radzi, 2018; Zainuddin, 2018).

Second, the synthesis supports patient-centred radiography. Imaging encounters may be brief, yet patients may be anxious, embarrassed, in pain, immobilised, or uncertain about results. Patient-perspective studies show that communication, respect, privacy, consent, and professional behaviour shape radiological experience (Botwe et al., 2016; Ochonma et al., 2015). Accordingly, *rahmah* promotes gentle communication, *sabr* supports calmness with distressed patients, *haya'* strengthens modesty-sensitive positioning and draping, and *sidq* requires truthful explanation (Soe et al., 2025; Tohidnia et al., 2022).

Third, the review highlights confidentiality and digital image responsibility. Modern imaging depends on PACS, image transfer, teaching files, anonymisation, audit, and artificial intelligence. Islamic confidentiality literature treats privacy and harm prevention as moral duties (Muhsin, 2021, 2023). Therefore, *amanah*, *haya'*, *sidq*, and '*ilm*' are relevant to digital professionalism, responsible image access, mobile sharing, anonymisation, and artificial intelligence (AI)-related transparency (Aldhafeeri, 2024; Alqarni et al., 2024; Horta et al., 2023; Makanjee & Engel-Hills, 2018).

Finally, these attributes have educational and institutional significance. They can inform curricula, CPD, standard operating procedures (SOPs), ethical audit, chaperone policies, confidentiality rules, safety protocols, and escalation pathways. However, implementation requires validated tools, training, resources, supervision, and governance (Chinene, 2024; Fahssi et al., 2024; Rowili et al., 2024; Sharip et al., 2022a, 2022b, 2024; Zainuddin & Radzi, 2013). Islamic ethics therefore strengthens, rather than replaces, professional clinical governance.

Limitations and Future Research

This review has several limitations. First, it is an integrative review that uses narrative synthesis. Therefore, it does not claim to cover all relevant literature exhaustively. Second, the ethical synthesis proposed in this review remains conceptual. It has not yet been validated through

empirical research, expert consensus, or clinical implementation. Third, much of the available literature is still conceptual, region-specific, or based on limited empirical data. Fourth, this review focuses mainly on Islamic ethical principles relevant to Muslim radiographers. It does not attempt to resolve all jurisprudential differences across Islamic schools of thought. Future research should examine whether Qur'an-Sunnah-based ethics education improves radiographers' communication, informed consent practice, confidentiality behaviour, radiation protection compliance, ethical escalation, and patient experience. Further studies should also develop validated assessment tools for Islamic ethical attributes in radiography. Patient perspectives on the ethical conduct of Muslim radiographers should also be explored. Finally, future research may examine Islamic ethical responses to emerging technologies, especially artificial intelligence in medical imaging.

Conclusion

This integrative review synthesised Islamic normative sources, professional standards and radiography literature to identify ethical attributes of Muslim radiographers. Ten attributes emerged which are *amanah*, *ihsan*, *hifz al-nafs*, justice, dignity and privacy, compassion, truthfulness, knowledge and competence, patience and sincerity. These correspond with contemporary principles of beneficence, non-maleficence, autonomy, confidentiality, accountability, professionalism, justification, optimisation and dose management. Islamic ethics does not replace professional standards; it enriches them by grounding practice in moral accountability, spiritual consciousness, dignity and harm prevention. The synthesis may support curriculum design, CPD, policy, audit and empirical research toward safer, compassionate, patient-centred and accountable radiography practice overall.

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