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Development of Medical Imaging: Islamic personality model

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Abstract

Integrating ethics into radiation protection via an Islamic approach demands tailored assessment tools to evaluate radiographers' adherence to Islamic ethical standards. Developing such tools for medical imaging bridges a crucial gap, fostering understanding of how Islamic values shape ethical decisions in this field. A theoretical foundation is vital for the validity and applicability of these assessments, drawing from Maqasid Shariah, Muslim Professional Traits, and Al-Ghazali's Theory of Islamic Personality. These frameworks promote ethical behaviour by emphasizing harm reduction, wellbeing promotion, and moral qualities rooted in Islamic teachings. Aligning practice with these principles ensures ethical excellence in radiation protection within the context of Islamic culture.

Keywords: Ethics; Radiation Protection; Islamic Personality; Medical Imaging

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1.0 Introduction

Integrating ethics into radiation protection practice through an Islamic personality approach necessitates assessment tools specifically designed to systematically evaluate the commitment of radiographers to Islamic ethical standards. To address this critical gap, the development of Islamic personality tests tailored to the unique dynamics of the medical imaging field and radiation protection practice holds significant importance. In developing and validating an Islamic Personality assessment tool specific to the field of Medical Imaging, the underpinning theory holds paramount importance. This theory serves as the foundational framework guiding the entire process, encompassing item generation, scale construction, and the subsequent interpretation of results (Kyriazos and Stalikas, 2018). Moreover, it is pivotal in ensuring a clear and quantifiable definition of the Islamic personality construct, mainly when dealing with psychological attributes that may not be directly observable (Kyriazos and Stalikas, 2018). Grounding the assessment tool in a solid theoretical foundation not only enhances the validity and reliability of the instrument but also facilitates its applicability within the context of radiation protection and ethical practices in Medical Imaging. Integrating ethics into radiation protection practice through the Islamic Personality approach involves drawing upon several foundational theories and concepts. The integration of these theories and concepts serves as a comprehensive framework for promoting ethical behaviour and decision-making within the field of radiation protection.

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2.0 Literature Review

In the Islamic context, the term 'Islamic personality' or 'syakhsyah' refers to personal characteristics that align with Islamic teachings and values (Nuriman et al., 2023). As Islamic personality is shaped by the Islamic ethics, thus it is also rooted in the teachings of Quran and Hadith (Wahab & Masron, 2020). Islamic personality is seen as an all-encompassing way of life that connects every aspect of behaviour, attitude, and emotion to the teaching of Islam (Tekke & Ismail, 2016). In the Holy Quran, an all-encompassing way of life is described as "deen" (Ali-Imran 3:19), which means that Islam is not just a religion but a comprehension system that guides all aspects of life, including personal, social, medical, political, economic and all aspects of life. Thus, it is essential to recognize that adherence to radiation protection measures among radiographers in the medical imaging field also falls within the framework of Islamic principles, emphasizing the holistic nature of Islamic guidance.

The concept of assessment in Islam is often discussed in relation to the practice of *muhasabah*, which is a form of self-examination and accountability before God (Noor et al., 2022). *Muhasabah* is derived from the Arabic word "haasaba," meaning to calculate or count, and it is a process of evaluating one's actions and intentions to ensure alignment with Islamic teachings (Arsad et al., 2018). In the Holy Quran from Surah Al-Hashr (59:18), it is emphasized that believers should fear Allah, examine their actions and be conscious of their deeds as preparation for the hereafter. This self-assessment and accountability are crucial because, as Surah Al-Taghabun (64:9) reveals, there will be a Day of judgment when individuals' beliefs and deeds will determine their fate, with those who believed and acted righteously rewarded with gardens of pleasure, highlighting the direct consequence of self-assessment and accountability in the Hereafter.

Islamic personality tests are often tailored to specific demographics or professional roles, including education, counselling, mental health research and professional development. For example, Islamic personality tests which focus on moral and ethical assessment for students and youths, including Inventori Penghayatan Akhlak Pelajar (Ahmad, 2006), Moral Value Inventory for Muslim Adolescence (MVIMA) (Abdullah et al. 2010), Instrumen Pentaksiran Akhlak Berasaskan Rakan Sebaya (IPAM-RS) (Safar, 2012), Moral Character of Muslim Personality (MCMP) (Al-Ammar et al., 2012), Instrumen Penilaian Akhlak Pelajar IPTA (IMPAK) (Abdul Latif, 2013), and Integrative Islamic Personality Inventory (IIPi) (Ismail & Tekke, 2015). While Islamic personality tests tailored for unique professional development and competency are Instrumen Penilaian Kendiri Akhlak Guru Pendidikan Islam (INSPI) (Salleh, 2018) for teachers and Islamic counsellors' personality competency scale (Rahman, Rosidah & Tamam, 2023) for counsellor. These tests contain constructs and dimensions that are relevant to their age and life stage as students and youth and their professional background, such as teachers and counsellors.

Some tests are developed to fill gaps in existing research gaps or address specific research objectives. For instance, the "Psychological Measure of Islamic Religiousness (PMIR) (Abu Raiya et al., 2008) aims to contribute to empirical studies on Muslims and mental health research. While the Islamic Behavioral Religiosity Scale (IBRS) (Abou-Youssef et al., 2011) is used by marketers to measure the degree of customers' religiosity and its potential association with customer behaviour and as a predictor for purchase designs. The unique characteristics and developmental stages of the target for each test significantly influence the constructs and dimensions that are assessed.

Tests focusing on religious beliefs and practices, such as the Muslim Religiosity-Personality Inventory (MRPI) (Krauss et al., 2005) and Ummatic Personality Inventory (UPI) (Othman, 2011), may have constructs related to Islamic beliefs, religious duties, and ethical principles. These constructs enable a comprehensive evaluation of individuals' religious commitment and personal development within an Islamic context, providing valuable insights for researchers and practitioners.

Aligned with the principle of muhasabah, the Islamic Personality Scale (IPS) stands as a significant assessment tool designed to measure an individual's adherence to Islamic ethical and moral values (Farmawati & Hidayati, 2019). The IPS enables individuals to conduct self-assessments, facilitating reflection on their actions and choices. This introspection aids in recognizing areas requiring enhancement to better align with Islamic principles. The absence of the IPS would hinder the systematic evaluation of professionals' commitment to Islamic ethical standards and their capacity to foster ethical behaviour rooted in Islamic teachings (Jan & Shafiq, 2021; Rahman et al., 2023). Without assessment, individuals and organizations may remain unaware of the extent to which they adhere to or deviate from Islamic ethical principles. This lack of awareness can perpetuate unethical behaviours.

The utilization of existing Islamic personality tests aids in comprehending the connections between Islamic personality factors and real-life activities. However, despite their applicability in various contexts, there needs to be more guidance on addressing the Islamic personality tools in radiation protection practices among radiographers. The field of medical imaging, being distinct from pure Medicine, necessitates a tailored approach to Islamic personality assessment tools that aligns with its unique characteristics. Consequently, incorporating and customizing the concept of Islamic personality for application in the medical imaging domain could be helpful in the effort of to integrate ethics into radiation protection practice.

3.0 Methodology

The process of theoretical underpinning during item development in research methodology is crucial for ensuring the validity and relevance of assessment tools or instruments. By grounding the development of these tools in established theoretical frameworks, researchers can ensure that the items or questions included in the instrument align with the theoretical concepts being explored. In the context of developing an Islamic personality assessment tool for radiographers, the theoretical underpinning involves selecting relevant theories that provide insight into ethical behaviour and personality traits within an Islamic context.

The first step in this process is identifying the theoretical frameworks pertinent to the research topic or objectives. In this study, three key theoretical frameworks have been selected: the theory of Maqasid Shariah, Muslim Professional Traits, and Al-Ghazali's Theory of

Islamic Personality. These frameworks offer a rich theoretical basis for understanding the ethical dimensions and personality traits relevant to radiographers practising within an Islamic framework.

Once the theoretical frameworks have been identified, the next step is to conceptualize the key constructs or concepts within those frameworks. For instance, the theory of Maqasid Shariah provides a comprehensive framework for understanding the higher objectives and principles of Islamic law. It emphasizes preserving essential human interests, such as life, religion, intellect, progeny, and wealth. In the context of developing an Islamic personality assessment tool for radiographers, this framework can guide the identification of personality traits that align with these overarching objectives.

Similarly, the concept of Muslim Professional Traits focuses on identifying professional attributes relevant to Muslim professionals within specific fields, such as medical imaging. These traits encompass moral and psychological qualities rooted in Islamic beliefs and teachings, including trustworthiness, honesty, compassion, and accountability. By incorporating these traits into the assessment tool, researchers can evaluate the extent to which radiographers exhibit these qualities in their professional practice.

Al-Ghazali's Theory of Islamic Personality offers further insights into the development of an Islamic personality assessment tool by highlighting the importance of self-reflection, spiritual growth, and adherence to Islamic values. This framework emphasizes cultivating virtues such as sincerity, humility, and gratitude, which are integral to developing a holistic Islamic personality.

In summary, theoretical underpinning plays a vital role in guiding the development of assessment tools for researching Islamic personality traits among radiographers. By grounding the development process in established theoretical frameworks such as the theory of Maqasid Shariah, Muslim Professional Traits, and Al-Ghazali's Theory of Islamic Personality, researchers can ensure that the resulting assessment tool is valid, relevant and aligned with the theoretical concepts being explored.

4.0 Findings and Discussion

4.1 Maqasid Shariah

The theory of Maqasid al-Shariah refers to the higher objectives of Islamic law set out to ensure human welfare (Abu Talib and Noor Naemah, 2016). The term "Maqasid" is derived from the Arabic root "Qasd," which means "purpose," "objective," or "end." Thus, Maqasid al-Shariah can be understood as the objectives or the ends of Shariah (Abu Talib and Noor Naemah, 2016). The objective of shari'ah is to protect the well-being of people irrespective of gender and without any discrimination as to sex, colour, tribe and religion; and it lies in the safeguarding of their faith (deen), life (nafs), intellect (aql), posterity (nasl) and their wealth (mal) (Abolaji and Muda, 2018). In healthcare, the ultimate aim of Maqasid al-Shariah is "harm reduction" and "promotion of wellbeing" (Hashi, 2019).

The development of Maqasid al-Shariah can be traced back to early Islamic thought, but it was in the works of the 11th-century scholar Imam Al-Ghazali, that the theory was extensively developed. Al-Ghazali emphasized that the Shariah aims primarily at securing the welfare of humans in this life and the hereafter. This welfare encompasses the protection and preservation of the five essentials. Following Al-Ghazali, other scholars such as Al-Izz ibn Abd al-Salam and Ibn Qayyim Al-Jawziyya further elaborated on the concept, introducing secondary and tertiary goals of Shariah which include the attainment of justice and the prevention of hardship

In the realm of radiation protection, the application of Maqasid al-Shariah crucially underpins the professional conduct of radiographers, who are tasked with managing and minimizing exposure to ionizing radiation to safeguard both patients and them from potential harm. This practice not only aligns with the Shariah objectives of preserving life and health by advocating for the minimization of harm (darar) and the maximization of benefits (maslahah) but also supports the continuous intellectual growth of radiographers. They are encouraged to stay well-informed about the best practices in radiation safety and the latest technological advancements, ensuring high standards of practice and informed decision-making in clinical settings.

Maqasid al-Shariah fosters a culture of accountability and ethical conduct, urging radiographers to consider the broader implications of their work, ensure all procedures are justified, maintain doses as low as reasonably achievable (ALARA principle), and handle ethical dilemmas with integrity. This approach emphasizes the importance of obtaining patient consent and safeguarding patient information, thus upholding the principles of transparency and avoiding deception. By integrating Maqasid al-Shariah into their practices, radiographers not only enhance the ethical framework within which they operate but also align their professional duties with their religious beliefs, promoting a comprehensive approach to healthcare where ethical excellence and patient care are paramount. This integration serves as a guiding principle that enriches the professional lives of Muslim radiographers and improves the quality of care provided to patients.

4.2 Medical Imaging Muslim Professional Personality Traits

Recognizing the absence of well-defined and specific aspects of an Islamic personality in the field of medical imaging, Ruzlan and Zainuddin (2018) identified professional attributes relevant to Muslim professionals within the Medical Imaging profession by extracting information from professional guidelines and Islamic values. These traits, integral to the Islamic Personality, emphasize moral and psychological qualities rooted in the belief in Allah and the teachings of Prophet Muhammad (Peace be upon him). Their findings encompassed seven domains and nineteen dimensions of professional traits applicable to Medical Imaging professionals. These traits, referred to as Professional Personality traits, encompass characteristics such as respect, safe practice, equality, trustworthiness, honesty, accountability, compassion, wisdom, up-to-date knowledge, competence, teamwork, self-reflection, dignity, ethical behaviour, adherence to laws and regulations, effective communication, and the continuity of knowledge and skills development. These traits are categorized into seven domains within the field of medical imaging: professionalism, patient care, technology utilization, technical skills and procedures, safety and security, research, and resource management. Utilizing these traits may be beneficial in creating a Medical

Imaging Islamic Personality Inventory to incorporate Islamic ethics into radiation protection practice. This integration of professional and Islamic values aims to provide culturally sensitive, high-quality care, contributing to the broader understanding of Islamic perspectives in healthcare.

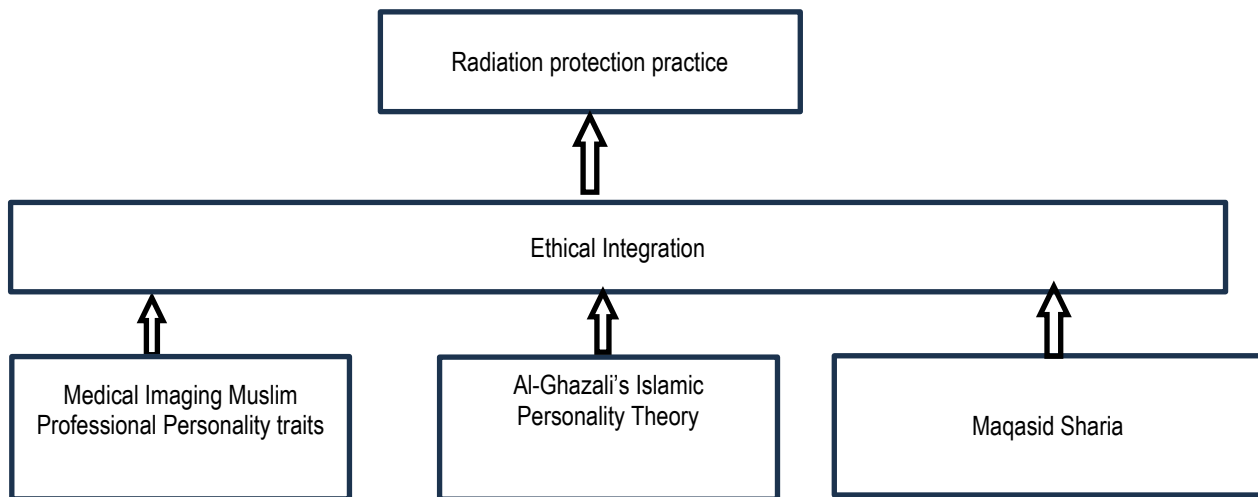


Figure 1: Theoretical Framework of Medical Imaging Islamic Personality Inventory

4.3 Al Ghazali theory of Islamic personality

Imam Al-Ghazali, a renowned Islamic scholar, has significantly contributed to the understanding of Islamic personality. He posits that a person's personality is influenced by their inner desires stemming from the heart, and that every action is closely linked to these desires (Nuriman et al., 2023). This underscores the importance of good deeds as a reflection of one's spiritual and religious values. Al-Ghazali's concept of Islamic personality revolves around the elements of the Nafs (self or ego), the Qalb (heart), the Ruh (spirit) and the 'Aql (intellect) (Nuriman et al., 2023; Allik et al., 2023). Furthermore, Al-Ghazali emphasizes that the ideal behaviour of a Muslim is based on the ethical framework of Islam, exemplified through the life of Prophet Muhammad (Thahir and Hidayat, 2020), the same as highlighted in The Holy Quran, which states that Prophet Muhammad as an exemplary role model for Muslims (Al-Ahzab 33:27).

He emphasized the impact of the spiritual state on human behaviour, perceiving personality as a combination of physical outward form and spiritual inward self (Arif, 2018). Al-Ghazali categorized the nafs (soul) into three types: al-nafs al-ammara (the commanding soul), driven by desires and inclined towards evil; al-nafs al-lawwama (the self-accusing soul), aware of its faults and in moral conflict; and al-nafs al-mutma'inna (the soul at peace), the highest spiritual state in harmony with God's will (Nuriman et al., 2023). This comprehensive view highlights the interplay between spiritual state and personality traits, shaping an individual's behaviour and moral orientation.

Al-Ghazali's Islamic personality theory can be applied to radiation protection practices among radiographers by guiding ethical behaviour and decision-making processes that align with Islamic values and principles. In the context of radiation protection, the commanding self (Al-nafs al-ammara) might push a radiographer towards actions that prioritize convenience or personal gain over patient safety. For instance, skipping safety protocols to speed up the process or neglecting proper maintenance of radiation equipment to save time or effort. By recognizing these lower impulses, radiographers can actively choose to resist them. Education and awareness training about the consequences of unethical behaviour, such as increased patient risk, can help radiographers combat this lower self.

For the element of Al-nafs al-lawwama (The Self-Accusing Self), this stage is crucial as it involves the radiographer's conscience, where they might feel guilt or moral conflict when ethical standards are not met. For example, if a radiographer realizes that they have not properly shielded a patient from radiation. In that case, this self-awareness can trigger a moral and professional response to rectify the mistake and prevent future occurrences. Encouraging a culture of self-reflection and continuous professional development can enhance this aspect. Institutions could implement regular reviews and feedback sessions where radiographers assess their work, discuss ethical dilemmas, and plan improvements in radiation safety practices.

For element of Al-nafs al-mutma'inna (The Tranquil Self), the radiographer has achieved a level of spiritual and ethical tranquility through adherence to Islamic ethical principles and professional standards. This radiographer not only follows safety protocols diligently but also advocates for patient safety and ethical practices in the workplace. Radiographers in this state can mentor others on the importance of ethical practices in radiation protection. They can lead by example, demonstrating how integrating spirituality with professional responsibilities leads to higher standards of care and personal satisfaction.

Aql, as the capacity for intellect and reason, can be cultivated through training that emphasizes critical thinking and ethical problem-solving in radiation safety. Radiographers can use their intellectual abilities to analyze and implement the best radiation protection practices, understand the implications of radiation exposure, and innovate safer procedures. Enhancing aql in radiographers can involve integrating ethical reasoning into their training curriculum. This helps them understand and apply ethical principles when faced with

decisions that could impact patient safety and care quality. Workshops and case studies on ethical dilemmas specific to radiology can sharpen their intellect and moral reasoning. Integrating these elements fosters a holistic approach to radiation protection where intellectual growth, spiritual well-being, and ethical behaviour are interconnected. This not only improves patient safety but also enhances the personal fulfilment and professional integrity of radiographers, leading to a more conscientious and motivated workforce.

4.4 Theoretical framework of development of Medical Imaging Islamic Personality Inventory

The theoretical framework depicted in Figure 1 integrates three foundational elements of Maqasid Shariah, Muslim Professional Traits, and Al-Ghazali's Theory of Islamic Personality –to foster ethical integration in radiation protection practice. This comprehensive framework views the ethical conduct of radiographers through a holistic Islamic lens, aiming to elevate both personal and professional standards in line with Islamic teachings. Central to this framework is Maqasid Shariah, which stresses the importance of safeguarding life, intellect, progeny, faith, and property, thereby ensuring that radiographers prioritize patient safety and well-being above all. This principle is aligned with Al-Ghazali's progression of the soul from the commanding self to the tranquil self, which fosters a higher ethical consciousness and self-regulation. This personal ethical evolution is critical in handling responsibilities and dilemmas in radiation protection practice. Additionally, the inclusion of Medical Imaging Muslim professional personality traits such as honesty, compassion, diligence, and accountability provides a behavioural guide that reflects Islamic values, ensuring daily activities meet high ethical standards.

By combining these elements, the framework provides a structured approach to embedding ethical considerations into every aspect of medical imaging. It ensures that radiographers are not only technically proficient but also morally and spiritually equipped to make decisions that protect and benefit patients, thereby fostering an ethical healthcare environment that resonates with the universal values of Islam. This integrated approach not only enhances compliance with radiation protection but also promotes a culture of ethical excellence in medical imaging practices. Patients receive care that is not only technically proficient but also deeply compassionate and ethically grounded, leading to enhanced patient satisfaction and trust. For radiographers, this approach enriches their careers, transforming their profession into a fulfilling life path that offers personal satisfaction and aligns with their spiritual and ethical beliefs, thereby improving their overall job satisfaction and professional fulfilment. To effectively bring these concepts into the daily practice of radiographers, they should be incorporated right from the educational curriculum so future radiographers may learn the process of making decision in radiation protection practice guided by the Islamic values, understanding the importance of protecting life and preventing harm. Thus, applying all these concepts ensure adherence to the professional obligation of radiographers and fulfilling the obligation of Muslims.

5.0 Conclusion& Recommendations

One limitation of applying this framework is that they might initially appear only relevant within Muslim settings, which could limit their broader acceptance in diverse, multicultural healthcare settings. As a recommendation, by emphasizing universal values such as integrity, compassion, and accountability, these Islamic teachings can be made more inclusive. Additionally, fostering the theoretical underpinnings for future development of an Islamic Personality Medical Imaging Scale could further advance this initiative. This proposed scale would measure how effectively radiographers integrate these ethical values into their work, particularly regarding radiation safety. Providing a tangible way to assess and enhance ethical practices across diverse healthcare settings would not only improve patient care but also raise the quality and safety of medical imaging practices.

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