



Islamic Personality in Medical Imaging Students: A Knowledge, Attitude, and Practice Study at International Islamic University Malaysia (IIUM)

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Abstract

This study examined the knowledge, attitude, and practice of the International Islamic University Malaysia Medical Imaging students towards the applications of Islamic personality in Medical imaging. The study serves to fill the gap in knowledge pertaining to the Islamic personality in the field of Medical imaging. The findings, followed by in depth discussions highlighted the areas of strength and weakness of students pertaining to the depiction of Islamic personality in the practice. The findings revealed that the students' understanding on the detailed applications of the Islamic personality in Medical imaging needs to be enhanced. Another important finding is that the students felt the need for specific guidelines on Islamic Personality Traits (IPT) applicable for Medical imaging practitioners to be drawn up. The formulation of the guidelines in the form of a conceptual framework, could pave the right direction towards the promotion, understanding and internalization of Islamic personality in the Medical imaging practice.

Keyword: Islamic personality, Medical imaging, KAP study, International Islamic University Malaysia.

Abstrak

Kajian ini mengkaji pengetahuan, sikap, dan amalan pelajar Pengimejan Perubatan di Universiti Islam Antarabangsa Malaysia terhadap aplikasi keperibadian Islam dalam perubatan pengimejan. Kajian ini bertujuan untuk mengisi jurang pengetahuan yang berkaitan dengan keperibadian Islam dalam bidang perubatan pengimejan. Penemuan ini, diikuti dengan perbincangan mendalam yang menekankan kekuatan dan kelemahan pelajar yang berkaitan yang menggambarkan keperibadian Islam dalam amalan ini. Penemuan menunjukkan bahawa pemahaman pelajar mengenai aplikasi terperinci terhadap keperibadian Islam dalam pengimejan Perubatan perlu dipertingkatkan. Satu lagi penemuan penting ialah pelajar merasakan keperluan bagi garis panduan khusus mengenai Sifat Keperibadian Islam (IPT) yang diguna pakai untuk pengamal pengimejan Perubatan yang akan disediakan. Perumusan garis panduan dalam bentuk kerangka konseptual, dapat membuka jalan yang benar menuju promosi, pemahaman dan pengantaraan keperibadian Islam dalam mempraktikkan perubatan pengimejan.

Kata kunci: keperibadian Islam, pengimejan perubatan, kajian KAP, Universiti Islam Antarabangsa Malaysia.

1. Introduction

In psychology, personality is an inner system that is dynamic and it forms the pattern of attributes of a person in terms of his actions, thoughts and feelings (Allport, 1961). Islamic personality is the personality

that is guided by the primary sources which are the holy *Qur'an* and the *Sunnah* (i.e. the words and actions of the prophet) of the Prophet Muhammad (Peace be upon him). The applications of the Islamic personality are relevant in all aspects of life, including the practices in the professional areas such as the Medical imaging field. It is the duty of a Muslim to do his best to internalize and practice the Islamic personality attributes (traits) in performing his daily responsibilities.

Medical imaging is a sub-specialty in Medicine that is concerned with the production of images of the human anatomy. These images are used to detect, locate, and characterize the medical anomalies.

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Medical imaging domains include professionalism, safety and security, patient care, use of technology, technicalities or procedures, research, and resources management. The Medical imaging practitioner uses the imaging equipment for diagnostics, monitoring, and treatment purposes with or without the involvement of X-ray radiation. The humanistic component in Medical imaging involves the task of dealing with patients and other health care practitioners (Zainuddin and Radzi, 2013). Since the profession deals with specific tasks and the community, a set of attributes (traits) is necessary for the Medical imaging practitioners. This is to ensure that the practitioners apply the best conduct within the Medical imaging practices. The authors further stressed on the necessity for Muslim Medical Imaging professionals to realise their duty towards the religious obligations in those respective areas. This is important to ensure that religious obligations are incorporated within the Medical imaging practice.

This study examined the knowledge, attitude and practices towards the applications of Islamic personality in Medical imaging domains among the Medical imaging students at International Islamic University Malaysia (IIUM). The literatures related to the Medical imaging professional guidelines and Islamic personality were initially investigated in order to identify the common professional attributes (traits). These were then aligned to the Islamic personality traits based on the Islamic references. The study was conducted by means of a questionnaire. The results and discussions uncovered the areas of which the students showed the strengths or the weaknesses through the percentage scores for each item in the questionnaire. The findings are to be used to improve those areas found to be lacking and in need of specific approaches to enhance Islamic personality in the field. It is felt that the study can also be adopted and adapted for other areas of health sciences. This is towards the introduction, promotion, establishing, understanding, and internalizing the aspect of Islamic personality as applicable for the various fields in healthcare.

2. Literature Review

Islamic personality is a psychological construct grounded in moral quality (Frager and Fadiman, 2005), which covers all the beliefs, behaviours, attitudes and social manners as taught by the holy *Qur'an* and *Sunnah* of Prophet Muhammad (peace be upon him) (Tekke, Ismail, Adnan, and Othman, 2015). This is also seen within the context of one's life actions that are directed and inspired by the strong faith in God as depicted from the spiritual dimension in the human personality (Mischel, Shoda and Ayduk, 2008). One of the strong predictors of one's closeness to God and

remembrance of Him and His Prophet is the Islamic personality (Tekke, Ismail, Adnan, and Othman, 2015). Al-Ammar, Ahmed and Nordin (2012) reiterate that in the holy *Qur'an* the word "personality" is related to several terms; man (insan), people (nas), believer (mukmin), unbeliever (kafir), hypocrite (munafiq), and Christians and Jews (ahl al-kitab). A good Muslim should internalise noble attributes, as depicted by Prophet Muhammad (peace be upon him) in all aspects of their daily work such that these attributes become part of one's personality. One such example of good personality is *amanah* (trust) as elucidated in the holy *Qur'an* and the *Sunnah* (Tekke, Ismail, Adnan, and Othman, 2015).

Professional guidelines are written documents that outline the best practices for a particular profession. They serve to guide and support the members in the practice of their profession. These guidelines can differ from one country / organisation to another in terms of the framework and essences, although they have the same intended outcomes. The present authors believe that current available Medical imaging professional guidelines can be adopted and adapted for the formulation of the Islamic personality traits as applicable for Medical imaging practitioners.

Muslim scholars have come up with various tests to facilitate one's understanding pertaining to Islamic personality. They include Muslim Religiosity-Personality Inventory (MRPI) (Krauss, 2005), Ummatic Personality Inventory (UPI) (Othman, 2008), Islamic Behavioral Religiosity Scale (IBRS) (Abou-Youssef, Abou-Aish, and El-Bassionny, 2011), Moral Character of Muslim Personality (MCMP) (Al-Ammar, Ahmed, and Nordin, 2012), Psychological Measure of Islamic Religiousness (PMIR) (Abu-Raiya, Pargament, Mahoney, and Stein, 2014), and Integrative Islamic Personality Inventory (IIPI) (Ismail and Tekke, 2015). Saroglou and Munoz-Garcia (2008) asserted that religiosity and spirituality can be predicted through the assessment of personality factors.

The formulation of a model for Islamic personality and its measures are very important in order to assess the characteristics of Muslims. Within the professional environment, assessment of Muslim characteristics could be important when it comes to matter of employment of candidates for new work positions, profession development, and other human resources related events. Efforts to study religiosity in human personality are also important since there are positive connections between the factors of personality and the religiosity (Othman, Hamzah and Hashim, 2014). Thus, Muslim personality tests are instruments used primarily to gain understanding about the religious practices among Muslim community. Some of them have been used frequently in several studies on

religiosity in Muslim community. However, these Islamic personality tests might not be completely applicable in Medical imaging field. Adopting and adapting these tests might be useful for the purpose of the study.

The discussions pertaining to Islamic personality and Islamic personality traits can be summarized as follows. Islamic personality (IP) is a form of moral quality in the psychological aspect of a human which governed by the belief in Allah as the One God and Muhammad (peace be upon him) as His servant and His messenger. It consists of a wide knowledge about the concept of personality as taught by the holy *Qur'an* and the *Sunnah* of Prophet Muhammad (peace be upon him) in all aspect of life. Meanwhile, Islamic personality traits (IPT) refer to the specific attributes that have their own definitions and applications depending on the focused areas. The term Islamic personality trait is used to denote the specification of the attributes in the practice of the various domains in Medical imaging. Thus, IP is used to denote the general concept, while IPT is used to denote specific attributes and applications (examples) in the specific domains.

The concept of IP is closely related to the Islamic knowledge; *'ulum al-akhlaq*. *'Ulm al-akhlaq* is the plural form for *'ilm al-akhlaq* which literally means knowledge of *akhlaq*. *'Ilm al-akhlaq* is a branch of knowledge which deals with ways to maintain virtues at their optimum level; avoiding wrongdoings and doing what is right and desirable (Ahmat and Akdogan, 2012). In the holy *Qur'an*, Allah says:

"And there may spring from you a nation who invite to goodness, and enjoin right conduct and forbid indecency. Such are the ones to attain felicity" (The *Qur'an* 3: 104).

This shows that *'ilm al-akhlaq* is a branch of the Islamic teachings as stated in the holy *Qur'an*.

Akhlaq can be seen within the context of; 1) ethics and 2) good character (*al-akhlaq al-fadilah*) (Hashi, 2011). In his elaboration, the author sees ethics as a science that refers to the study of the ethical conduct and behavior in order to ensure the human community possesses the right understanding of moral behavior. Within the same context 'good character' is the human character that prescribes to abstain from immoral conducts and enjoins virtues. Those characteristics are as taught by the holy *Qur'an* and demonstrated by the exemplary life of Prophet (Peace be upon him) (William, 1971; Velasquez, 1982; Zaroug, 1999; Haneef, 2005). *Akhlaq* is crucial to stimulate and guide individuals in performing certain acts which will create a huge and positive impact on organizations (Ibn

Miskawayh, 1961; Al-Ghazali, 2007). A good Muslim should possess the right understanding about *akhlaq* and translate the understanding into his daily life.

Saroglou and Munoz-Garcia (2008) asserted that religiosity and spirituality can be predicted through the assessment of personality factors. Positive connections between the factors of personality and the religiosity have been noted (Othman, Hamzah and Hashim, 2014). This suggests that the religiosity has an influence towards the pattern of personality of a human.

In Islam, morality can be divided into three categories; a) the obligations, duties, and responsibilities, set out in the *shari'ah*, b) the values and manner that associated with good upbringing, c) the personal qualities of character that a Muslim is expected to demonstrate in the everyday life (Halstead, 2007). The third category reveals that Islam never separated the morality from the human personality. Good morality is seen as a reflection of strong religious faith (Hashi, 2011). This shows that the good personality is one of the manifestations for high value of morality and strong religious faith.

The literature search failed to unearth any studies that examined the concept of Islamic Perspectives and IPT in Medical imaging. There is a general Code of Ethics for Healthcare Practitioners in accordance to the Islamic *Shari'ah* developed by The Saudi Commission for Health Specialties (SCFHS, 2014). However, there is little to suggest the presence of the Islamic Code of Ethics specifically for Medical Imaging Practitioners. Thus, a study was undertaken to explore these aspects among students in Medical imaging. The research questions that guide this study include:

1. What would be the status of knowledge, attitude and practice of the students on the application of Islamic personality in Medical imaging domains?
2. Which aspects need to be improved and/or maintained in the students about the application of Islamic personality in Medical imaging?

3. Methodology

The study was conducted on undergraduate Medical Imaging students at International Islamic University Malaysia (IIUM), Kuantan Campus. It involved the use of a questionnaire that was aimed to fulfil the objectives of the study. The data were collected using the purposive convenience sampling. Only students who had undergone clinical practices were included in the study. There were 36 respondents from the third and fourth year of studies who were considered to have sufficient exposure to the clinical experiences.

A questionnaire was developed from analyses of literatures on Islamic personality (IP) by other

researchers in other fields of specialization and Medical imaging professional guidelines. The concepts of Islamic personality that were identified in the questionnaire were widely based on the Islamic concept within the scope of '*ulum al-akhlaq*'. The understanding of '*ulum al-akhlaq*' should lead to the application of the IP in one's life. Thus, it is crucial for the Medical imaging students to be able to outline the meaning of IP and IPT, and relate the terms to the Islamic concept of '*ulum al-akhlaq*' to their area of studies. The professional guidelines were used to identify the professional traits that these guidelines champion. Combining these two perspectives; one from Islamic religious foundations and the other from the secular professional environment helped in the formulation of a questionnaire that incorporates both perspectives. This gives the researchers the ability to explore the knowledge, attitude and practice of Islamic traits among the students to currently accepted professional traits.

There are 57 questions in 4 sections (Section A, B, C, and D) provided in the questionnaire. Section A collected the demographic data of the respondents; Section B served to identify the students' knowledge on the application of Islamic personality in Medical imaging domain; Section C served to identify the students' attitude on the application of Islamic personality in Medical imaging domains; and Section D served to determine the students' practice on the application of Islamic personality in Medical imaging domains. Section B provided true or false choices questions and an open-ended question to identify the understanding on the examples of IPT. The five-point Likert scaled questions with an open-ended question were provided for Section C and D. The open-ended question in Section C looked for the respondents' view on the way to create the awareness of the Medical imaging practitioners on the application of the Islamic Personality. For Section D, the open-ended question was included to seek the respondents' ideas on the practice of the concept of *amanah* in the Safety and security domain.

The questionnaire was reviewed by experts for validity and approved by the Kulliyyah Postgraduate and Research Committee (KPGRC: ID no. 36; Meeting no. 02/2017) and IIUM Research Ethics Committee (IREC: ID no. IREC 859, approved on 4th May 2017). Written consent was obtained from every respondent at the beginning of the survey to ensure that all responses were given voluntarily. Since there were no similar studies done previously, the researcher chose to be present during the data collection session to attend any query from the respondents and thus ensuring the reliability of the answers. The questionnaires were returned to the researcher directly after the respondents

had finished answering all of the questions after the session.

4. Results and Discussions

4.1 Section A: Demographic Data

For Section A, the demographic data collected included the gender, year of study and earlier education. There were 23 (63.9%) female and 13 (36.1%) male respondents, in which 12 (33.3%) of them were from third year and 24 (66.7%) were from fourth year students. Among them, 72.2% of the students had earlier education in ordinary secondary schools while 27.8% students came from Islamic secondary schools. This shows that the majority of the Medical imaging students of IIUM did not undergo formal Islamic education in the secondary schools. This can be an indicator for the findings that the students' secondary education might have some influences on the students' knowledge about the concept of Islamic personality. These data were collected to describe the characteristics of the respondents who involved in the study.

4.2 Section B: Students' Knowledge on the Application of IP in MI

This section serves to answer the research question whether the Medical imaging students have knowledge in the application of Islamic personality in Medical imaging. There are 24 items provided in this section. The item with mark (*) was reverse-scored. Table 1 was simplified for focusing on the areas that need more attention for the improvement.

About 80.6% of the students were able to relate Islamic Personality (IP) to '*ulum al-akhlaq*' in the Islamic knowledge. 41.6% were unsure of the meaning of IP and Islamic Personality Trait (IPT). This shows that the majority of the students knew the relationship between the IP to '*ulum al-akhlaq*', but collectively, have yet to comprehend the true meaning of the terms of Islamic personality and the traits. This can be due to the lack of exposure on the detailed concept of Islamic personality among the students. The concept of '*ulum al-akhlaq*' as explained in the literature review should be understood deeply by the students within its context. The understanding about IP could help the students to realise that their duty to identify the aspects of IP that is applicable or relevant to Medical imaging practices. Since there are still a number of students who did not understand the concept of IP, efforts to narrow down the dimensions of Muslim personality applicable to Medical imaging practices should be prioritized.

The concept of IP was said to be taught in the theoretical modules by 77.8% of the students. Meanwhile, the integration of the concept of IP in the

theoretical component of Medical imaging studies was appreciated by 83.3% of the students. The results suggest that the teaching and integration of the concept of IP has yet to be fully realised by the students. Further clarification should be given to the students about the concept of IP and how the concepts can be integrated into the Medical imaging studies. It can be argued that avenues to promote those concepts can be done through formal and informal sessions. This includes group discussions and presentation sessions among the students about the concept of IP and the applications in order to create the uniform awareness among these students.

The teaching and integration of the concept of IP in the practical modules of Medical imaging studies were realised by 52.8% and 55.6% of the students respectively. These findings suggest that in the

practical sessions the concept is not being adequately emphasised as compared to the theoretical sessions. This could be attributed to the lack of understanding among the students toward the applications of the concept of IP when it comes to the real Medical imaging practices. It is postulated that the causes of the inability of the students to correlate the concept of IP to the Medical imaging practices can be due to internal (i.e. the students themselves) and external (i.e. learning environment, real practical situations, the academicians and service providers, content of curriculum, etc) factors. The aspects that resulted in the inability of the students to appreciate the existence of the concepts and the integration within the practical modules of Medical imaging studies need to be identified. Further studies regarding these issues are necessary.

Table 1: Students' knowledge on the applications of Islamic Personality in Medical Imaging domains

No. of item	Statement	True Freq. (%)	False Freq. (%)	Unsure Freq. (%)
1	I know what IP and IPT mean.	21 (58.3)	3 (8.3)	12 (33.3)
4	The concept of IP is being taught in the practical modules.	20 (55.6)	11 (30.6)	5 (13.9)
6	The concept of IP is integrated in my practical component of MI studies directly.	19 (52.8)	12 (33.3)	5 (13.9)
8	<i>Amanah</i> is an example of IPT.	35 (97.2)	0 (0)	1 (2.8)
12	Practice within the limit of competence is an example of the application of the concept of <i>amanah</i> (trustworthiness).*	19 (52.8)	8 (22.2)	9 (25.0)
14	IPT can be found in the current professional guidelines statements (Code of Practice, Code of Ethics, etc).	14 (38.9)	7 (19.4)	15 (41.7)

There are similar percentages (61.1%) of students who indicated the non-existence of specific guidelines about IP and of those who knew that the IPT for Medical imaging practitioner has yet to be established. Only 38.9% of the students realised that the IPT can be found in the current professional guidelines statements. The findings show that the students have been exposed with the conventional Medical imaging professional guidelines but find that IPT is hardly to be found in the guidelines. This suggests that they have yet to be able to relate that some elements within the professional guidelines are actually in line with the concept of IP and IPT. The relatively low percentage is due to the fact that most of the existing guidelines are in English

while Islamic personality (IP), by virtue of the term 'Islamic', tends to be seen within the Arabic context. The students might have the difficulty in relating the English terms; e.g. "empathy", "responsibility", "trustworthiness", etc, to the terms in Arabic. It is suggested that the students should be given specific assignments to deepen their exploration into the professional guidelines and relating these within the Islamic context. It is also expected that more ideas can be developed to establish IP in Medical imaging professional field as the outcome of those works.

Higher percentages of agreement were noted to statements that explored the applications of IP; the highest percentage is 97.2%, which are for the two

statements, *amanah* is an example of IPT and performing the duty in a co-operative manner with other healthcare worker is the application of the concept of *ta'awun* (co-operation). 91.7% was recorded for students who agreed that maintaining the quality of professional responsibilities through fair considerations in all possible aspects is the application of the concept of *al-'adl* (justice). The statement of being on time is one example of IPTs in Professionalism domain is agreed by 88.9% of the students. The professional conduct and appearance of the practitioner can help in securing public trust is the application of the concept of *al-ihsan* (excellence) (72.2%). Keeping accurate records is an example of the application of the concept of *al-itqan* (proficiency) gave the percentage of 61.1% for agreement. The statement of "Practice within the limit of competence is an example of the application of the concept of *amanah* (trustworthiness)" agreed by 75% of the respondents.

The results above are attributed to the domain of Professionalism. Overall, the students seem to have knowledge about the IP's concept as given in the statements. However, a finding that relates to the word '*amanah*' was misinterpreted by the students in terms of its application in the Medical imaging practice. The implication to the misinterpretation of the concept of *amanah* may be due to the confusion in defining the word '*amanah*' and relating it into the practice. In the holy *Qur'an* Allah said, "*We offered the trust unto the heavens and the earth and the hills, but they shrank from bearing it and were afraid of it. And human assumed it. He was indeed tyrannus (a tyrant) and ignorant*" (*The Qur'an*, 33:72). Allah also mentioned in the holy *Qur'an*, chapter 4, verse 58:

"Allah doth command you to render back your Trusts to those to whom they are due; And when ye judge between man and man, that ye judge with justice: Verily how excellent is the teaching which He giveth you! For Allah is He who heareth and seeth all things" (*The Qur'an*, 4: 58).

This shows that anything given by Allah is an '*amanah*' (trust) that should be managed in accordance to His command. In the form of adjective, *amanah* is associated to the sense of responsibility, honourable, courtesy, showing optimal result and respectful to others (Rahman and Shah, 2015). For example in Medical imaging practices, providing the patient with an accurate description of all procedures and associated risks in the right and the best manner is an example of observing the *amanah*. More exposure of practical examples for not only the concept of *amanah* but also of other IPTs in the Medical imaging practices need to

be given. This can help the students to identify and clarify the differences between the concept and the applications.

Applying the concept of As Low As Reasonably Achievable (ALARA) in Medical imaging practices was recognised as an example of IPT in Safety and security domain by 94.4% of the students. Meanwhile, 86.1% of the students did not agree that leaving the patient in the examination room unaided is an example of IPT in safety and security domain. This indicates that the students are able to differentiate between positive and negative IPT in the safety and security domain. There are still a number of students who are unsure about the application of the concept of IP in safety and security domain. This is due to the understanding of some students that safety and security domain in Medical imaging is only related to the radiation dose given to the patients and not the other aspects. The introduction of the examples of IPT in terms of other technical aspects of Medical imaging practices within the safety and security domain needs to be further enhanced.

Respecting the confidentiality of the patient's information is one of IPT in Patient care domain (91.7%). A number of students (80.6%) agreed that obtaining the consent from the patients preceding a radiological examination is one of the IPT in technicalities and procedures domain. The findings indicate that the ability of the students to recognise the example of IPT in both the above domains. The remaining students who did not agree with the statements might be uncertain with the differences between the Patient care and Technicalities and procedures domains. The Patient care domain focuses on the professional attributes while dealing with anything related to the patients. While, the Technicalities and procedures domain focuses on the professional attributes in matters that involve the mechanisms in the preparation and performing the examinations or treatment. Although, obtaining the consent from the patient is a matter related to the patient, it comes under the procedures before performing the radiological examination. The uncertainty about the IPT in both domains can lead to the misconduct in the Medical imaging practices.

The use of the department's computer and internet services for personal matters during working-hour was an example of negative IPT in the use of technology domain (80.6%). The percentage of the students who agreed that warming up the Medical imaging modalities before using the modality is an example of IPT in the use of technology domain is 61.1%. The students are able to identify the negative and positive example of IPT in the Use of technology domain. However, there are still a number of students who did

not agree with the statements. This suggests that the students have yet to possess the right understanding in determining the application of the IP in the Use of technology domain. The Use of technology domain focuses on the professional attributes when dealing with matters related to technological equipment and applications. The lack of understanding about the IP in the Use of technology domain will lead to the misuse and abuse of the technological facilities, and damages of the equipment within the Medical imaging department.

Seventy-five percent (75.0%) of the students agreed that “Exploring the latest updates on the best practices in MI in Research domain” and “Using the appropriate size of film in relation to the body part to be examined in Resources management domain” are examples of the application of IP. There are still a number of students who seem to be unfamiliar with the Research and Resource management domains. The Research domain focuses on the professional attributes in the matters related to the development and improvement in the profession. The Resources management domain focuses on the professional attributes in managing any resources including the human, financial, facilities, and etc., within the Medical imaging department. Using the appropriate size of film with the body part of examination is a professional attribute of Resources management. It involves the management of the values of aesthetic of the radiological image produced and the cost of the film. Failure in managing the resources can give rise to negative effects on the quality of service in the Medical imaging department. Efforts for applying the best resources management’s system within the Medical imaging department are important. This is to ensure that the management and the usage of the resources in a healthcare institution can be optimised.

Exploring the latest best practices in order to improve the conduct within the present Medical imaging practices, is a means for the continuous improvement of the profession. Continuous improvement is an aspect of quality. Related to this is a narration of Imam At-Tabrani, the Prophet Muhammad (peace be upon him) says that, “*Indeed Allah loves one who does work, he does it with itqan,*” (Mohammad, 2009). *Itqan* is closely associated to perfection (Ismail, Shuriye and Adam, 2009). On that note, perfection should also be seen within the context of striving towards excellence by constant evaluation of one’s daily performances. A profound verse in the Qur’an that reminds Muslims to apply self-examination (*Muhasabah*) in his work can be seen in 13:11:

“*For each (such person) there are (angels) in succession, before and behind him: They guard him by command of Allah. Allah does not change a*

people's lot unless they change what is in their hearts.....,” (The Qur’an, 13:11).

These Islamic references show that a Muslim must seek the way to perform better every time he performs a task and their performance must be parallel to what have been revealed in the holy *Qur’an*.

Concluding this section, the students show some level of understanding to the concept of IP. However, the deep understanding and the ability to relate the concept with the examples in the Medical imaging practices is still unsatisfactory. In terms of the understanding about the meaning of IP and IPT and relating the concept to the ‘*ilm al-akhlaq*’, the students need more exposure about the concepts. In theoretical modules, the students have yet to fully realise about the teaching and integration of the IP’s concept within the theoretical components of Medical imaging studies. Similarly, the teaching and integration of IP’s concept in the practical modules are not being adequately emphasized in the Medical imaging studies. In terms of the knowledge about the professional guidelines, the students have yet to study the guidelines thoroughly. Though they are able to recognise and relate the given examples to some elements of the IPT, their ability to align the concept of IP to the domains in Medical imaging is still inadequate. Efforts should be made to set a clear definition for each domain in Medical imaging and relate relevant IPT to those domains with supporting Islamic evidences (e.g. holy *Qur’an*, *Sunnah*, etc).

Further studies are necessary in order to clarify the actual causes for the lacking aspects of the Islamic personality in the Medical imaging students. Studies should also be done on lecturers and university staffs so that a broader view about the understanding pertaining to the aspects of Islamic personality (IP) can be obtained. There is a need to formulate a specific policy in the attempt to promote the Islamic ethics by introducing the aspect of IP applicable in the Medical imaging field.

4.3 Section C: Students’ Attitude on the Application of IP in MI

This section serves to determine the attitude of Medical imaging students on the application of the Islamic personality in Medical imaging. There are 14 items provided in this section. The higher the percentage score of “Agreement (%)”, the more positive the student’s attitude toward the application of Islamic personality in Medical imaging. The item with mark (*) was reverse-scored. Table 2 was simplified for focusing on the areas that need more attention for the improvement.

The majority of the students showed positive attitude towards the internalization of IP in the Medical imaging practitioners. This can be seen through items number 1, 2, 10, and 13. Items number 1 (91.7%) and 2 (75.0%) reveal the positive attitude of the students in terms of realizing the IP into practice within themselves in their future profession. The high percentage of agreement for item number 10 (80.6%) portrays the positive students' attitude to the importance of internalizing the concept of IP into the Medical imaging practitioners. For item number 13, 75.0% of the students indicated agreement towards the feasibility of the internalization of IPT for the non-Muslim Medical imaging practitioners. However, the issue may rise when the internalisation of the concept of IP is to be done on the non-Muslim practitioners. The concept most probably will be easily accepted by the Muslim practitioners, but might create the resentment of the non-Muslim practitioners.

One way in facing this issue is by giving the understanding about the concept of Islamic personality to the non-Muslim as well. It should be emphasized that the teachings of Islam is close to the *fitrah* (natural tendency) of human that does not have contradiction to the ethical component in most of the standard professional practice. The Islamic values such as the

IPT are not only applicable for the Muslim, but also to all people in general.

The attitude of the students towards the application of IP in the Medical imaging field in general can be seen as positive when 91.7% of them agreed that IP is applicable in the Medical imaging field. This is supported by the agreement on the application of the IPT in establishing the team working in the Medical imaging practices (94.4%). The students also have a positive attitude that the concept of IP is possible to be applied immediately in the Medical imaging practices (88.9%). The attitude of the students is said to be negative when only 25.0% of them had the feeling that IPT has been shown in the Medical imaging services. It could be due to the fact that they could not see clearly in which area of the Medical imaging services were the IPT being applied. This can be attributed to the current Medical imaging practitioners who failed to display IPT while giving the Medical imaging services. Senior and longer-serving Medical imaging practitioners should also be exposed to the concept of IP and they should be encouraged to make efforts in applying it. This is important so that those who in the process of familiarizing themselves in the profession can adopt and adapt the concept of IP in the services as well.

Table 2: Students' attitude on the applications of Islamic Personality in Medical Imaging domains

No. of Item	Statement	Agreement Freq. (%)	Unsure Freq. (%)	Disagreement Freq. (%)
3	I feel that IPT has yet to be shown in MI services.*	9 (25.0)	7 (19.4)	20 (55.6)
4	IPT have been outlined in the MI professional guidelines.	13 (36.1)	17 (47.2)	6 (16.7)

Similar percentages of agreement (72.2%) were recorded for statements "IP is not possible to be applied in all domains of MI" and "the concept of IP is applicable in ALL MI domains". They showed the positive attitude on the possibility that the concept of IP is applicable in all Medical imaging domains. There are still a number of students who did not agree with the statements. It is postulated that the students may have a perception that the concept can be applied only in several Medical imaging domains. The lack of exposure and understanding about the application of IP in all of the Medical imaging domains could be the contributing factor. Therefore, efforts in establishing the concept of IP and its applications in Medical imaging need to be done so that the students could deepen their views about the applications of the concept.

Only 36.1% of the students agreed that IPT have been outlined in the Medical imaging guidelines. This shows the low positive attitude of students towards the existence of Medical imaging guidelines that addressing the IP in it. The students shows positive attitude towards the need for a guideline on IP (88.9%). This suggests that the students find difficulty to find the specific IPT in the existing Medical imaging guidelines and this led them to feel that establishing a guideline on IP is necessary. Therefore, the development of a concept of the Islamic Personality (IP) for Medical Imaging practitioners could be one of the efforts in fulfilling the gap.

The majority of the students agreed that the education of the concept of IP to the new Medical imaging students can help in incorporating the IPT into the Medical imaging practices (88.9%). This shows the positive attitude of the students towards the education

is useful to improve the understanding of the students about the IPTs in the Medical imaging practices. The students also showed the positive attitude towards using the regular professional performance evaluation as a mean to internalize the IPT into the Muslim Medical imaging practitioners (72.2%). This suggests that there are ways to internalise IPT into the Medical imaging practitioners. It is expected that IP is practical to be applied into the Medical imaging domains.

To sum up this section, the questions above were discussed into several major aspects of the students' attitude. Overall, the attitude of the students can be said as positive towards the aspects in the discussion. However, some issues need to be considered. For example the acceptance of the application of the concept of IP in the non-Muslim practitioners, how to make the concept be compatible for them as well? Other than that, how to change the negative attitudes of the older Medical imaging practitioners in their professional performance and how to maintain the positive attitudes? Efforts to solve these issues need to be increased and the outcome for the approaches that have been applied should be monitored from time to time. Further researches for understanding the factors that affecting the attitudes of the Medical imaging practitioners towards the profession need to be stimulated.

4.4 Section D: Students' Practice on the Application of IP in MI

This section serves to determine the practice of Medical imaging students on the application of the Islamic personality in Medical imaging. There are 13 items provided in this section. The higher the percentage scores of "More freq. (%)", the better the student's practice on the application of Islamic personality in Medical imaging. The item with mark (*) was reverse-scored. Table 3 was simplified for focusing on the areas that need more attention for the improvement.

Only 27.8% of the students greeted the patients with the "Salam" more frequently, while 94.4% of them frequently addressed their seniors' and staff's name appropriately. This suggests that the students take serious consideration in greeting other co-workers but were less concerned with the greeting towards the patients. The reason behind the students' lack in greeting the patients is that the Islamic salutation "Salam" is supposed to be greeted by a Muslim when meeting other Muslims, so it is not applicable to the non-Muslim patients. Another reason for the low practice in spreading "Salam" to patients might be due to the number of the patient and their conditions such as the traumatic or unconscious condition that could

have limit the communication time with them. These are some common patient conditions faced by the Medical imaging practitioners in their profession. These conditions limit the possibilities of the pleasantries that Islam expect its followers to practice. In *Sahih Muslim*, Abu Huraira reported that the Prophet Muhammad (peace be upon him) said that:

"You will not enter paradise until you believe and you will not believe until you love one another. Shall I show you something that, if you did, you would love each other? Spread peace between yourselves" (Elias, 2015).

Muslim Medical imaging practitioners should recognise the situation that they are facing so that they can react accordingly towards the patients and other workers based on the given situation. The majority of the students (77.8%) did not ignore the cleaners when they see them indicating that they are not discriminating between the type of workers in the workplace. This suggests that they understand that discriminating others should not be an attribute of a Muslim except for several situations. In the last sermon of the Prophet Muhammad (peace be upon him), was reported to have said:

"...All mankind is from Adam and Eve, an Arab has no superiority over a non-Arab nor a non-Arab has any superiority over an Arab; also a White has no superiority over a Black nor a Black has any superiority over a White except by piety and good action. Learn that every Muslim is a brother to every Muslim and that the Muslims constitute one brotherhood. Nothing shall be legitimate to a Muslim which belongs to a fellow Muslim unless it was given freely and willingly...." (IIUM, n.d.).

A professional should never discriminate others based on different social status.

Results also showed that 52.8% of the students practiced IPT in their clinical practice more frequently while the rest practiced it occasionally. This indicates that the students have yet to completely apply the IP in the Medical imaging practice. The lack of understanding on the concept of IP and the applications in the Medical imaging practice could be the contributing factor. It can be argued that applying the IP into Medical imaging practices is not as easy as learning the concept theoretically.

The practice requires motivation, commitment and determination within the individual. It was narrated by Imam Ahmad bin Hanbal (*hadith* no.14869), Sufyan Ath-Thaqaafi reported:

"I said, 'O Messenger of Allah, tell me about Islam in one word that I would not ask anyone other than you (according to Abu Mu'awiyah he said, "anyone after you"). The Prophet Muhammad (P.b.u.h.)

said, 'Say I believe in Allah and then steadfast'" (Siddiqi, n.d.).

Table 3: Students' practice on the applications of Islamic Personality in Medical Imaging domains

No. of Item	Statement	More freq. Freq. (%)	Sometimes Freq. (%)	Less freq. Freq. (%)
1	I greet my patients with the "Salam".	10 (27.8)	16 (44.4)	10 (27.8)
9	I try to contribute some of my time, thought, and energy for the scientific research to support the development of new knowledge for the society's benefits.	8 (22.2)	12 (33.3)	16 (44.4)
11	I discuss about patient with my colleagues.*	11 (30.6)	14 (38.9)	11 (30.6)

In the holy *Qur'an*, Allah says:

"Therefore stand firm (in the straight path) as you are commanded- you and those who with you turn (unto Allah); and transgress not (from the path): for He sees well all that you do," (The Qur'an, 11: 112).

Therefore, efforts to encourage the students and the practitioners to remain steadfast in applying the IPT in the Medical imaging practices are necessary.

Higher percentages were recorded for the students who more frequently reached at the clinical practice place on time (86.1%), did the practical work properly when the authority is around (83.3%), and applied the Islamic professional dress code at work (97.2%). This shows that the students have a good practice in terms of managing the time, doing practical work, and applying the Islamic dress code at work. There are still a number of students who did not apply the good practice consistently in these aspects. This suggests that the students still need to be reminded continuously in maintaining the good practice. The students should also be reminded to do their work properly even when the authority is not around as an implication of the concept of *amanah* (trustworthiness). All students indicated that they did not misuse the computer in the Medical imaging department during working hours. This shows that they are conscious about not misusing the computer in the Medical imaging department for updating *facebook* status during working hours. However, it is to be highlighted that the use of smart phone during working hours need to be taken into consideration since it can be categorized as the act that using the working hour for personal matter. The working time is also considered as an *amanah* (i.e.

trust) to be fulfilled with the duty as Muslim professional even when there is no patient to be attended to. It is suggested that the free time during working-hour can be filled with *Qur'anic* recitation, the remembrance of Allah, or reading and discussing beneficial materials since these actions are also counted as good deeds.

Most of the students (63.9%) turned off the light and fan when they are not using the room more frequently. More than half of the students did not plagiarise the essays from the internet for their assignment (61.1%). The students reported any damage that they have made on the laboratory instruments to the persona-in-charge (66.7%). However, there are still a number of students who have yet to internalize the IPT within them in these areas. It can be argued that the inability to perform self-examination (*muhasabah*) in oneself could have contributed to the failure to internalize IPT. Continuous efforts to revive the self-examination (*muhasabah*) in the students have to be done so that the internalization and the application of the concept of IP in Medical imaging can be realized.

Only 22.2% of the students more frequently tried to contribute for the scientific research to support the development of new knowledge for the benefit of society. This indicates that they pay less attention for the contribution in the scientific research and knowledge development. The implication for the lack of contribution in research could be due to the fact that some researches need costly budget (e.g. materials for the experiment) and they need to have passion to do it with the time constraint. One of the solutions would be through the role of the academicians or supervisors to encourage and support the students who show the good effort in doing the scientific research.

Only 30.6% of the students did not readily discuss about patients with their colleagues. This suggests that the majority of them talked about their patients with colleagues. The statement in the questionnaire did not specify the topic of discussion pertaining to the patient. The students' discussions about the patients with colleagues can be due to several reasons. It is possible for the students to discuss unnecessary thing, for example the patients' bad attitude, patients' personal details and so on. On the other hand, the students could also have discussed something related to the patient which could be useful for the practical learning. It is suggested that in the future, the question about this aspect need to be modified to explore the topic of discussion.

The practice of Medical imaging involves various domains. A conceptual framework on the aspect of Islamic personality in Medical imaging domains is essential to be formulated. This will help in understanding of how such Islamic personality can be made applicable to the practice of Medical imaging and what are the major traits should involve.

5. Conclusion

In conclusion, in the aspect of knowledge, the students seem to have the overview about the concept and the applications of Islamic Personality. However, the improvement needs to be done in terms of the in depth understanding about the examples for each Islamic Personality Trait in relation to each domain of Medical imaging. The attitude of the students is said to be towards positive direction. The important point to be focused on for betterment is on the awareness about fulfilling the Islamic obligations as a Muslim Medical imaging practitioners in the future and to steadfast in doing it. There is a need for specific guidelines on the application of Islamic personality for each domain to provide guidance to these Muslim would be Medical imaging practitioners. In the process of applying the theory into practice with consistency, the source of motivation, commitment and support are the critical elements to be considered. Thus, efforts are necessary in order to strengthen the knowledge, and to improve the attitude and practice consistently.

6. Future Recommendation

The application of the concept of Islamic personality in the Medical imaging domains is still at the exploratory stage. There is a call for the formulation of the guidelines in order to promote, understand, and internalize the Islamic personality into Medical imaging practice. At the very beginning stage, a form of conceptual framework needs to be drawn up to specify the core structure of the Islamic personality

concept in the context of multitude domains in Medical imaging practice. The formulation of the conceptual framework will ease one step of the path towards the application of the Islamic personality in Medical imaging practice.

References

- Abou-Yussef, M., Kortam, W., Abou-Aish, E., & El-Bassiouny, N. (2011). Measuring Islamic-Driven Buyer Behavioral Implications: A Proposed Market-Minded Religiosity Scale. *Journal of American Science*, 7(8), 728-741.
- Abu-Raiya, H., Pargament, K.I., Mahoney, A.I., & Stein, G. (2008). A Psychological Measure of Islamic Religiousness: Development and Evidence for Reliability and Validity. *International Journal for the Psychology of Religion*, 18(4), 291-315.
- Ahmat, N., & Akdogan, C. (2012). Trust (*Al-Amanah*): A Comparative Study of its Application in Islamic and Western Science. *The Asian Conference on Ethics, Religion & Philosophy: Official Conference Proceedings 2012*, 47-57.
- Al-Ammar, F. K., Ahmed, I. H., & Nordin, M. S. (2012). Moral Character of Muslim Personality: Scale Validation. *Journal of Education and Practices*, 3(16), 118-128.
- Ali, A. Y. (2007). *The Meaning of the Holy Qur'an: Text and Translation*. Kuala Lumpur: Islamic Book Trust.
- Allport, G. W. (1961). *Pattern and Growth in Personality*. New York: Holt, Rinehart & Winston.
- Elias, A. A. (2015, December 29). An-Nawawi on spreading peace on earth [Web log post]. Retrieved November 1, 2017 from <https://abuaminaelias.com/-an-nawawi-on-spreading-peace-on-earth/>.
- Frager, R., & Fadiman, J. (2005). *Personality and Personal Growth* (6th ed.). New Jersey: Pearson Education.
- Halstead, J. M. (2007). Islamic values: a distinctive framework for moral education? *Journal of Moral Education*, 36 (3), 283-296, DOI: 10.1080-/03057240701643056.
- Haneef, S. S. S. (2005). *Ethics and Fiqh for everyday life: an Islamic outline*. Kuala Lumpur: IIUM Press.
- Hashi, A. A. (2011). Islamic Ethics: An Outline of Its Principle and Scope. *Revelation and Science*, 1(3), pp.122-130. Retrieved May 22, 2016 from <http://journals.iium.edu.my/revival/index.php/revival/article/view/46/38>.
- Ibn Miskawayh. (1961). *Tahdhib al-Akhlaq*. Beirut: Mansyurwarat Dar Maktabah al-Hayah.
- IIUM (n.d). The Last Sermon of Prophet Muhammad (p.b.u.h.). Retrieved February 3, 2018 from <http://www.iium.edu.my/deed/articles/thelastsermon.html>.

- Ismail, A. F., Shuriye, A. O., & Adam, I. A. (2009). The concept of Itqan and its role in Muslim professional life. In: *Ethics of engineering education* (pp. 99-105). Kuala Lumpur: IIUM Press. ISBN 9789833855674.
- Ismail, N. A., & Tekke, M. (2015). Development and Initial Validation of Integrative Islamic Personality Inventory. *IIUM Journal of Educational Studies*, 3(2), 113-130.
- Krauss, S. E. (2005). *Development of the Muslim Religiosity-Personality Inventory for Measuring the Religiosity of Malaysian Muslim Youth*. Retrieved November 13, 2015 from <http://core.ac.uk/download/pdf/12225865.pdf>.
- Mischel, W., Shoda, Y., & Ayduk, O. (2008). *Introduction to Personality* (8th ed.). United States of America: John Wiley & Sons.
- Mohammad. (2009, May 30). Itqan [Web log post]. Retrieved November 1, 2017 from <http://live2taste.blogspot.my/2009/05/itqan.html>.
- Othman, A. K., Hamzah, M. I., & Hashim, N. (2014). Conceptualizing the Islamic Personality Model. *Procedia-Social and Behavioral Sciences*, 130(2014), 114-119. doi: 10.1016/j.sbspro.-2014.04.014.
- Othman, N. (2008). The Development and Validation of the Ummatic Personality Inventory (Unpublished doctoral dissertation).
- Rahman, Z. A., & Shah, I. Md. (2015). Measuring Islamic Spiritual Intelligence. *Procedia Economics and Finance*, 31(2105), 134-139. doi: 10.1016/S2212-5671(15)01140-5.
- Saroglou, V., & Munoz-Gracia, A. (2008). Individual Differences in Religion and Spirituality: An Issue of Personality Traits and/or Values. *Journal for the Scientific Study of Religion*, 47(1), 83-101.
- Siddiqi, M. (n.d). Islam and The Concept of Steadfastness (*Istiqamah*) [Web log post]. Retrieved November 1, 2017 from <https://archive.islamonline-.net/?p=5670>.
- Tekke, M., Ismail, N. A. H., Adnan, M. A. M., & Othman, N. (2015). Students's Islamic Personality On Amanah: A Structural Modelling Approach. *Pertanika J. Soc. Sci. & Hum*, 23(1), pp. 129-138.
- Velasquez, M. G. (1982). *Business ethics: Concepts and cases*. Englewood Cliffs, New Jersey: Prentice-Hall.
- William. L. (1971). *An Introduction to Ethics* (3rd ed). London: Methuen & Co Ltd.
- Zainuddin, Z. I., & Radzi, H. A. (2013). Examining Islamic Perspectives in Medical Imaging Literature: A Study Involving Scopus Indexed Journals. *Revelation and Science*, 03(2), 39-50. Doi: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwiip87vobHJAhWQGo4KHY7NBIYQFgggMAA&url=http%3A%2F%2Fjournals.iium.edu.my%2Frevival%2Findex.php%2Frevival%2Farticle%2Fdownload%2F98%2F100&usg=AFQjCNEY_iBatAW52aTq75z2uYsJbCZITw.
- Zaroug, A. H. (1999). Ethics from an Islamic Perspective: Basic Issues. *The America Journal of Islamic Social Sciences*, 16, 54.

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