ISLAMIC PERSONALITY IN MEDICAL IMAGING

BY

SITI MARYAM BINTI MUHAMAD RUZLAN

A thesis submitted in fulfilment of the requirement for the degree of Master of Health Sciences

Kulliyyah of Allied Health Sciences International Islamic University Malaysia

APRIL 2019

ABSTRACT

There is little to suggest the researches on the aspect of Islamic perspectives in Medical imaging practices including the concept of Islamic personality. The purpose of the study was to identify the Islamic personality as applicable to Muslim Medical imaging practitioners. There are multi-approaches were used for conducting the study. Firstly, the existing Medical imaging professional guidelines were examined for identifying the Professional personality traits in Medical imaging domains by using thematic analysis. Then, these traits were aligned to the relevant Islamic personality traits accompanied with the discussions from the Islamic perspectives. The findings from the study on the guidelines were brought forward for the formulation of a questionnaire. The questionnaire was used to study the knowledge, attitudes, practice, and perception about the Islamic personality in Medical imaging domains in International Islamic University Malaysia Medical imaging students. Positive findings were identified in terms of the attitudes towards the applications and perceptions on the importance of assessing one's Islamic personality in Medical imaging. Further actions are necessary in the aspects of knowledge and practices on the applications of the Islamic personality in Medical imaging among the students. This includes the processes of internalization of Islamic personality traits in the Medical imaging studies in which forming a conceptual framework for addressing the particular matter. In brief, the conceptual framework on the internalization of Islamic personality traits incorporates the planning processes of integration and assessment. This involves the roles of academicians and students in the integration, and the assessment tools for assessing the effectiveness of the processes of integration and internalization. For the assessment of the integration processes, more explorations are needed to be done in order to set the measures in formulating an assessment tool for this particular aspect. In conclusion, the objective of the study was fulfilled. The concept and applications of the Islamic personality traits as applicable to Muslim Medical imaging practitioners were outlined.

خلاصة البحث

لا تتوفر إلا القليل مما يشير إلى وجود أبحاث متعلقة بالمنظور الإسلامي حول ممارسات التصوير الطبي، بما في ذلك مفهوم الشخصية الإسلامية. كان الهدف من هذه الدراسة هو تحديد الشخصية الإسلامية المنطبقة على ممارسي التصوير الطبي من المنظور الإسلامي. هنالك طرق متعددة تم استخدامها لإجراء الدراسة. أولا، تم فحص المبادئ التوجيهية المهنية الحالية للتصوير الطبي لتحديد سمات الشخصية المهنية في مجالات التصوير الطبي، باستخدام التحليل الموضوعي. بعد ذلك تمت محاذاة هذه السمات مع السمات المتعلقة بالشخصية الإسلامية، إلى جانب مناقشات تتغلق بالمنظور الإسلامي. تم تقديم النتائج التي توصلت إليها الدراسة حول المبادئ التوجيهية لصياغة استبيان، حيث تم استخدام هذا الاستبيان لدراسة المعرفة، والسلوكيات، والممارسات، والمفاهيم حول الشخصية الإسلامية في مجالات التصوير الطبي بين طلاب التصوير الطبي بالجامعة الإسلامية العالمية الإسلامية. تم تحديد نتائج إيجابية من حيث السلوكيات تجاه التطبيقات ومن حيث التصورات حول أهمية تقييم الشخصية الإسلامية في التصوير الطبي. من الضروري اتخاذ المزيد من الإجراءات من حيث المعارف والممارسات المتعلقة بتطبيقات الشخصية الإسلامية في التصوير الطبي بين الطلاب. ويشمل ذلك عمليات استيعاب سمات الشخصية الإسلامية في دراسات التصوير الطبي التي تشكل إطارًا مفاهيميًا لمعالجة المسائل المحددة. يتضمن الإطار المفاهيمي لاستيعاب السمات الشخصية الإسلامية، عمليات التخطيط للدمج والتقييم، ويشمل ذلك أدوار الأكاديميين والطلاب في الدمج، وأدوات لتقييم فعالية عمليات الدمجوالاستيعاب. لتقييم عمليات الدمج فإن هناك حاجة إلى مزيد من الاستكشافات من أجل تحديدالقياساتلصياغة أداة تقييم لهذا الجانب بالذات. في الختام، تم تحقيق هدف هذه الدراسة، وتم تحديد مفهوم وتطبيقات سمات الشخصية الإسلامية المنطبقة على ممارسي التصوير الطبي المسلمين.

APPROVAL PAGE

I certify that I have supervised and read this study to acceptable standards of scholarly presentation a quality, as a thesis for the degree of Master of Hea	and is fully adequate, in scope and
	Zainul Ibrahim bin Zainuddin Supervisor
	Nor Azlina binti A. Rahman Co-Supervisor
I certify that I have read this study and that in my standards of scholarly presentation and is fully ad thesis for the degree of Master of Health Sciences	equate, in scope and quality, as a
	Ibrahim Adam Ahmad Shogar Internal Examiner
	Hamzani bin Abdul Hamid External Examiner
This thesis was submitted to the Department of D and is accepted as a fulfilment of the requirement Sciences.	
	Sayed Inayatullah Shah Head, Department of Diagnostic Imaging and Radiotherapy

as a fulfilment of the requirement for the degree of Master of Health Sciences.	
	Suzanah Abdul Rahman
	Dean, Kulliyyah of Allied Health
	Sciences

This thesis was submitted to the Kulliyyah of Allied Health Sciences and is accepted

DECLARATION

I hereby declare that this thesis is the result of my own investigation, except where

otherwise stated. I also declare that it has not been	n previously or concurrently
submitted as a whole for any other degrees at IIUM or or	ther institutions.
Siti Maryam Muhamad Ruzlan	
Signature	Date

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

DECLARATION OF COPYRIGHT AND AFFIRMATION OF FAIR USE OF UNPUBLISHED RESEARCH

ISLAMIC PERSONALITY IN MEDICAL IMAGING

I declare that the copyright holder of this thesis is Siti Maryam Muhamad Ruzlan

Copyright © 2019 by Siti Maryam Muhamad Ruzlan. All rights reserved.

No part of this unpublished research may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without prior written permission of the copyright holder except as provided below.

- 1. Any material contained in or derived from this unpublished research may be used by others in their writing with due acknowledgement.
- 2. IIUM or its library will have the right to make and transmit copies (print or electronic) for institutional and academic purposes.
- 3. The IIUM library will have the right to make, store in a retrieval system and supply copies of this unpublished research if requested by other universities and research libraries.
- 4. By signing this form, I acknowledged that I have read and understand the IIUM Intellectual Property Right and Commercialization policy.

Siti Maryam Muhamad Ruzlan	
Signature	Date

ACKNOWLEDGEMENTS

All praises to Allah SWT Who has granted me with courage in completing this thesis. I would like to thank to all participants from the Department of Diagnostic Imaging and Radiotherapy, Kulliyyah of Allied Health Sciences who give up their time to participate in this study. I hope that piece of this research will give some positive impacts towards the realization of International Islamic University Malaysia (IIUM) mission on Integration and Islamisationin the field of Medical imaging.

In preparing the thesis, I was in contact with many other researchers and academicians. They have contributed a lot towards my understanding and thoughts. In particular, I wish to express my sincere appreciation to my principal supervisor, Asst. Prof. Dr. Zainul Ibrahim B. Zainuddin, for the encouragement, guidance, critics, and friendship. I am also very thankful to my co-supervisor, Asst. Prof. Dr. Nor Azlina Bt. A. Rahman, for her guidance and advice in the statistical part. Supervision was always encouraging and I believe that I have learnt valuable lessons about conducting the research for these sessions which I hope to continue to develop. Without their continued support and interest, the thesis project would not have been the same as presented here. To all my postgraduate friends, thank you for your support and being the best friends in this journey. Hope our friendship will never end.

My sincere appreciation extended to all of the staffs and members of Kulliyyah of Allied Health Sciences, Office of Postgraduate Studies of Kulliyyah of Allied Health Sciences who have provided assistance in various occasions. Their concerns about the flow of the study are indeed have made the processes run smoothly.

Finally, special thanks to my family members, especially my beloved mother and father, Sharifah Rahinah Bte. Syed Abd. Rahman and Muhamad Ruzlan B. Musanih, for their continuous prayers and motivation. Without the supports in various aspects, I would not possibly have strength to complete the research and thesis. Last but not least, all praises to Allah for giving me the chance for finishing the study and finally, I can finish my master.

TABLE OF CONTENTS

Abstract	ii
خلاصةالبحث	iii
Approval Page	iv
Declaration	vi
Declaration of copyright and affirmation of fair use of unpublished research	vii
Acknowledgements	viii
Table of Contents	ix
List of Tables	xii
List of Figure	xiii
CHAPTER ONE: INTRODUCTION	1
1.1 Introduction 1.2 Background of the Study 1.3 Statement of the Problem 1.4 Research Questions 1.5 Research Objectives 1.6 Significance of the Study 1.7 Organisation of the Thesis CHAPTER TWO: LITERATURE REVIEW	2 6 7 7 8
2.1 Introduction 2.2 Overview of Medical Imaging Theory and Practices 2.3 Overview of Character and Personality 2.4 Overview of Islamic Personality 2.4.1 Islamic Character 2.4.2 Ethics and Islamic Ethics 2.4.3 Values and Islamic Values 2.4.4 The Concept of 'Ulum al-Akhlaq 2.5 Summary of the Review	12 14 16 18 20 20
CHAPTER THREE: ADDRESSING ISLAMIC PERSONALITY TRAITS IN MEDICAL IMAGING	24
3.1 Introduction	
3.2 Literature Review	25

3.2.1 Medical imaging Professional Guidelines	25
3.2.2 Medical imaging Professional's Attributes / Traits	27
3.2.3 Islamic Perspectives in Medical imaging	
3.2.4 Islamic Personality Traits	29
3.3 Methodology	30
3.4 Results and Discussions	31
3.4.1 Lists of the Medical imaging Professional Guidelines	31
3.4.2 The Identified Professional Personality Traits	32
3.4.2.1 Respect	
3.4.2.2 Safe Practice	33
3.4.2.3 Safe Activity	34
3.4.2.4 Equality	34
3.4.2.5 Trustworthiness	35
3.4.2.6 Honesty and Integrity	36
3.4.2.7 Truthfulness	
3.4.2.8 Responsible and Accountable	37
3.4.2.9 Compassionate	38
3.4.2.10 Good Reasoning	38
3.4.2.11 Being Up-to-date	39
3.4.2.12 Competence	40
3.4.2.13 Teamwork	
3.4.2.14 Self-examination	41
3.4.2.15 Dignity	
3.4.2.16 Ethical conduct	
3.4.2.17 Adhere to Laws and Regulations	
3.4.2.18 Effective Communication	
3.4.2.19 Life-long Learning	
3.4.3 The Islamic Personality Traits and the Applications	
3.4.3.1 Al-'Adl (Justice)	
3.4.3.2 Ta'awun (Co-operation)	
3.4.3.3 Fulfilling the Contracts	
3.4.3.4 Responsible and Accountable	
3.4.3.5 Showing Good Manners	
3.4.3.6 Muhasabah (Self-accountability)	
3.4.4 The Applications as per Medical imaging Domains	
3.4.4.1 Professionalism Domain	
3.4.4.2 Patient care Domain	
3.4.4.3 Technicalities or Procedures Domain	
3.4.4.4 Safety and Security Domain	
3.4.4.5 Use of technology Domain	
3.4.4.6 Research Domain	
3.4.4.7 Resources management	
3.6 Conclusion	72
	CINC
CHAPTER FOUR: THE ISLAMIC PERSONALITY IN IIUM MEDICAL IMA STUDENTS (A CASE STUDY)	
STODENTS (A CASE STODT)	13
4.1 Introduction.	73
4.2 Literature Review	
	, 1

4.3 Methodology	78
4.4 Results and Discussions	80
4.4.1 Demographic Data	80
4.4.2 Students' Knowledge on the Applications of IP in Medical imag	
Domains	_
4.4.3 Students' Attitudes on the Applications of IP in Medical imagin	g
Domains	
4.4.4 Students' Practices on the Applications of IP in Medical imagin	g
Domains	99
4.4.5 Students' Perceptions on Assessing IP in Medical imaging	
Practices	105
4.5 Conclusion	111
CHAPTER FIVE: A CONCEPTUAL FRAMEWORK FOR INTERNALISING	
ISLAMIC PERSONALITY IN MEDICAL IMAGING	113
5.1 Introduction	
5.2 The Conceptual Framework	115
5.2.1. Conceptual Framework	115
5.2.2 Introduction to Integration	116
5.2.3 Role of the Academician / Lecturer	118
5.2.3.1 Conventional Educational Pedagogies	118
5.2.3.2 Islamic Pedagogy	126
5.2.3.3 The Qur'anic Approaches in Inculcating Islamic Values	128
5.2.3.4 Integrated Curriculum	
5.2.3.5 General Considerations for Academicians	141
5.2.4 Role of Student Characteristics	145
5.2.4.1 An Overview of Human Generations	145
5.2.4.2 Student Learning Styles	150
5.2.4.3 Student Learning Preferences	152
5.2.5 The Conceptual Framework for the Internalization of IPT	154
5.3 Assessing the Islamic Personality in Medical Imaging	
5.3.1 Purpose of the Assessment	156
5.3.2 Overview of Islamic Personality Tests	157
5.3.3Methodology of Assessment	162
5.4 Conclusion	
CHAPTER SIX: CONCLUSION	164
6.1 Conclusion	164
REFERENCES	166
APPENDICES	184
Appendix A	
Appendix B	
Appendix C	
Appendix D	205

LIST OF TABLES

Table 3.1	Islamic personality traits and Professional personality traits	46
Table 4.1	Students' knowledge on the applications of Islamic personality in Medical imaging domains	82
Table 4.2	Students' attitudes on the applications of Islamic personality in Medical imaging domains	93
Table 4.3	Students' practices on the applications of Islamic personality in Medical imaging domains	99
Table 4.4	Students' perceptions on the importance of assessing one's Islamic personality in Medical imaging practices (Ranking)	105
Table 4.5	Students' perceptions on the importance of assessing one's Islamic personality in Medical imaging practices	107

LIST OF FIGURES

Figure 5.1 A conceptual framework for the internalization of IPT 154

CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

Personality has been perceived as an inner system of a person that is recognized through the way of someone thinks, feels, and reacts towards something. It can be changed through certain processes such as learning and habituation. Although the word "personality" initially comes from the conventional perspective, the essence of the terminology is very close to the Arabic term "akhlaq" which means natural or learnt habits, or behavior (Omar, 2003). In Islam, akhlaq or personality must be primarily guided by the Holy Qur'an and Hadith of the Prophet Muhammad (Peace be upon him). This forms the term "Islamic personality". The presence of various Islamic personality tests developed by Muslim scholars purport the efforts for understanding the concept of personality from the Islamic point of view. Adoption and adaption of these tests into this study can be helpful for developing the concept of Islamic personality as applicable for Muslim Medical imaging practitioners.

Medical imaging as a sub-specialisation of Medicine deals with the handling of Medical imaging modalities as well as the patients and other professionals. Medical imaging domains include professionalism, safety and security, patient care, use of technology, technicalities and procedures, research, and resources management. The humanistic component in Medical imaging involves the task of dealing with people such as the patients and other healthcare practitioners (Zainuddin and Radzi, 2013). The International Islamic University Malaysia (IIUM) is one of the higher educational institutions that promotes and practices the mission of Integration and Islamization of

Human Knowledge in the studies. For this purpose, the current study is an attempt of infusing the Islamic values into Medical imaging via the Islamic personality aspect. As a Muslim practitioner in the Medical imaging field, there is a need for specific professional attributes to ensure the highest integrity in the profession. Islamic personality can be an aspect to be considered in the Medical imaging practices in the light of Integration and Islamisation.

Other considerations that need to be noted are the *Qur'anic* verses quoted within the text (*italic*) which is cited as "*The Qur'an*" is based on the Abdullah Yusuf Ali (2007), The Meaning of the Holy *Qur'an*: Text, Translation and Commentary. The *Qur'anic* verses that have the interpretation by Ibn Kathir (n.d) will be quoted as within the reference. In referring to the Prophet Muhammad (Peace be upon him), other terminologies were also written in the text such as "the Messenger of Allah", "the Prophet (Peace be upon him)", and "the Messenger (Peace be upon him)".

1.2 BACKGROUND OF THE STUDY

This section draws the key concepts for the formulation of the whole study; "Integration" and "Islamisation". Integration and Islamisation has been one of the missions of the International Islamic University Malaysia (IIUM). The concepts of Islamisation of Knowledge and the integration of Islamic perspectives in the curriculum are highly emphasized at IIUM. The concepts have been applied into all of the fields of study at IIUM. Integration here means the process of articulating the religious sciences and modern sciences (Amin, Yusof, and Haneef, 2012). To the authors, religious sciences include the science of the Holy *Qur'an*, the Prophet's Tradition (*Hadith*), Oneness of God (*Tawhid*), Islamic worldview, the Islamic Laws (*Shari'ah*), Arabic language and other sciences of Islamic heritage. Meanwhile,

modern sciences are the science of human, social, natural, applied and technology. Islamisation is taken as a process to islamise the aspects of faith, belief, or worldview and thus it is applied to human beings (Hashim and Abdallah, 2013). These authors applied the terms, Islamisation, to relate the process of producing Muslim professionals who love parallel with the 'aqidah (creed), shari'ah (law), and akhlaq al-karimah (good character).

The agenda of Integration and Islamisation of knowledge calls for Muslims to live, work, and act in accordance with the 'Aqidah (creed), the Shari'ah (Divine Way), and Akhlaq (ethics) of Islam. This agenda was formulated with the aim to guide the Muslims to achieve the goals of "al-Hasanah fi al-Dunya" (wellbeing in this world) and "al-Hasanah fi al-Akhirah" (wellbeing in the Hereafter) (IIUM Policies and Guidelines and Islamisation, 2013). Extending those goals is the effort that gives emphasis to the aspect of personality in Muslim Medical imaging practitioners. Attempts to develop a specific measurement tool to assess the effectiveness of the mission "to produce better quality intellectuals, professionals and scholars by integrating the qualities of faith (iman), knowledge ('ilm) and good character (akhlaq)" (IIUM Policies and Guidelines on Islamisation, 2013), in each field of sciences such as Medical imaging should be explored. However, the initial steps such as clarifying the Islamic personality traits as applicable to Muslim Medical imaging practitioners and formulating a conceptual framework towards the purpose need to be done.

This study was conducted in order to fill the gaps of the discussions of the Islamic perspectives in the Medical imaging field. In order to achieve that, the aspect of Islam that is to be highlighted needs to be specified. Islamic personality is an important aspect that should be emphasized within the Medical imaging practitioners.

This is because, besides the technicalities in the Medical imaging practices, there is also the humanistic aspect within the practices that needs special attention. Although there are guidelines for addressing the ethical aspect in the Medical imaging, it is still lacking in terms of the conceptions from the Islamic perspectives. Therefore, attempts for formulating the specific conception for the Islamic perspectives in the Medical imaging should be furthered investigated, in this case is the Islamic personality.

1.3 STATEMENT OF THE PROBLEM

The outcomes of the implementation of the concept of Integration and Islamisation of knowledge should produce the graduates well-equipped with all requirements in order to undergo the future as a Muslim professional in any field. IIUM has put some efforts in order to analyse the performance of IIUM graduates by conducting the online Tracer Study. While the Tracer Study examines the general performance of the graduates, the assessment for the achievement of this particular mission has yet to be established at the subdivision level of each Kulliyyah. This includes the Department of Diagnostic Imaging and Radiotherapy under the Kulliyyah of Allied Health Sciences. The assessment of performance at the lower level in an institution is very essential in order to ensure that every single building block of the organization is in a well-ordered condition as eventually they will reflect the image of the entire institution. An area of particular concern will be those involving the Islamic personality in the graduates.

From the Islamic perspective, the aspect of Islamic personality is one of the areas that needed to be enhanced by every Muslim. The Islamic personality traits that are portrait by a Muslim individual are a manifestation of the correct understanding and applications of the Islamic teachings. The general applications of the Islamic

personality concept might be easily appreciated by large community of Muslims. However, it is not often being discussed as pertains to the practices in the Medical imaging field.

The unavailability of a measurement tool to assess the effectiveness of Integration and Islamisation processes in the IIUM Medical imaging students might give negative impacts in several ways. The effects can fall on the university, students, expectations from academic and general community perspectives, as well as the Medical imaging profession and personnel. The university might not be able to evaluate the level of effectiveness of the Integration and Islamisation mission based on the students produced. The assessment for the achievement of the mission in the Medical imaging department level is still not realized yet due to the lack of specific measurement tool. By the end of the four-year studies, the students might not aware about the desired Islamic Personality Traits specific to their field of study, that they were supposed to internalized upon finishing their learning processes. The academic approaches may remain static if the academic circle remains oblivious to the outcome of their graduates. As a consequence, the general community will also not be able to appreciate the significance of integration and Islamisation of the educational system in terms of the Muslim character development.

Prior to the assessment of performance, the awareness on the applications of the concept of Integration and Islamisation in their field of studies needs to be evaluated as well. This is important in order to identify whether or not the process of internalization of the concept of Islamic personality within the students has taken place. Due to the fact that there is little evidences on the concept of Islamic personality in Medical imaging, effort to conceptualise the Islamic personality traits as applicable to Medical imaging practitioners should be made. The conceptualization of

the Islamic personality in Medical imaging can give a view for the researcher in understanding the aspects of Islamic personality with respect to the practices in Medical imaging field. Then, the findings from the conceptualization of the Islamic personality in Medical imaging can be utilized as the basic framework for studying the awareness on the Islamic personality in the students. The outcomes may give an interpretation of the students' understanding on the concept of the Integration and Islamisation mission held by IIUM, as shown through the level of awareness on the Islamic personality in the Medical imaging profession. At the same time, this will create the awareness within the students about the need of specific conceptual framework on Islamic personality for Muslim Medical imaging practitioners.

1.4 RESEARCH QUESTIONS

This study is guided by the research questions:

- 1. What are the Professional personality traits and Islamic personality traits for Medical imaging practitioners from the existing literatures?
- 2. What is the status of awareness on Islamic personality as applicable to Medical imaging among the IIUM Medical imaging students in terms of knowledge, attitude, practice, and perception?
- 3. What are the aspects to be considered in addressing the findings of the results from (1) and (2)?

1.5 RESEARCH OBJECTIVES

This research aims to achieve the following objectives.

General objective:

The general objective for this research is to study the Islamic personality traits as applicable for Muslim Medical imaging practitioners.

Specific objectives:

- To identify the Professional personality traits (PPT) from the existing Medical imaging professional guidelines and align to the relevant Islamic personality traits (IPT).
- To study the level of awareness on the Islamic Personality specific to Medical imaging practitioners among IIUM Medical imaging students.
- 3. To propose a conceptual framework on internalizing the Islamic personality traits in IIUM Medical imaging students.

1.6 SIGNIFICANCE OF THE STUDY

This study identifies the Professional personality traits (PPT) from the existing Medical imaging professional guidelines and aligns them to the Islamic personality traits (IPT). The findings can be used for understanding the relationships between both types of traits. Since there is little to suggest the discussion on Islamic personality in Medical imaging, the alignment of the traits can be applied into the formulation of the concept of Islamic personality as applicable in Medical imaging. This concept of Muslim Medical imaging personality will be adopted as a basis to examine the status of awareness on the applications of the concept of Islamic personality in IIUM Medical imaging students. This is in order to seek a general view on the internalization of Islamic values in IIUM Medical imaging students in this case, the

aspect of Islamic personality. Studying the awareness on the Islamic personality in the Medical imaging students can give a general picture of where the students stand in terms of applying the Islamic values in practice. This could initiate the efforts of formulating the conceptual framework in encountering the lacking in the particular aspect. This study can be beneficial for the purpose of applying the concept of Islamic personality not only in the Medical imaging but also in other related sciences field of studies.

1.7 ORGANISATION OF THE THESIS

This section served to summarise the organization of chapters in the thesis. Chapter one is prepared for introducing the whole thesis. It forms the introduction; research background; statement of problem; research questions and objectives; and significance of the study. Under Chapter One, the objectives, methodology, general results, discussions and conclusion for each chapter were explained in brief in the next paragraphs.

Chapter Two is the overall literature review as for the thesis. The content has its own organization for explaining the concepts as the main discussion of the study. The literature reviews were done in order to identify the literatures addressing the Islamic personality in the Medical imaging field. The searches failed to find any discussion on the selected aspect. However, there were several works addressing the Islamic perspectives issues in the Medical imaging field such as the works by Zainuddin and Radzi (2013), and Zainuddin (2014; 2015). This had triggered for the exploration of the basic concepts that constitute the Islamic personality such as, character, ethics and values. The literature reviews outlined the basic concepts of Islamic personality and in relation to the theories and practices of Medical imaging.

Chapter Three discussed about the Professional personality traits in relation to the Islamic personality traits. The dearth of literatures on the Islamic perspectives in Medical imaging had brought to the efforts of developing the Islamic personality concepts as applicable to Medical imaging practices. This was done by the examinations the professional personality traits from ten Medical imaging professional guidelines from various countries and organizations. The statements within the guidelines were listed and analysed one by one to categorize the common themes (traits) extracted from the statements in the guidelines. Among the traits are respect, trustworthiness, truthfulness, competence, and life-long learning. The identified Professional personality traits were then incorporated with the Islamic personality accompanied with the Islamic references such as the Qur'anic verses, Hadiths, as well as the thoughts of the Muslim scholars. The discussions specified the applications of the Islamic personality traits in Medical imaging. The correlations were specified under the Medical imaging domains such as Professionalism, Patient care, Safety and security, and Use of technology. There were nineteen Professional personality traits identified from the professional guidelines and these traits were related to sixteen Islamic personality traits. However, the number of the traits that were presented in the results and discussions are not exhaustive and still open for further discussions.

Chapter Four studied the awareness of International Islamic University Malaysia (IIUM) Medical imaging students on the Islamic personality in Medical imaging field. The study was done at IIUM by means of face to face self-administered questionnaire. There were 36 respondents included whose from third and fourth year students through a convenience sampling. The data were then analysed and presented by using the percentage scores of the respondents' answers. The discussions explained

the status of knowledge, attitude, practice, and perception of the students in relation to the application of the Islamic personality in Medical imaging. Several prominent aspects that need attentions are the deep understanding about the concept of Islamic personality in knowledge and the contribution in research in terms of practices. Positive findings were indicated for the overall attitudes towards the applications and perceptions on assessment of Islamic personality in Medical imaging. These aspects need attention for further actions.

Chapter Five outlines the components of which are needed for the internalization of Islamic personality traits (IPT) in Medical imaging. The finding of Chapter Three and Four help in the formulation of the conceptual framework in Chapter Five, the internalization of Islamic Personality traits in Medical imaging. The main processes of internalization include the integration and assessment. The components for integration are academicians or lecturers and the characteristics of the students who have their own role in order to increase the effectiveness of the internalization processes. Identifying the methodologies and having good personal attributes for academicians and identifying the preferred learning styles for students are among the core element in the internalization of IPT. The assessment was discussed in terms of the effectiveness of the integration and internalization. The internalization can apply Tracer study and the integration process needs for specific tool to measure the Islamic personality. This chapter formed the conceptual framework for the internalization of IPT in Medical imaging studies.

Lastly, the concluding chapter summarized the content and the implications of each chapter. This chapter summed up the findings for each chapter and the impacts that they could contribute on the study. This chapter is a synopsis for the main discussions in the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter outlines the literatures on what constitutes the concept of Islamic personality in Medical imaging as aligned to the title of the thesis. In order to determine a concept of Islamic personality as applicable in Medical imaging, several questions need to be answered. What is the state of affairs pertaining to Islamic personality as evident in the literatures? Are there any works that address Islamic personality in the Medical imaging?

There is little to suggest the literatures on Medical imaging and Islamic perspectives. This is an indication of the need for further investigation on how to integrate the Islamic perspectives in the Medical imaging field. In a study, there were only 6 out of approximately 341 000 articles published in SCOPUS indexed journals that were related to the Islamic perspectives in Medical imaging (Zainuddin and Radzi, 2013). This shows the dearth of Islamic perspectives in Medical imaging studies. The researcher made efforts on searching the Islamic personality using the "Google" search engine. What would be the status of documents on the Islamic personality in Medical imaging?

For the purpose of this review, the use of "Google Search" is optimised by entering the keywords, such as "Personality", "Islamic personality", "Muslim personality", "Islamic character", "Muslim character", "Medical imaging", "All years" and "All documents". There was no document found to be matched to these quoted keywords. Then, efforts to find the works related to Islamic personality began