

UNIVERSITI TEKNOLOGI MARA

**DESIGN GUIDE FOR KANSEI
SPIRITUAL THERAPEUTIC ROBOT
INTERACTION (KS-TRI)**

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Thesis submitted in fulfilment
of the requirements for the degree of
Master of Science
(Information Technology)

Faculty of Computer and Mathematical Sciences

June 2018

ABSTRACT

Malaysia is expected to become an aging nation by 2030 in which 15% of the population is aged 60 years and above which entails a rise in the number of elderly in the nation, and challenges they faced in their daily lives. The trend shows that there is already an increasing demand of caregiving, especially for Alzheimer cases. Result obtained from the preliminary study showed that the early stages of the Alzheimer's disease affects elderly' memory in terms of performing tasks in their daily lives and need assistance and support from family members or caregivers. The result also revealed that they often forget spiritual practices and when it happened, they become sad, moody and sometimes act fiercely. Meanwhile, robot interaction has been introduced in countries such as Japan and Denmark to improve the elderly emotion. In Malaysia, several researches have been performed, but none has looked at the feasibility of robot interaction as potential solution to their emotional wellbeing. Hence, this research aims to propose solution for the matter with the use of robot interaction focusing on spiritual aspect, which was suggested as the cause of negative emotion from preliminary study. The objectives of this research are, i) to identify the suitable spiritual emotion words for the Kansei Spiritual Therapeutic Robot Interaction (KS-TRI) by adoption of KJ method, ii) to determine spiritual design elements for the KS-TRI by interview method, iii) to propose a design guide for spiritual practices in the KS-TRI by using in-depth interview, and emotion checklist. The investigation employs 5 elderly, 4 elderly experts, spiritual experts, and robot experts, and 1 caregiver. The findings revealed that the use of robot interaction with embedded spiritual design elements can become therapeutic medium and derive positive emotions as it helps improve their memory and thus helps their spiritual practices, and enable the research to propose design guide for KS-TRI. This KS-TRI is significant for elderly suffering from early stages of the Alzheimer's disease where they benefit the technology in raising their positive emotion and performing spiritual practices. This research has its limitation where it only focuses on Malay Muslim elderly, and thus the result is bias to this target group, and cannot be used to the general elderly. Further research is recommended to a wider population and scope to enhance the findings and design a more generalized design guide for KS-TRI.

ACKNOWLEDGEMENT

Firstly, I wish to thank God for giving me the opportunity to embark on my Msc and for completing this long and challenging journey successfully. My gratitude and thanks go to my supervisor Assoc. Prof. Dr. Anitawati Binti Mohd Lokman and co-supervisor Dr. Fauziah Binti Redzuan for their constant guidance and encouragement, and without which this thesis would not have been possible. Thank you for always believed in my research and provide numerous constructive comments, support, patience and ideas in assisting me with this project. I cannot find adequate words to express the inspiration and support that have been given to me, from the beginning through to this point.

I am also indebted to all my lecturers and my colleagues here who have helped me continuously during my difficult situations, and whom have never failed to make me happy even during the stressful years of the study process.

Finally, this project is dedicated to my family for always being patient with me and supporting me throughout my years of study and through the process of writing this thesis. This accomplishment would not have been possible without them. Thank you. Alhamdulillah.

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CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

Design Guide for Kansei Spiritual Therapeutic Robot Interaction (KS-TRI) is a study about a significant relationship between Kansei-spiritual design elements of spiritual practices in therapeutic robot interaction and the quality of life (QoL) of the elderly with Alzheimer's disease at an early stage. This research study aims to formulate design guide for a therapeutic robot which is embedded with Spiritual Design Elements to assist Malay Muslim elderly with early Alzheimer's to perform spiritual practices and eventually improves their emotional wellbeing. Generally, the design guide helps to manually understand something, especially something that is new according to the related topic. Specifically, the design guide in this study is invented to help drive knowledge over new studies that bring benefits to related parties in society.

The domains of this research are therapeutic robots which is humanoid robot and Malay Muslim elderly with early Alzheimer's lives. The research is also grounded on using the Kansei concept which refers and relates to emotions. The aim of this research is to formulate design guides for Kansei Spiritual Therapeutic Robot Interaction (KS-TRI) for the elderly with Alzheimer's disease at an early stage. The objectives for this research are to identify the spiritual emotion words for Kansei Spiritual Therapeutic Robot Interaction (KS-TRI), to determine the spiritual design elements for Kansei Spiritual Therapeutic Robot Interaction (KS-TRI) and to propose a design guide for spiritual practices in Kansei Spiritual Therapeutic Robot Interaction (KS-TRI).

Chapter 1 discussed about the overview of the research. This chapter covers the subtopic such as background of the study, problem statements, research questions, research objectives, and research scopes as well as research significances.