A CROSS SECTIONAL STUDY ON PERCEPTION OF DOCTORS AND NURSES TOWARDS END OF LIFE CARE IN INTENSIVE CARE UNIT

BY:

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I am forever indebted to my parents Mr. Teh Aesy and Madam Puah Sau Lee whom no replacement can substitute their kindness and care, their patience and love in perpetuating and upholding virtues especially to their children.

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Finally I dedicate this dissertation to my wife, Iry Kimberley Joannes and my daughter, Gladys Teh Chen Xi for their unconditional love.

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ABSTRAK

Pengenalan : “End of life care” merupakan salah satu matlamat penting dalam rawatan rapi. Data terdapat yang terhad mengenai “end of life care “ di negara kita.

Objektif : Mengenal pasti persepsi doktor dan jururawat terhadap "End of Life Care” di unit rawatan rapi and mengenal pasti faktor-faktor perawat terhadap sikap ‘End of Life Care”.

Reka Bentuk Kajian : Kaedah kajian adalah kajian tinjauan deskriptif menggunakan soal selidik di antara 65 doktor dan 123 jururawat daripada unit rawatan rapi(ICU) di Hospital Universiti Sains Malaysia dan Hospital Raja Perempuan Zainab II. (Mei-Desember 2016)

Keputusan : Berbanding dengan doktor (11%), Jururawat(44%) lebih menyokong pernyataan “ withholding or withdrawing life support” adalah tidak beretika. Terdapat 58% doktor and 10% jururawat berpendapat “withholding and withdrawing” mempunyai etika yang sama. Lebih daripada 65% doktor dan jururawat berpendapat faktor utama dalam memberi kata putus mengenai EOL ialah “patient and family centered factor and religious view.(pandangan agama)”

Apabila “life support” diberhentikan, doktor akan meneruskan ubat “ sedative and analgesic” berbanding dengan jururawat. Ianya adalah signifikan secara statistik. ($P<0.05$) 50% doktor dan jururawat akan meneruskan pemberian nutrisi. Terdapat 85% doktor and jururawat bersetuju ICU doktor secara majoriti akan memulakan perbincangan “EOL’. Jururawat memainkan peranan minoriti. (<5%)

Dalam analisis multivariable, jururawat yang tidak mempunyai pengalaman dalam “EOL” adalah 62% lebih menyokong EOL care. [ORa: 0.376 (95% CI: 0.168, 0.837), P=0.02]

Tafsiran keputusan tersebut perlu menimbangkan posisi “subordinate” di kalangan jururawat dalam pusat rawatan kita. Pekerjaan, jantina dan tempat kerja tidak mempunyai perkaitan bererti dengan sikap terhadap “EOL”

Kesimpulan : “Patient and family centered factor and religious view(pandangan agama)” adalah faktor utama dalam memberi kata putus mengenai EOL. Penekanan terhadap persamaan dan perbezaan persepsi EOL care di antara doktor dan jururawat dapat menambahbaik rawatan “EOL’ dan mengurangkan masalah komunikasi.

Kata Kunci : *Rawatan “End Of Life”, Unit Rawatan Rapi, Rawatan “Withholding and Withdrawing”, Rawatan Limitasi, Doktor dan Jururawat.*

ABSTRACT

Introduction: End of life (EOL) care is an important goal in intensive care medicine. There is limited data available in Malaysia.

Objective: To evaluate the perception of doctors and nurses towards EOL care and to evaluate the factors associated with observed attitudes.

Methods: A cross sectional study with self-administered questionnaires conducted among 65 doctors and 123 nurses from intensive care unit (ICU) of Hospital Universiti Sains Malaysia and Hospital Raja Perempuan Zainab II (May-December 2016).

Results: Nurses (44%) were more likely than doctors (17%) to agree with the statement that withholding life support is more ethical than withdrawing life support. There were 58% of doctors and 10% of nurses viewed withholding and withdrawing ethically the same. Over 65% of doctors and nurses considered patient centered factors and religious view were important determinants in EOL decision.

When life support discontinued, more doctors would continue sedative and analgesic drugs than nurses. ($P<0.05$) About 50% of nurses and doctors would continue nutritional support when life support discontinued. Over 85% of doctors and nurses agreed majority of ICU doctors initiated end of life discussion but nurses played minority role.(<5%).

On multivariable analysis, nurses with no experience in end of life were 62% less reluctant to support EOL care. [ORa: 0.376 (95% CI: 0.168, 0.837), P=0.02] Interpretation of this result needs to consider subordinate position of nurses in our setting. There was no

association between the care team's professions, gender, working setting on particular attitudes about EOL care.

Conclusion: Patient and family centered factor and religious view are important determinants in EOL decision. A highlight on similarities and differences on perception in EOL care between doctors and nurses will help improve EOL care and reduce miscommunications.

Keywords *Limitation Of Therapy, Doctors and Nurses, End Of Life Care, Intensive Care Unit, Withholding And Withdrawing*

ABBREVATIONS

CRC	Clinical Research Center
EOL	End Of Life
HREC	Human Research and Ethic Committee
HRPZII	Hospital Raja Perempuan Zainab II
HUSM	Hospital Universiti Sains Malaysia
ICU	Intensive Care Unit
MMA	Malaysian Medical Association
MREC	Medical Research and Ethics Committee
SPSS	Statistical Package for the Social Science
WHO	World Health Organization

1.1 Introduction

The traditional goal of intensive care medicine is to treat reversible life threatening condition while preserving and restoring quality of life. Curative medicine is commonly prioritized ahead of palliative care to reduce morbidity and mortality associated with critical illness. Even so, mortality rate in intensive care unit (ICU) remains high. In Malaysia, mortality rate in ICU reported 18.7% in 2015. (1)

Why consider end of life (EOL) care?

Development of sophisticated technology for use in ICUs enables the caregivers to counteract the effects of disease that, in the past, were surely fatal. In fact, both caregivers and patients have high expectations for cure in the ICUs. However this become apparent to the caregivers that significant number of patients will die of underlying disease and providing sophisticated interventions will only prolong the process of dying.

One of the important goals of intensive care is to allow a dignified death when death appears inevitable or the possibility of restoring meaningful life becomes remote. Glaser and Strauss first described the concept of a 'trajectory of dying' in 1965. This term describes how an eventually fatal condition will change a person's health and functional status over the period of time leading up to their death. It helps in identifying certain patterns and thus assists in prognostication and to signal initiation in communication about dying.

The four trajectories of dying (2) are:

1. Sudden Death : Unexpected, rapid death from causes such as trauma or acute myocardial infarction
2. Terminal illness : Commonly associated with conditions such as cancer, where there is a period of relative wellness until the condition no longer responds to treatment and quickly becomes overwhelming.
3. Organ Failure : Chronic organ dysfunction from conditions such as congestive heart failure results in progressively declining function with periodic acute exacerbation of the underlying condition. Each exacerbation is potentially fatal but prognosis is ambiguous
4. Frailty : A slow but steadily progressive decline in function associated with conditions of advanced ageing such as fraity, dementia and stroke. Death may eventually occur from medical complications such as pneumonia.

The World Health Organization (WHO) defines palliative care as "an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual." (3) WHO has emphasized early identification and discussion on EOL care. In the past, patients first receive curative-restorative care and continue receiving it until it fails then they receive palliative care. Individualized integrated model of palliative care is recommended currently as patients receive palliative care at the onset of critical illness concurrently with curative-restorative care. (4) Palliative care,

which is essential regardless of whether a medical condition is acute or chronic and whether it is in an early or a late stage, can also extend beyond the patient's death to bereaved family members.

End of life care in Malaysian context

EOL care is a relatively new phenomenon in Asian context. The practices of EOL care for life threatening patients are still in its infancy in Malaysia. There is little data exist on EOL care in ICU in Malaysia. However increasing attention on EOL care has been observed. In the updated Management Protocol in ICU 2012, discussion on withholding and withdrawing life support therapy is added.

EOL practice in our ICU is not uncommon. Therapy was withheld or withdrew in 39.4% of death in ICU. (1) There was a wide variability of this practice ranging from 0% to 87%. Without a proper framework or guidelines, EOL decision or practices varies among centers. Follow the trends in many developed countries, the majority of patients in the ICU die because of a clinical decision to withdraw, withhold or limit therapy.

In Malaysia, there is no legal legislation related to EOL care. Euthanasia and assisted suicide may be acceptable in other countries but it is unlawful here. Most of our practices on EOL care hold on the principle based on Malaysian Medical Association (MMA) code of ethic 2001. It mentions where death is deemed to be imminent and where curative treatment appears to be futile, ensure that death occurs with dignity and comfort. Such futile therapy could be withheld, withdrawn or one may allow irreversible pathology to continue without active resuscitation.

Malaysians do not talk about death openly. By being uncomfortable talking about it, means caregivers may have difficult conversations with patients and their families. In

the space of what is unsaid, confusion and uncertainty can reside. SUPPORT STUDY had pointed out there is shortcoming in communication. (5) A good communication can help patients and families understand the limitation of therapy. Phua et al (6) pointed out 35.6% of patients and families requested inappropriate life sustaining therapy.

Attitude and approach to end of life care vary widely amongst religions and cultures. Decisions are influenced by the belief of the caregivers, patients and their families. Malaysian population consists of multiple ethnic groups. Heterogeneity of our society worth evaluate the approaches in end of life care especially the caregivers.

Asia vs West

Western data shows that termination of medical treatment is currently the norm. According to ETHICUS study, 72.6% of deaths in European ICU have limitation of therapy. Of these, withholding of therapy reported 38% and withdrawing of therapy was 33%. (7) In the west, withholding and withdrawing of treatment is considered ethically similar. Phua et al found that 75% viewed withholding and withdrawing therapy ethically different. (6) In India, majority of EOL decision had withholding of therapy. (8) Partial withholding or withdrawing of treatment as a way to help families accept patient's death. (9) Studies on EOL care in Asia are limited. Most of the studies were looking at the perspective of physicians. Study showed attitude and practice of physicians varied widely across countries and regions. Multiple factors, including economic, cultural, religious and legal differences, as well as personal attitudes, were associated with these variations. (6)

Role of nurses

Previous studies also pointed out involvement of critical care nurses in EOL decision in Asian countries lower compare to the West. Yaguchi et al in 2005 showed

proportion of physicians who determined the treatment plan in discussion with nurses was lower in Japan (39%) compared to Northern and Central European countries (62%). (10) However, the role of intensive care nurses in provision of end of life care is important. Nurses are part of interdisciplinary team. Nurses spend entire shift with patients and families and develop trusting relationship. Nurses act as information brokers. Nurses support the patients and families and guide them towards withholding and withdrawal of therapy. (11) Better understanding and communication of both caregivers and help improve the provision of EOL care. Therefore, there is a need to identify the doctors and nurses perspective on EOL care.

2.1 Study Protocol

PROPOSAL FOR DISSERTATION

TITLE: A CROSS SECTIONAL STUDY ON PERCEPTION OF DOCTORS AND NURSES TOWARDS END OF LIFE CARE IN INTENSIVE CARE UNIT.

Investigator :Dr. Teh Tian Siang

Supervisor : Prof Nik Abdullah Nik Mohamad

Introduction

The primary goal of intensive care medicine is to treat reversible life threatening conditions while preserving and restoring a good quality of life. Even so, mortality rate in intensive care units (ICUs) remain high. In Malaysia, mortality rate in ICUs reported 19.9% in 2013. [1]

Why Consider End of Life Care?

Development of sophisticated technology for use in ICUs enables the caregivers to counteract the effects of disease that, in the past, were surely fatal. In fact, both caregivers and patients have high expectations for cure in the ICUs. However this become apparent to the caregivers that significant number of patient will die of underlying disease and providing sophisticated intervention will only prolong the process of dying.

The goal of intensive care medicine are changing to save save lives of salvageble patients with reversible medical conditions and offer the dying a peaceful and dignified death. The direction of treatment is to facilitate recovery of organ dysfunction/failure to a level that results in discharge from the hospital with a quality of life that is acceptable to the patient.

Most of patients die in ICUs because of withholding or withdrawing treatment. Western data shows that termination of medical treatment is currently the norm. Withholding of therapy is reported in 38% of patients and withdrawal of treatment in 33% of European ICUs. [2] Diagnosing dying is part of our core business.

End of life care in Malaysian Context.

End of life care is a relatively new phenomenon in Asian context. The practices of end of life care for life threatening patients still at its infancy in Malaysia. There is little

data exist on end of life care in ICUs in Malaysia. Recently, a consensus statement on withdrawal and withholding of life support in the critically ill adult patient is drafted. Without a proper framework or guidelines, EOL decision or practices varies among centers.

Follow the trends in many developed countries, the majority of patients in the ICU die because of a clinical decision to withdraw, withhold or limit therapy. Euthanasia and assisted suicide may be acceptable in other countries but it is unlawful here.

Attitude and approach to end of life care vary widely amongst religions and cultures. Decisions are influenced by the belief of the caregivers, patients and their families. Malaysian population consist of multiple ethnic groups. Heterogeneity of our society worthwhile evaluate the approaches in end of life care especially the caregivers.

Literature Review.

Mortality rate in intensive care unit reported 10-30% in several studies. End of life decisions, that is decision to limit life sustaining therapy precede many deaths in ICUs. Speed of progress toward dying in ICUs can be varies. How doctors and nurse facilitate and deal with this affect provision of end of life care.

There is paucity of data on end of life care in Malaysia Intensive Care Units. Studies in asia also limited. Much of the studies were looking at the perspective of physicians. Phua and co colleagues conducted a self-administered study in 16 Asian countries in 2015 [3]. The study showed attitude and practice of physicians varied widely across countries and regions. Multiple factors, including economic, cultural, religious and legal differences, as well as personel attitudes, were associated with these variations.

A recent study in Japan reported that the action of switching off the ventilator and extubating, even from dying patients, is believed to bring psychological burden to physicians. Partial withholding or withdrawing of treatment as a way to help families accept patient's death. [4] In the west, withholding and withdrawing of treatment is considered ethically similar. [5] However Asian physicians treat both differently.

Previous studies also pointed out involvement of critical care nurses in EoL decision in Asian countries lower compare to the West. Yaguchi et al in 2005 showed proportion of physicians who determined the treatment plan in discussion with nurses was lower in Japan (39%) compared to Northern and Central European countries (62%). [6] In Durban world congress Ethics Round Table IV, China participants indicated strongly that nurses took no part in end of life decision. Participant from Korea indicated that nurses'

opinions were very rarely expressed.

However, the role of intensive care nurses in provision of end of life care is important. Nurses are part of interdisplinary team. Nurses spend entire shift with patients and families and develop trusting relationship. Nurses act as information brokers. Nurses support the patients and families and guide them towards withholding and withdrawal of therapy. [8]

SUPPORT STUDY had pointed out there is shortcoming in communication. [9] Phua et al pointed out 35.6% of patients and families requested inappropriate life sustaining therapy. A good communication can help patients and families understand the limitation of therapy. Better understanding and communication of both caregivers and help improve the provision of EoL care.Therefore, there is a need to identify the doctors and nurses perspective on end of life care.

Objectives.

General Objective

1. Evaluate perceptions of doctors and nurses towards end of life care in ICUs and association of characteristic of doctors and nurses with attitude in end of life care.

Specific Objectives

1. To determine the mean difference of attitude among doctors and nurses towards end of life care in ICUs.
2. To determine the mean difference of practices among doctors and nurses towards end of life care in ICUs.
3. To identify the associated factors (characteristic of doctors and nurses) with attitude in end of life care.

Hypothesis

Alternative Hypothesis:

Objective 1

There is mean difference in attitude among doctors and nurses towards end of life care.

Objective 2

There is mean difference in practices among doctors and nurses towards end of life care.

Objective 3

There are significant associated factors (characteristic of doctors and nurses) with attitude in end of life care

Methodology

Study Design:

The study is designed as a cross-sectional study, self-administered questionnaire survey.

Study duration:

1 year (January 2016 until January 2017)

Study Population:

1. Doctors and Nurses working at the ICUs at Hospital Universiti Sains Malaysia (HUSM). These include General ICU, Neuro ICU and CCU of HUSM, Kubang Kerian, Kelantan.
2. Doctors and Nurses working at the ICUs at Hospital Raja Perempuan Zainab II (HRPZII), Kota Bahru, Kelantan.

Sampling Method

Sampling method will be Simple Random Sampling.

A list of doctors and nurses practice in the ICU will be obtained. Those do not met the inclusion criteria will be excluded. 69 doctors and 137 nurses will be randomly selected from the list.

Vulnerability

Study respondents will be doctors and nurses practice at ICU. Respondents not include vulnerable group.

Inclusion Criteria:

1. Doctors and Nurses practise at GICU, Neuro ICU and CCU at HUSM.
2. Doctors and Nurses practise at ICU HRPZII.
3. Working experience in intensive care more than 6 months.

Exclusion Criteria:

1. Medical students, Nursing students or Attachment staffs.

Written informed consent was obtained from each participant via a form attached toeach tool and questionnaire. The form explained to the participant the following: the purpose of the study, participant requirements, benefits, risks, and contact information for questions.

A self-administered, questionnaire will be distributed to the respondents. The questionnaire does not solicit any personal information that could link to the responses to specific persons.

Respondents also will be emphasized that their responses would be kept confidential and anonymity would be protected.

Respondents will be asked to finish answering the questionnaire within 20 min upon receiving the questionnaire and will not allowed to discuss among themselves. Participants are asked to complete and submit the completed questionnaire on the same day.

Questionnaire development and content.

Questionnaire was adopted from relevant literature; Burn JP, Mitchell C, Griffith JL, et al 2001. [5] The questionnaire was developed with special attention to clarity and the inclusion of the full range of response option by the local panel of expert in medical ethic, critical care clinicians and survey expert. Clarity and content validity of the questionnaire reassured through a pilot test on 20 local critical care clinicians

Permission to adopt and to modify the questionnaire obtained from Prof Jeffrey Burn. (APPENDIX A) Minor changes to the questionnaire to suit our

population.

Questionnaire consists of 3 sections. Section 1 dealt with demographic data. Section 2 contains 16 attitudinal statements about EOL care. Section 3 comprises 12 statements of practices towards EoL care. A 5 point likert scale will be used for section 2 and section 3 in which 1 will be labeled negatively and 5 will be labeled positively. Demographic data include:

1. Age
2. Gender
3. Religious background
4. Profession
5. Workplace
6. Years of experience in ICU.
7. Experience of teaching in EOL care.

Section 2 will ask respondents opinions on withholding and withdrawing treatment; factors affect decisions to forgo life sustaining treatment and which, if any, medications or therapy should be added or continued as life support is discontinued.

Section 3 focuses on EOL decision. Respondents will be asked questions such as who usually make decision to forgo life sustaining treatments; how conflict between family and caregivers about further life sustaining treatment aer resolved.

Validity and Reliability of Questionnaire.

To ensure the content validity of the questionnaire is suitable with local setting, the questionnaire will be reviewed by 3 critical care clinicians and 3 ward sister. Respondents will rate each questions clarity and content validity.

A pilot study will be conducted to ensure reliability of the questionnaire. 15 doctors and 15 nurses work at intensive care unit of Hospital Queen Elizabeth will be invited to complete the questionnaire. This pilot study will determine the Cronbach alpha of the study tool. Cronbach alpha of ≥ 0.7 consider acceptable.

Sample Size Calculation

Sample size calculated based on previous study.

Objective 1

Sample size calculated using the PS software.Independent T test is used to compare mean from 2 independent groups. Previous study [5] showed the pooled standard deviation (SD) was 1.13.

Parameters needed for sample size computation:

Power = 80%

$\alpha = 0.05$

$\delta = 0.5$ (expert opinion)

$\sigma = 1.13$

$m = 2$

61 doctors and 122 nurses will be needed in order to detect a statistically sigfinicant between 2 groups. To minimize any effect of data loss, we recruit **68** doctors and **135** nurses into our study, assuming 10% dropout rate.

Objective 2

Sample size calculated using the PS software. Independent T test is used to compare mean from 2 independent groups. Previous study [5] showed the pooled standard deviation (SD) was 1.14.

Parameters needed for sample size computation:

Power=80%

$\alpha = 0.05$

$\delta = 0.5$ (expert opinion)

$\sigma = 1.14$

$m = 2$

62 doctors and 124 nurses will be needed in order to detect a statistically significant between 2 groups. To minimize any effect of data loss, we recruit **69** doctors and **137** nurses into our study, assuming 10% dropout rate.

Objective 3

Sample size calculated using Jacob Cohen method.

Previous study [5] [7] showed 3 independent variables were statistically significant predictors of respondents' attitudes about end of life care.

1. Years of practice
2. Profession
3. Religious belief

Table 2
N for Small, Medium, and Large ES at Power = .80 for α = .01, .05, and .10

	α								
	.01			.05			.10		
Test	Sm	Med	Lg	Sm	Med	Lg	Sm	Med	Lg
1. Mean dif	586	95	38	393	64	26	310	50	20
2. Sig *r*	1,163	125	41	783	85	28	617	68	22
3. *r* dif	2,339	263	96	1,573	177	66	1,240	140	52
4. *P* = .5	1,165	127	44	783	85	30	616	67	23
5. *P* dif	584	93	36	392	63	25	309	49	19
6. χ^2									
1*df*	1,168	130	38	785	87	26	618	69	25
2*df*	1,388	154	56	964	107	39	771	86	31
3*df*	1,546	172	62	1,090	121	44	880	98	35
4*df*	1,675	186	67	1,194	133	48	968	108	39
5*df*	1,787	199	71	1,293	143	51	1,045	116	42
6*df*	1,887	210	75	1,362	151	54	1,113	124	45
7. ANOVA									
2*g*[a]	586	95	38	393	64	26	310	50	20
3*g*[a]	464	76	30	322	52	21	258	41	17
4*g*[a]	388	63	25	274	45	18	221	36	15
5*g*[a]	336	55	22	240	39	16	193	32	13
6*g*[a]	299	49	20	215	35	14	174	28	12
7*g*[a]	271	44	18	195	32	13	159	26	11
8. Mult *R*									
2*k*[b]	698	97	45	481	67	30			
3*k*[b]	780	108	50	547	76	34			
4*k*[b]	841	118	55	599	84	38			
5*k*[b]	901	126	59	645	91	42			
6*k*[b]	953	134	63	686	97	45			
7*k*[b]	998	141	66	726	102	48			
8*k*[b]	1,039	147	69	757	107	50			

Note. ES = population effect size, Sm = small, Med = medium, Lg = large, diff = difference, ANOVA = analysis of variance. Tests numbered as in Table 1.
[a] Number of groups. [b] Number of independent variables.

A total number of **76** respondents will be needed.

Conclusion:

Based on 3 objectives sample size calculation, the highest number of sample size based on objective 2 selected, which is 69 doctors and 137 nurses.

Statistical Analysis

Data will be analysed using Statistical Package for Social Science(SPSS) version 22.0. Demographic data will be analysed using appropriate descriptive statistics test.

For presentation of data, likert-style rating will be collapsed into 3 categories: strongly disagree and disagre, neutral and agree and strongly agree.

The differences between doctors and nurses on attitudes and practices towards EoL care will be compared using Mann Whitney test. Logistic regression will be used to identify caregivers' characteristics association with particular attitudes about on EOL care. P value of < 0.05 will be considered as statistically significant.

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GANTT CHART

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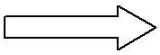
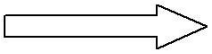
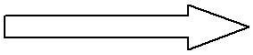
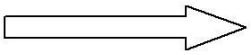
PROPOSAL PREPARATION				
DATA COLLECTION				
DATA ANALYSIS				
REPORT WRITING				

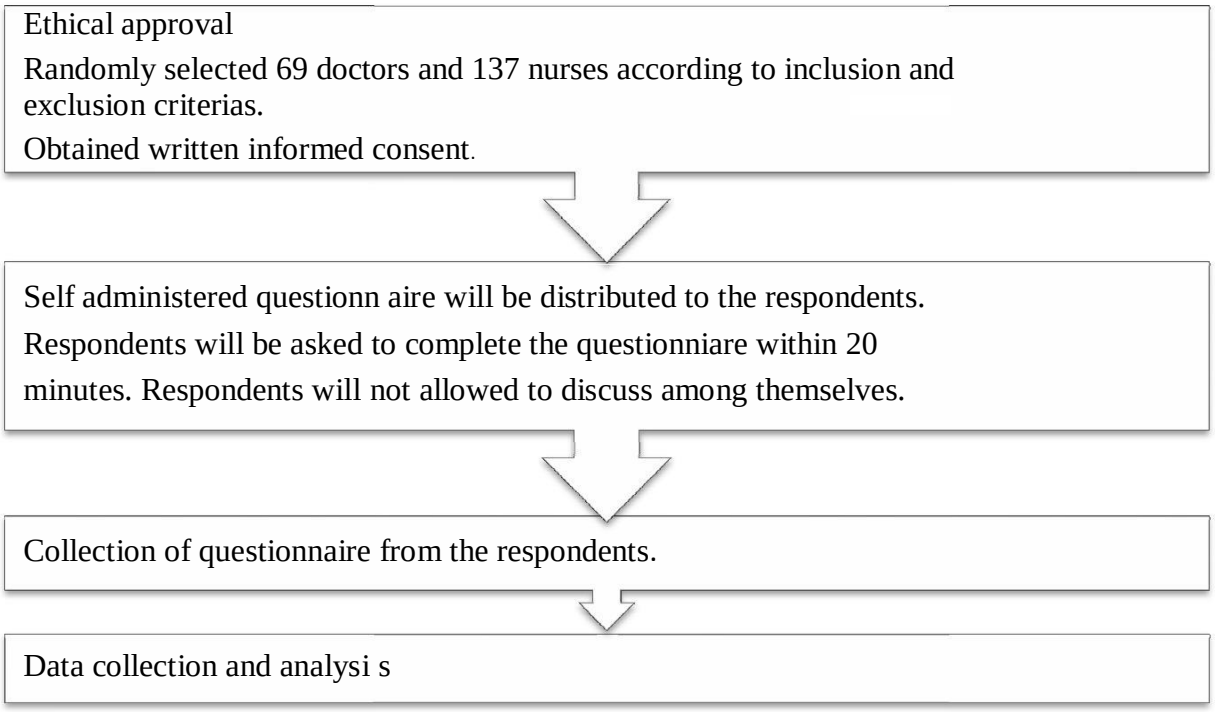
1. Proposal Preparation
    a. Literature Review
    b. Prepare proposal and submit to supervisor
    c. Present to ethics committee
    d. Start to collect data after approval

2. Data Collection
    a. Data Collection for 3 months

3. Data analysis
    a. Data analysis using SPSS software

4. Report Writing
    a. Report writing and submit to supervisor.

FLOW CHART


Ethical approval
Randomly selected 69 doctors and 137 nurses according to inclusion and exclusion criterias.
Obtained written informed consent.
Self administered questionn aire will be distributed to the respondents.
Respondents will be asked to complete the questionniare within 20 minutes. Respondents will not allowed to discuss among themselves.
Collection of questionnaire from the respondents.
Data collection and analysi s

APPENDIX A

Tehtiansiang <tts5153@gmail.com> 12/30/15

to jeffrey.burns

Dear Prof Jeffrey,

I am Teh Tian Siang , post graduate student from Malaysia. Currently I am studying anaesthesiology (master program) at University Science Malaysia(USM)
I wish to conduct an observational study regarding Perception of ICU staff towards end of life care in ICU. It will be conducted in our population. And, as far as you are concerned, there are limited data of END of life care in our setting.

I would like to ask your permission to adopt a questionnaire from a study that you conducted in 2001: "End of life care in the pediatric intensive care unit: Attitudes and practices of pediatric critica care physicians and nurses" and make minor changes on the questionnaire to suit our population.
I wish to know some details about the questionnaire validation.

Thank you and happy new year.

Regards,
Teh Tian Siang
MD USM

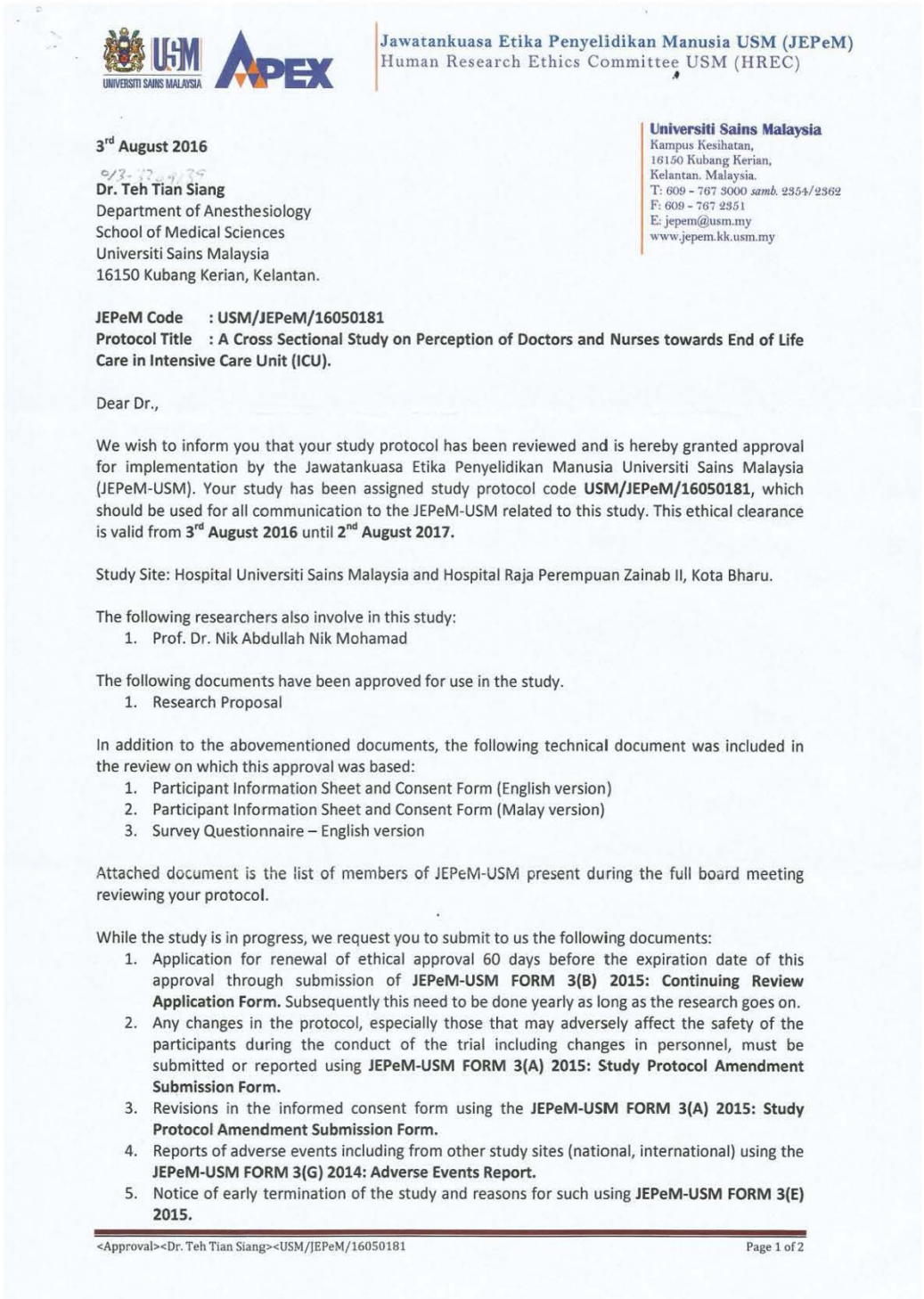
Sent from my iPhone

Burns, Jeffrey Jan 3

to me

Hello Dr. Siang-Ycu have my permission, validation steps as in manuscript, good luck with your project. JPB

2.2 Ethical approval letter from JEPeM



Jawatankuasa Etika Penyelidikan Manusia USM (JEPeM)
Human Research Ethics Committee USM (HREC)

Universiti Sains Malaysia
Kampus Kesihatan,
16150 Kubang Kerian,
Kelantan. Malaysia.
T: 609 - 767 3000 *samb.* 2354/2362
F: 609 - 767 2351
E: jepem@usm.my
www.jepem.kk.usm.my

3rd August 2016

Dr. Teh Tian Siang
Department of Anesthesiology
School of Medical Sciences
Universiti Sains Malaysia
16150 Kubang Kerian, Kelantan.

JEPeM Code : USM/JEPeM/16050181
Protocol Title : A Cross Sectional Study on Perception of Doctors and Nurses towards End of Life Care in Intensive Care Unit (ICU).

Dear Dr.,

We wish to inform you that your study protocol has been reviewed and is hereby granted approval for implementation by the Jawatankuasa Etika Penyelidikan Manusia Universiti Sains Malaysia (JEPeM-USM). Your study has been assigned study protocol code **USM/JEPeM/16050181**, which should be used for all communication to the JEPeM-USM related to this study. This ethical clearance is valid from **3rd August 2016** until **2nd August 2017.**

Study Site: Hospital Universiti Sains Malaysia and Hospital Raja Perempuan Zainab II, Kota Bharu.

The following researchers also involve in this study:
1. Prof. Dr. Nik Abdullah Nik Mohamad

The following documents have been approved for use in the study.
1. Research Proposal

In addition to the abovementioned documents, the following technical document was included in the review on which this approval was based:
1. Participant Information Sheet and Consent Form (English version)
2. Participant Information Sheet and Consent Form (Malay version)
3. Survey Questionnaire – English version

Attached document is the list of members of JEPeM-USM present during the full board meeting reviewing your protocol.

While the study is in progress, we request you to submit to us the following documents:
1. Application for renewal of ethical approval 60 days before the expiration date of this approval through submission of **JEPeM-USM FORM 3(B) 2015: Continuing Review Application Form.** Subsequently this need to be done yearly as long as the research goes on.
2. Any changes in the protocol, especially those that may adversely affect the safety of the participants during the conduct of the trial including changes in personnel, must be submitted or reported using **JEPeM-USM FORM 3(A) 2015: Study Protocol Amendment Submission Form.**
3. Revisions in the informed consent form using the **JEPeM-USM FORM 3(A) 2015: Study Protocol Amendment Submission Form.**
4. Reports of adverse events including from other study sites (national, international) using the **JEPeM-USM FORM 3(G) 2014: Adverse Events Report.**
5. Notice of early termination of the study and reasons for such using **JEPeM-USM FORM 3(E) 2015.**