THE DEVELOPMENT AND PRE-TESTING OF ATTITUDE AND PRACTICE QUESTIONNAIRE ON ETHICAL DECISION-MAKING DURING A PANDEMIC AMONG MEDICAL DOCTORS WORKING IN PAEDIATRIC SETTING IN MALAYSIA.

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DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF MEDICINE (PAEDIATRICS)

UNIVERSITI SAINS MALAYSIA

FEBRUARY 2023

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TABLE OF CONTENTS

ACKNOWLEDGEMENTS

All praises and gratitude to Allah SWT, the most gracious and the most merciful, for choosing me and giving me the strength to fulfil this dissertation. Alhamdulillah, Peace and Blessings be upon our beloved Prophet Muhammad SAW and his companions.

Working on this research project was a challenge that I decided to embark on and it has been a very interesting, pleasant and rewarding experience.

With utmost humility, I would like to extend my gratitude to some people without whom this accomplishment would not have been possible.

I am greatly indebted to my supervisor, Dr. Fahisham Bin Taib for his commitment and valuable guidance for making this project worthwhile. His support, motivation and advices has been very inspiring and encouraging throughout this journey. I would also like to thank my co-supervisors, Assoc Prof Dr. Mohamad Ikram Ilias and Assoc Prof Dr. Norsarwany Mohamad for their guidance and knowledge that they have passed on to me.

My most sincere appreciation to all paediatrics healthcare workers at Hospital USM for their willingness to participate in this study. I wish to express my thanks to PPSP, School of Medical Sciences, for the covid-19 seeds grant given to support this project.

Finally, I am forever thankful to my parents and my wife who have always supported me throughout my studies. May this research benefit us all.

LIST OF TABLES

LIST OF ABBREVIATIONS AND NOMENCLATURES

USM : Universiti Sains Malaysia

MO : Medical officers

SP : Specialists

HO : House officers

HCW : Healthcare workers

I-CVI : Item-level content validity index

S-CVI : Scale-level content validity index

I-FVI : Item-level face validity index

ABSTRAK

Latar Belakang: Malaysia telah menghadapi pandemik COVID-19 yang meluas dan telah menjejaskan kemasukan pesakit klinikal ke hospital. Memandangkan lengkungan epidemiologi semakin meningkat di seluruh dunia, mengambil keputusan untuk merentukan kemasukan pesakit, penggunaan mesin pernafasan dan pengurusan yang agresif untuk pesakit COVID-19, terutamanya kanak-kanak, boleh menjadi satu cabaran. Walau bagaimanapun, pada masa ini, tiada lagi alat yang wujud untuk menilai secara serentak domain untuk sikap dan amalan pekerja kesihatan dalam membuat keputusan beretika untuk kemasukan kanak-kanak ke hospital semasa wabak. Kajian semasa ini bertujuan untuk membangunkan dan mengesahkan soal selidik berkaitan sikap dan amalan mengenai tatacara membuat keputusan beretika semasa pandemik di kalangan Doktor Perubatan yang bekerja dalam pediatrik. Kaedah: Domain yang berkaitan dikenal pasti untuk menjana item dan membentuk alat kajian melalui tinjauan literatur, kumpulan fokus dan pendapat pakar. Soal selidik kemudiannya menjalani beberapa siri proses pengesahan yang merangkumi kandungan, kesahan muka dan analisis faktor penerokaan. Keputusan: Soal selidik yang dibangunkan menunjukkan indeks kesahan kandungan peringkat item, kesahan muka dan kesahan konstruk adalah memuaskan dengan I-CVI minimum item sikap ialah 0.80, dan maksimum ialah 1.00, manakala I-CVI minimum dan maksimum bagi bahagian latihan ialah 0.80 dan 1.00. Indeks kesahan muka peringkat item (I-FVI) 1.00 bagi kedua-dua domain diperoleh menunjukkan semua item berada di atas nilai ambang (0.60). Semua item mempunyai alfa Cronbach yang memuaskan (>0.6).

Kesimpulan: Kajian ini menunjukkan tahap I-CVI, I-FVI dan cronbach alfa yang baik dalam memastikan instrument soal selidik baharu dipercayai. Instrumen ini adalah sah, dan boleh dipercayai untuk digunakan untuk menilai sikap dan amalan dalam membuat keputusan beretika semasa wabak dalam kalangan Doktor Perubatan yang bekerja di dalam pediatrik.

ABSTRACT

Background: Malaysia is facing a widespread COVID-19 pandemic which has affected clinical admission to hospitals. As the epidemiological curve is on the rise globally, the decision making for admission, ventilation, and aggressive management for COVID-19 patients, especially children, can be challenging. However, currently no single tool exists to simultaneously evaluate the domains for attitude and practice on ethical-decisions making for children during the pandemic. The current study aims to develop and validate an attitude and practice questionnaire on ethical decision-making during a pandemic among medical doctors working in paediatric setting. **Methods**: Relevant domains were identified to generate items and form a research tool through literature reviews, research construct and opinions of experts. The questionnaire then underwent a series of validation process that included content and face validity. **Results**: The developed questionnaire demonstrated a satisfactory item-level content validity index and face validity. The minimum I-CVI of the attitude items was 0.80, and the maximum was 1.00, while the minimum and maximum I-CVI for practice items were 0.80 and 1.00. Item-level face validity index (I-FVI) of 1.00 for both domains were obtained showed all the items were above the cut-off value of 0.78. All the items had satisfactory factor loading Cronbach's alpha (>0.6). **Conclusion**: This study showed good level of content validity and reliability in the new questionnaire. The instrument is valid, and thus reliable to be used for assessing attitude and practice on ethical decision-making during a pandemic among Medical Doctors working in paediatric setting.

Keywords: *Questionnaire development, Validation, Ethical Decision-Making, Pandemic, Paediatric Setting*

CHAPTER II

THE TEXT

2.1 SECTION A

Introduction

2.1 INTRODUCTION

Malaysia has been facing a widespread pandemic of COVID-19 which has affected clinical admission to hospitals. As the epidemiological curve is on the rise globally, the decision making for admission, ventilation and aggressive management for COVID-19 patients, especially children, can be difficult and challenging. The first COVID-19 case in Malaysia was reported in January 2020, and since then, the number of cases has continued to rise. The Malaysian government has implemented various measures to combat the spread of the virus, including lockdowns, travel restrictions, and mass testing. However, while COVID-19 has dominated the news and public health efforts, it is important to note that Malaysia still faces other health challenges, including non-COVID-19 cases. These include infectious diseases such as dengue fever and tuberculosis, as well as non-communicable diseases. It is important for healthcare professionals in Malaysia to address both COVID-19 and non-COVID-19 cases in order to provide comprehensive care to the population. Due to uncertainty of the pandemic period, it is likely that every difficult decision made by managing paediatrician is crucial for the livelihood of children admitted for suspected COVID-19 or any other infection causes.

There are several factors that influence decision making in clinical settings. These factors, including past experience, cognitive biases, age and individual differences, belief in personal relevance, and an escalation of commitment, influence what choices people make. Understanding the factors that influence decision making process is important to understanding what decisions are made. That is, the factors that influence the process may impact the outcomes. Working in paediatric settings, doctors may face unique and complex challenges that can significantly impact their decision-making process. Resource scarcity, such as a shortage of PPE, hospital beds, and ventilators, can place medical doctors in the difficult position of having to allocate limited resources fairly and equitably. Uncertainty and risk associated with pandemics can add to the complexity of decision-making, as medical doctors may have to make decisions based on incomplete or uncertain information, and they may have to take risks to provide care to their patients. Legal and regulatory considerations can also impact decision-making, as medical doctors

must comply with changing regulations and be aware of their ethical and professional obligations to their patients. Personal and professional values can also influence the decision-making process where some medical doctors may prioritize saving lives over other considerations, while others may prioritize protecting their own health or that of their colleagues. Effective communication and collaboration with other healthcare providers, patients, families, and community members are also crucial during a pandemic. Furthermore, doctors may experience stress, anxiety, and moral distress during a pandemic, which can have a significant impact on their decision-making. It is important for medical doctors to receive support and resources to help manage these emotional and psychological factors. These factors are interrelated and complex, and they can have a significant impact on ethical decision-making during a pandemic.

Most pandemic contingency plans recognise health care professionals as a priority group because they will be the first line of defence in a pandemic, and because they will have to maintain a health service response for the entire community. This prioritisation must be based on ethical considerations and they have to be responsible in making key decision throughout the whole process. The aim of having these priorities is to achieve the greatest good, enabling individuals to 'return to normality' in maintaining threatened health systems and essential community services. Should a pandemic escalate and the demand on Intensive Care Unit (ICU) beds become extremely critical, it is important that the healthcare workers need to have consistent ethical conscience which might influence the appropriateness of each decision making and utilization of the resources. The potential ramifications of giving preferential treatment to individuals on any social grounds are disturbing such as those with financial superiority may be prioritised not based on ethical considerations. Some factors including critically ill patients or those who have comorbidities may be arguably legitimate reasons for seeking preferential treatment but certain criteria like political status, socioeconomic standing, celebrity status or professional position might also attempt to seek special treatment in the dire of need.

2.2 SECTION B

Study Protocol

2.2.1 Documents submitted for Ethical approval

DISSERTATION PROPOSAL

School of Medical Sciences

Universiti Sains Malaysia

Prepared in partial requirement fulfilment

For the Degree of Master of Medicine (Paediatric)

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Co-Supervisors: Dr Mohamad Ikram Ilias

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Research title : The development and pre-testing of attitude and practice questionnaire on ethical decision-making during a pandemic among medical doctors working in paediatric setting in Malaysia.

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Introduction

Malaysia has been facing a widespread pandemic of COVID-19 which has affected clinical admission to hospitals (1). As the epidemiological curve is on the rise globally, the decision making for admission, ventilation and aggressive management for COVID-19 patients, especially children, can be difficult and challenging (2). The first COVID-19 case in Malaysia was reported in January 2020, and since then, the number of cases has continued to rise. The Malaysian government has implemented various measures to combat the spread of the virus, including lockdowns, travel restrictions, and mass testing. However, while COVID-19 has dominated the news and public health efforts, it is important to note that Malaysia still faces other health challenges, including non-COVID-19 cases. These include infectious diseases such as dengue fever and tuberculosis, as well as non-communicable diseases. It is important for healthcare professionals in Malaysia to address both COVID-19 and non-COVID-19 cases in order to provide comprehensive care to the population. Due to uncertainty of the pandemic period, it is likely that every difficult decision made by managing paediatrician is crucial for the livelihood of children admitted for suspected COVID-19 or any other infection causes (3).

There are several factors that influence decision making in clinical settings. These factors, including past experience, cognitive biases, age and individual differences, belief in personal

relevance, and an escalation of commitment, influence what choices people make (4). Understanding the factors that influence decision making process is important to understanding what decisions are made. That is, the factors that influence the process may impact the outcomes (5). Working in paediatric settings, doctors may face unique and complex challenges that can significantly impact their decision-making process. Resource scarcity, such as a shortage of PPE, hospital beds, and ventilators, can place medical doctors in the difficult position of having to allocate limited resources fairly and equitably (6). Uncertainty and risk associated with pandemics can add to the complexity of decision-making, as medical doctors may have to make decisions based on incomplete or uncertain information, and they may have to take risks to provide care to their patients. Legal and regulatory considerations can also impact decision-making, as medical doctors must comply with changing regulations and be aware of their ethical and professional obligations to their patients. Personal and professional values can also influence the decision-making process where some medical doctors may prioritize saving lives over other considerations, while others may prioritize protecting their own health or that of their colleagues (7). Effective communication and collaboration with other healthcare providers, patients, families, and community members are also crucial during a pandemic. Furthermore, doctors may experience stress, anxiety, and moral distress during a pandemic, which can have a significant impact on their decision-making. It is important for medical doctors to receive support and resources to help manage these emotional and psychological factors. These factors are interrelated and complex, and they can have a significant impact on ethical decision-making during a pandemic (8).

Most pandemic contingency plans recognise health care professionals as a priority group because they will be the first line of defence in a pandemic, and because they will have to maintain a health service response for the entire community. This prioritisation must be based on ethical considerations and they have to be responsible in making key decision throughout the whole process (9). The aim of having these priorities is to achieve the greatest good, enabling individuals to ‘return to normality’ in maintaining threatened health systems and essential community services. Should a pandemic escalate and the demand on Intensive Care Unit (ICU) beds become

extremely critical, it is important that the healthcare workers need to have consistent ethical conscience which might influence the appropriateness of each decision making and utilization of the resources (10). The potential ramifications of giving preferential treatment to individuals on any social grounds are disturbing such as those with financial superiority may be prioritised not based on ethical considerations. Some factors including critically ill patients or those who have comorbidities may be arguably legitimate reasons for seeking preferential treatment but certain criteria like political status, socioeconomic standing, celebrity status or professional position might also attempt to seek special treatment in the dire of need.

Problem statement & Study rationale

The purpose of the study is to develop questionnaire related to paediatrician's attitude and practice on their ethical decision making during the pandemic time. Hypothetically, paediatricians will be managing various illnesses during the pandemic, including COVID-19 and non COVID-19 cases, thus making difficult decision based on available resources. It is important to understand their attitudes and practices in decision making when resources are scarce during the pandemic episode.

Research Question(s)

What are the attitudes and practices in ethical decision making of doctors working in Paediatric setting during the pandemic time?

Objectives

General:

To study the attitude and practice on ethical decision making among doctors working in Paediatric setting in Malaysia.

Specific:

1. To develop a questionnaire on attitude and practice for ethical decision making among doctors working in Paediatric setting, based on the literature.
2. To pre-test the questionnaire among doctors working in paediatric setting to determine the validity of the questionnaire. The validation will comprise of content validity and face validity.
3. To establish the reliability of the questionnaire of attitude and practice for ethical decision making among doctors working in Paediatric setting in Malaysia, by determining cronbach alpha.

Literature review

Disaster ethics has been widely discussed in the past among the emergency and adult physicians. There has been little discussion on paediatric disaster ethics during these disaster periods. There are gaps in the consensus of decision making due to emergent nature of the clinical problems such as pandemic COVID-19. Healthcare professionals used different weightage to decide on complex cases – which can be ethically, morally and legally challenging.

Several factors influence decision making. These factors, including past experience (11), cognitive biases (12), age and individual differences (13), belief in personal relevance (14), and an escalation of commitment, influence what choices people make. Understanding the factors that influence decision making process is important to understanding what decisions are made. That is, the factors that influence the process may impact the outcomes.

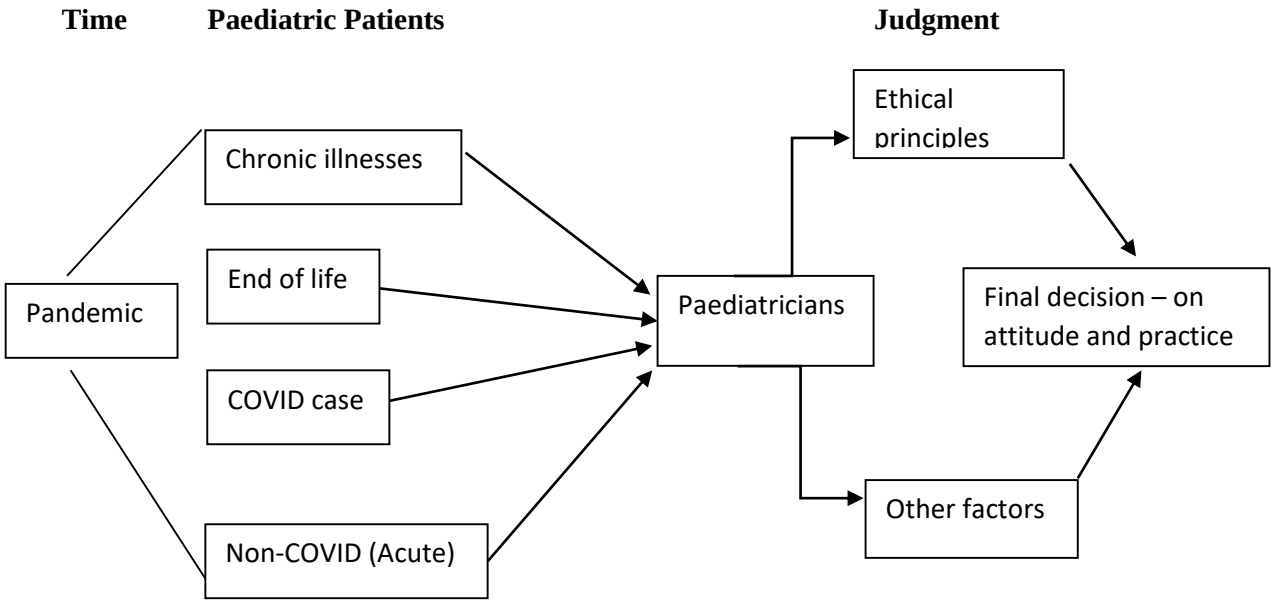
Study	Summary
1. Knowledge and attitude toward COVID-19 among healthcare workers at District 2 Hospital, Ho Chi Minh City. (15)	A cross-sectional study was performed between January and February 2020 at District 2 Hospital. Data was collected through a self-administered questionnaire of the knowledge and attitude of healthcare workers regarding COVID-19. A total of 327 eligible healthcare workers had a mean score of knowledge and attitude of 8.17±1.3 (range 4-10) and 1.86±0.43 (range 1-5), respectively. They showed good knowledge and a positive attitude. There was a negative correlation between knowledge scores and attitude scores (r=-0.21, P<0.001).
2. Knowledge, Attitude and Practice among Healthcare Professionals regarding COVID-19: A cross-sectional survey from Pakistan. (16)	An online survey-based study was conducted during the month of March among healthcare professionals using a self-administered validated questionnaire (Cronbach's alpha= 0.77). Of 414 respondents, 29.98% (n=120) physicians, 46.65% (n= 189) pharmacists and 25.36% (n= 105) nurses. Findings showed HCPs have good knowledge (93.2%, n=386), positive attitude and good practice regarding COVID-19. Factors such as age, experience and job were significantly associated with good knowledge and practice. In this same study, the questionnaire was designed using the following steps; a) Extraction of items from extensive literature review and course material regarding the topic of interest.

	b) An initial draft of items was designed. c) Validation of the items was done in 2 steps: The study instrument was sent to professional to give their expert opinions regarding simplicity, relativity and importance. d) This was followed by a pilot study targeting a small sample size (n=40), covering all respondents sub-group. e) Lastly the data was analyzed and the reliability of the instrument was assessed by calculating the Cronbach's alpha value (0.77).
3. Knowledge, Attitudes, and Practices Regarding Pandemic H1N1 Influenza Among Medical and Dental Residents and Fellowships in Shiraz, Iran. (17)	The aim of this study was to determine the score of KAP toward the Pandemic H1N1 and their predictor factors among the medical and dental residents and fellowships of Shiraz University of Medical Sciences, Iran. 125 respondents were recruited in a convenient sampling cross-sectional survey. The mean score of respondents' knowledge, attitude and practice were 22.6, 21.1 and 26.5 respectively. Respondents practice had significant linear positive correlation with knowledge and attitude. Their age was significantly and directly correlated to knowledge and practice. The educational major, age, and sex were significant predictors of responder's knowledge score and age was the only significant predictor of both attitude and practice scores.

4. Fair Allocation of Scarce Medical Resources in the Time of Covid-19. (18)	In this systematic review, Emanuel et al. 2020 analyzed the ethical values that help to decide for rationing health resources in a pandemic and concluded on these four fundamental values: 1. Maximizing the benefits produced by scarce resources; save the most lives, save the most life-years. 2. Treating people equally; Random selection can be used for selecting among patients with similar prognosis. 3. Promoting and rewarding instrumental value; means giving priority to those who have made or likely to make relevant contributions. 4. Giving priority to the worst off.
5. Rationing of influenza vaccine during a pandemic: An Ethical analyses. (19)	Zimmerman et al, compared the Utilitarian and Egalitarian principles applied to rationing of vaccines. Priority in Utilitarianism: 1. To those treatment has the highest success. 2. To those who are most useful. 3. To those require proportionally small amounts of resources. 4. To those who have greatest social worth. Priority in Egalitarianism: 1. To the medically neediest.

	2. To the generally neediest. 3. To those who come first to seek treatment. 4. Selection by chance (lottery).
6. *Ghanbari et al. 2019* analyzed the ethical prioritization of patients during disaster triage where the goal was to identify ethical principles or factors guiding patient prioritization during disaster triage.(20)	In this systematic review, several factors were identified for ethical prioritization of patients during disaster triage. These factors that guide ethical decision making include; ▪ Assigning priority to patients based on needs and effectiveness of treatment. ▪ The likelihood of benefitting treatment. ▪ Survivability. ▪ Saving the larger number of lives (Utilitarianism). ▪ Youngest first therefore implying saving most life-years. ▪ Saving Quality of life (saving most quality of year's life). ▪ Protecting vulnerable groups and saving first respondents ▪ Required resources (for e.g those who had access previously should be given less priority). ▪ Unbiased selection (Lottery and First come first Served).

Conceptual Framework



METHODOLOGY

This chapter describes the methods used to conduct this research. It includes the description of the study location, various study designs, sampling techniques, sample size determination, sampling frame, respondents' recruitment, intervention delivery, and the statistical analyses employed to test the study hypotheses. Moreover, it describes the development, pre-testing and reliability assessment of the questionnaire.

Study designs and phases

The study design is a cross-sectional study for the development of the questionnaire.

Questionnaire development:

Development of questionnaire will be done in stages (21, 24):

1. Domains Identification. (Attitude and Practice).
2. Conducting literature review on the attitude and practice on ethical decision making during the pandemic.
3. Following literature review and discussion with the supervisors, an initial pool of items

will be drafted. Estimated 25-30 questions will be garnered from literature review.

4. Content validity will be performed by a panel of 5 experts locally to assess how relevant and clear the items are with respect to the constructs. The experts (Appendix A) include two external Paediatricians working in COVID-19 hospitals, two Ethicist and one Public Health specialist. The key domains to assess through an expert validation process are representativeness, clarity, relevance and distribution.
5. Face validity of the questionnaire among 10 doctors working in Paediatrics to assess their understanding of how clear and relevant the questionnaire is.
6. Preliminary-Pilot Study (pre-testing) (n=50) of the questionnaire using a smaller sample size and targeting all categories of respondents (HO, MO, Consultants).
7. Reliability of each domains will be assessed by measuring the internal consistency.
8. Adjustment of questionnaire items.

Study location

The questionnaire validation study will be done in all Paediatric settings (Ward 6S, 6U, 2S, Nilam), Hospital Universiti Sains Malaysia, Kota Bharu, Kelantan. HUSM is a tertiary governmental hospital with in-patient and out-patient services. This hospital is situated in Kubang Kerian Kelantan, in the northeast-east of Malaysia. According to the hospital record statistics, it has 816 beds and about 32564 patients admitted to the different hospital departments.

Study duration

The development and validation of the questionnaire commenced from 1st August 2020 till 30th September, 2022

Reference population

In the present study, the reference population of all doctors working in a paediatric setting at HUSM and out-campus.

Sampling frame

The sampling frame in this study are doctors that fulfilled the study criteria.

Inclusion criteria

All doctors comprising of House Officers to Consultants working in Paediatric setting.

Exclusion criteria

Refusal to participate as well as incomplete answers to the questionnaire.

Sample size determination

For Content validation: 4 expert panels are used. (n=5) (22)

For Face validation: 10 doctors working in paediatric. (n=10) (22)

For Preliminary pilot Study: 50 doctors working in paediatric setting. (n=50) (23)

Sampling technique

The sampling method used was a convenient sampling method.

Research tool

The study proposes to develop new tool to assess attitude and practice on ethical decision making which consist of 3 parts;

Part A: Demographic data

Part B: statements on attitude for decision making during the pandemic

Part C: statements on practice for decision making during the pandemic

The questionnaire will use 5-point likert scale scoring system ranging from strongly agree, agree, not sure, disagree and strongly disagree.

Operational definition

1. **Attitude**: refers to our feelings towards a subject, as well as any preconceived ideas that we may have towards it.
2. **Practice**: refers to the ways in which we demonstrate our knowledge and attitude through our actions.
3. **Ethical decision making**: when a person has to make an ethical decision in uncertain conditions or in ethical dilemmas, relying on his/her assessment at that moment.
4. **Validity**: refers to the extent to which an empirical measure effectively tested the real meaning of concepts under consideration.
5. **Reliability**: refers to two situations (i) the consistency of a measure; despite repeated several times and (ii) a measure of stability at all times.

Data collection method

1. Data collection will be conducted at HUSM.

2. Once Expert review and Face validation is done, the questionnaire will be put online on Google form, and through a link, all respondents will be invited by whatsapp and Email to fill in the questionnaire.

3. The consent form and questionnaire will be in English language for all respondents. The questionnaire will need approximately 20 minutes to be completed. The personal right to withdraw from the survey at any moment is ensured.

4. Respondents will be anonymised according to the code given. Consent will be taken prior to entry of the study.

The data will be then statistically analyzed. Completed questionnaires with consent will be stored in a password protected Google account.

Data analysis

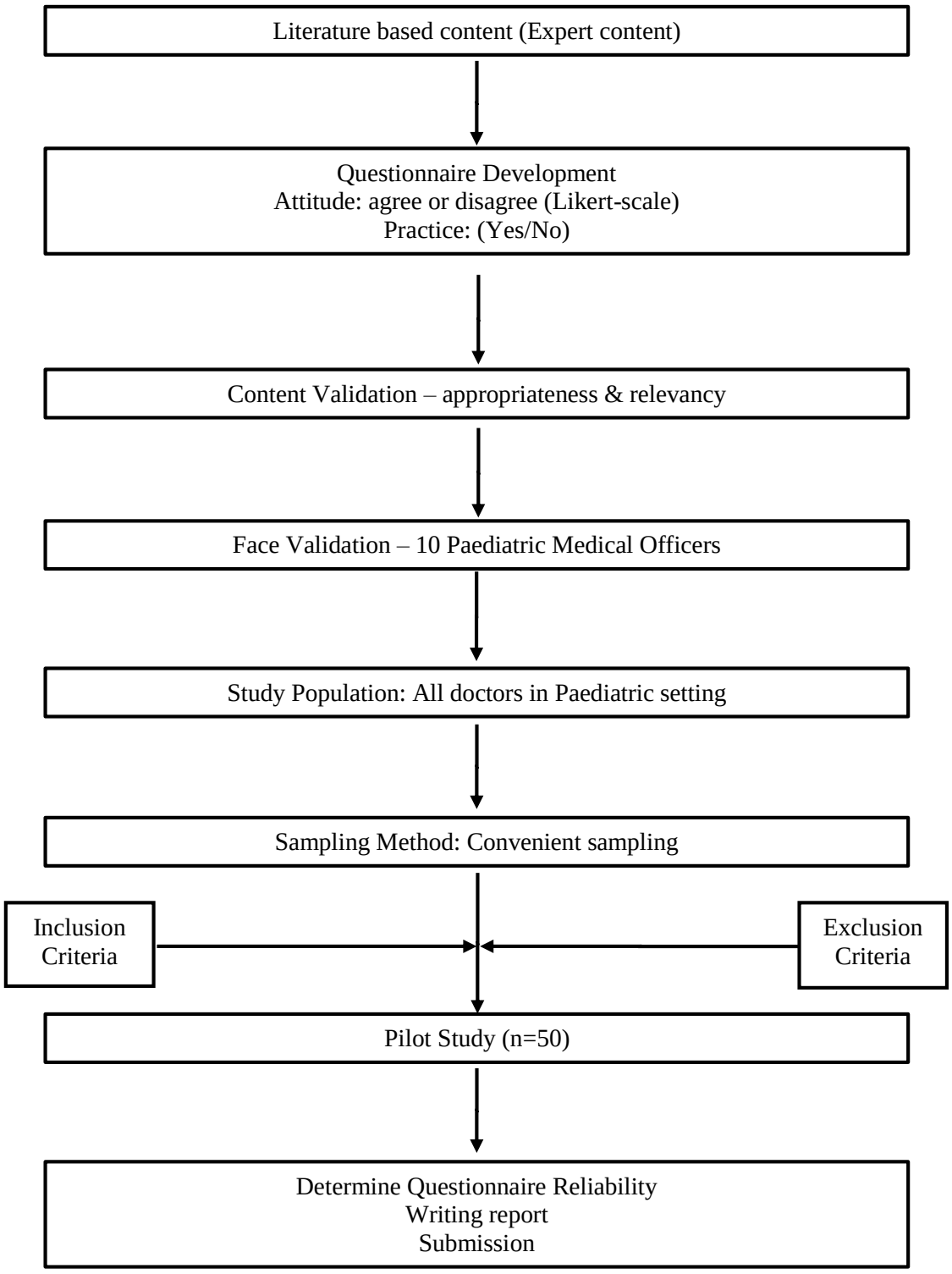
Data will be entered and analysed using SPSS software version 26. Descriptive statistics will be used to summarise the socio-demographic characteristics of subjects. Numerical data will be presented as mean (SD) based on their normality distribution. Categorical data will be presented as frequency (percentage).

For objective 1 (to develop questionnaire on attitude and practice for ethical decision making), this is achieved following questionnaire development with extraction of literature, synthesis of information.

For objective 2 (To pre-test the questionnaire among doctors working in paediatric setting to determine the validity of the questionnaire), this is achieved by working on face and content validation by determining the face validity index and content validity index respectively.

For objective 3 (to determine the reliability of the questionnaire for ethical decision making), this is achieved by analysing the internal consistency (Cronbach's alpha) after the preliminary pilot study. Cronbach's alpha of at least 0.60 indicates adequate internal consistency as suggested by Goni et al, 2015. (24)

Study Flowchart



Expected result(s)

Demographic data of respondents

Socio demographic	Frequency/Mean (SD)	n (%)
1. Age 2. Sex 3. Race 4. Specialty 5. Post 6. Marital status 7. Years of experience		

Content-Validity Index

Items number	Items statement	I-CVI	Evaluation

Face-Validity Index

Items number	Items statement	I-FVI	Evaluation

Questionnaire validation and reliability

Factor	Item	Factor loading	Corrected item Factor correlation	Cronbach's alpha if item deleted	Cronbach's alpha

Gantt chart & milestone

Activities	June 2022	July	Aug	Sept	Oct	Nov	Dec	Jan 2023	Feb	Mar	Feb
Literature review and Proposal											
Ethics Approval											
Questionnaire Development											
Content and Face validity											
Pilot Study (n=50)											
Data analysis (Reliability)											
Paper write up											
Report Submission											

Budget proposal [If applicable]: Nil.

Ethical consideration(s) [if applicable]:

1. **<u>Subject vulnerability</u>**

    1. The subject is a doctor. He/She will be given full freedom to participate or not.

    2. Voluntary participation and consent of the research's subjects will be maintained and ensured by the personal investigator. Only the personal investigator will be involved in recruiting subjects. The supervisors will not be involved in the recruiting process to protect the subjects' rights to refuse to participate.

    3. The data collection will be anonymised and only known by single researcher. The participant will be coded accordingly

2. **Declaration of absence of conflict of interest**

    No conflict of interest

3. **Privacy and confidentiality**

    All forms are anonymous and will be entered into SPSS software version 24. Only research team members can access the data. Data will be presented as grouped data and will not identify the responders individually.

4. **Community sensitivities and benefits**

    No community sensitivity in this study

5. **Honorarium and incentives**

    No honorarium will be given to respondents

6. **Other ethical review board approval [if applicable]**

    Not applicable

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