



Professionalisation and social attitudes: a protocol for measuring HIV/AIDS-related stigma among healthcare students

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Complete List of Authors:	Ahmadi, Keivan; Monash University, School of Medicine and Health Sciences Reidpath, Daniel; Monash University, School of Medicine and Health Sciences Allotey, Pascale; Monash University, School of Medicine and Health Sciences Hassali, Mohamed Azmi; Universiti Sains Malaysia (USM), Discipline of Social and Administrative Pharmacy, School of Pharmaceutical Sciences
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Title Page:

**Professionalisation and social attitudes: a protocol for
measuring HIV/AIDS-related stigma among healthcare students**

Authors' names:

1- Keivan Ahmadi (KA) (Corresponding author)

Jeffrey Cheah School of Medicine and Health Sciences

Monash University Sunway Campus,

Jalan Lagoon Selatan, Bandar Sunway

46150 Selangor DE

Malaysia

Telephone (+603) 55146300 Extn 61569

Facsimile (+603) 55143623

Kahm4@student.monash.edu

Keivan13_ahmadi@yahoo.com

2- Professor Dr. Daniel D Reidpath (DDR)

Jeffrey Cheah School of Medicine and Health Sciences

Monash University Sunway Campus,

Jalan Lagoon Selatan, Bandar Sunway

46150 Selangor DE

Malaysia

daniel.reidpath@monash.edu

3- Professor Dr. Pascale Allotey (PA)

Jeffrey Cheah School of Medicine and Health Sciences

Monash University Sunway Campus,

Jalan Lagoon Selatan, Bandar Sunway

46150 Selangor DE

Malaysia

pascale.allotey@monash.edu

4- Associate Professor Dr. Mohamed Azmi Ahmad Hassali (AH)

Discipline of Social and Administrative Pharmacy,

School of Pharmaceutical Sciences,

Universiti Sains Malaysia,

11800 Penang,

Malaysia

azmihassali@usm.my

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Title:

Professionalisation and social attitudes: a protocol for measuring HIV/AIDS-related stigma among healthcare students

Abstract:

Introduction: HIV/AIDS-related stigma affects the access and utilization of health services. Although HIV/AIDS-related stigma in the health services has been studied, little work has attended to the relationship between professional development, and stigmatising attitudes. Hence, in this study we will extend earlier research by examining the relationship between the stage of professional development and the kinds of stigmatising attitudes held about people living with HIV/AIDS.

Methods and analysis: A serial-cross sectional design will be combined with a two-point in time longitudinal design to measure the levels of stigma among health students from each year of undergraduate and graduate courses in Malaysia and Australia. We will carry out a sequential mixed methods design to develop a measurement tool- a questionnaire. We anticipate the data analysis in terms of reliability and validity testing of the measurement tool, regression model and a linear model (mixed-effects) where stigmatising attitudes are the outcome measures.

Ethics and dissemination: We have received the ethical approval from Monash MBBS executive committee as well as Monash University Human Research Ethics Committee. We will keep the data in a locked filing cabinet in Monash university (Sunway campus) premises for 5 years; after which the information will be shredded

and disposed of in secure bins, and digital recordings will be erased in accordance with Monash University's regulations. Only the principal investigator and the researcher will have access to the filing cabinet. We aim at presenting and publishing the results of this study in national and international conferences, and peer-reviewed journals, respectively.

For peer review only

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Introduction:

A healthcare workforce that is responsive and fair in its treatment of patients is one of the central pillars of a modern health system.¹ It is for this reason, among others, that healthcare workers are bound by ethical codes of practice to treat patients according to their need, and not according to their gender, religious beliefs, sexual orientation, skin colour, or other socially (de)valued attributes.² Possible exceptions to this rule of social blindness arise when those otherwise ignorable social attributes may affect the diagnosis, prognosis, or choice of the most effective treatment.

What should happen, however, when the patient is perceived as a complete reprobate – a repugnant individual whose very presence challenges the healthcare worker's moral foundation? In theory, the answer is simple – treat the patient in front of you according to their healthcare need.

The challenge for the health system is that practice does not necessarily mirror professional intent, and personal prejudices and fear of contagion interfere in decisions for care. The literature is replete with examples of patients who are accorded different (worse) treatment because of some perceived moral taint.³ The human immunodeficiency virus (HIV) epidemic provides a classic case in point. Healthcare workers have reported not wanting to treat people living with HIV-AIDS (PLWHA) for a range of reasons including: because the patient was undeserving; or because treating PLWHA would devalue the healthcare worker in the eyes of others.⁴ This situation has, in many instances, created a tiered health system in which “deserving” patients have received treatment and the “undeserving” have not ³. High levels of stigma and

discrimination are associated with a reduction in access to treatment and care for those with undesirable attributes.⁵

To overcome the dangers of discrimination associated with the social valuation of HIV/AIDS patients, many teaching programs now contain explicit or integrated learning objectives that relate to professionalisation.⁶ The process of professionalisation fosters the inculcation of acceptable practice of healthcare workers in line with societal expectations, and the social contract between the client and the healthcare worker.⁷⁻⁹ In this context, increasing the professionalism of the healthcare workforce is as much about improved technical competency as it is about ethics of practice. Increasing professionalisation is, thus expected to result in less stigma and discrimination in healthcare settings.¹⁰

Whether professionalisation does protect patients against the creation of tiered healthcare is an empirical question, but there is reason to believe that it would work by reducing negative attitudes and discriminatory behaviour towards patients – particularly those from socially marginalised groups, such as HIV/AIDS patients. There is already some evidence in the literature to support this idea.^{11,12} For instance, it is known that targeted learning focused on attitudes to specific marginalised groups can result in a positive attitudinal change¹³. What is less clear is whether a generic focus on professionalisation not focussed specifically on one disease or another is sufficient to improve attitudes towards all socially marginalised groups regardless of the socially devalued attribute.

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In posing this idea that professionalisation may reduce stigmatising attitudes and discriminatory behaviour, two refinements need to be introduced. The first is a distinction between generic professionalisation and targeted learning, because it goes to the heart of ensuring a responsive and fair health system. For instance in targeted learning, if programs need to be developed to address stigmatising attitudes of a healthcare workforce to every marginalised group or disease, the cost will be too high and the educational process will always be reactive. A generically professional healthcare workforce in contrast that understands and follows –a holistic approach to- the ethical codes of conduct is a more flexible workforce, less likely to create a tiered healthcare system.



The second refinement is to draw a distinction between an individual as a healthcare professional, and that same individual within a private, non-professional domain. There is no reason to assume that the equanimity possessed in the professional domain towards socially marginalised people will translate into the private life of health professionals. Furthermore, there is no overwhelming reason to believe that it would be appropriate for professional attitudes to be always concordant with private attitudes, and earlier investigations of social attitudes among [future] health care professionals have clearly depicted discordant attitudes in personal and professional domains¹⁴ For example, I may be “blind” to the fact that a person is a paedophile for the purposes of treating their myocardial infarction, but my vision might be restored if there is some indication that they are joining my social circle.

One might anticipate, therefore, with increasing professionalisation there will arise a degree of bifurcation in the social attitudes of healthcare workers towards

marginalised people. Specifically, while negative attitudes towards the socially marginalised may decrease with increasing professionalisation, for the purposes of providing treatment and care, the same change in attitude may not be observed towards the socially marginalised in the personal domain.

Rationale

Although HIV/AIDS-related stigma in the health services has been studied, little work has attended to the relationship between professional development, and changes in stigmatising attitudes. Indeed, most research has relied on cross-sectional data to assess generic levels of stigma^{15–23}, without attempting to understand how the attitudes may develop and change over time, or differences between stigma associated with professional and private domains of life. This question is particularly crucial in the context of health service provision, because of the hypothesised link between the trajectory of stigmatising attitudes and the trajectory of professional development.

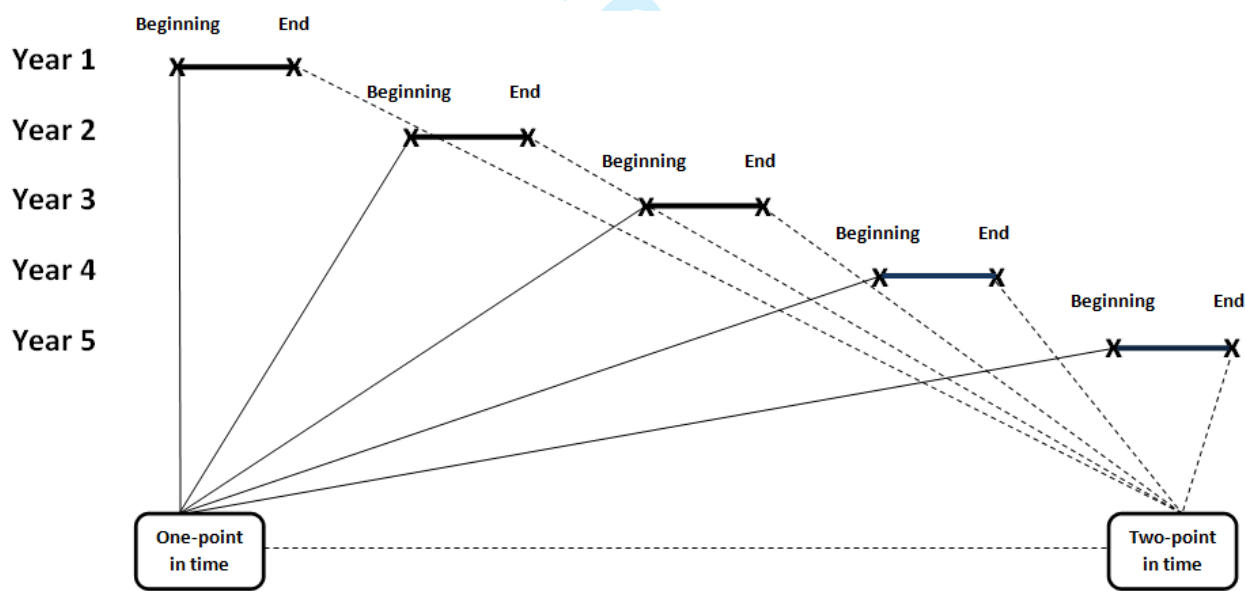
The objective of this study is to investigate the relationship between the stage of professional development of healthcare students and the kinds of stigmatising attitudes held about people living with HIV/AIDS. More specifically, we aim at measuring the attitudes of students towards PLWHA to assess (a) the level of stigmatising attitudes, and (b) differences between attitudes in professional and private domains.

Method and analysis:

Study design

The ideal design for this research would be a 4-5 year longitudinal design of healthcare students measuring changes in attitude over their professional course. Given the preliminary nature of the investigation, however, an alternative approach is proposed which limits the resource expenditure while providing a good indication of the ideas' merit. Instead of a longitudinal design, a serial-cross sectional design (to examine differences between cohorts in different years of study) will be combined with a two-point in time longitudinal design (to examine differences between the beginning and the end of a single year of study) (Figure 1). Levels of stigma will be measured once at the beginning of a single year of study and once at the end of the same year, and this will be conducted across year cohorts.

Figure 1: Study design for MBBS program



Study population

Monash University is an Australian university that has campuses in other countries like Malaysia, South Africa, etc. In this study we would recruit Monash University health students of three campuses (two campuses in Australia and one campus in Malaysia). The students over the age of 18, studying a four-year plus, professional, health care qualification, degree course will be eligible.

Students with a previous healthcare qualification will be excluded; for example a nurse returning to university to pursue medicine. All participants will be over the age of 17.

Sample size calculation

Usually the number of predictive values –variables- and the type of statistical test determine the minimum number of respondents needed.^{24,25} For example, once we determine that twenty variables measure HIV/AIDS-related stigma and also knowing that approximately 15 responses are needed per variable to produce a stable estimate for regression models; eventually we would be able to calculate the sample size. Hence, the complexity of the study, and the uncertainty about the final measure of stigma, precludes the possibility of a reasonable sample size calculation.

Data analysis plan

If the assumptions hold, we anticipate the use of ordinary least squares regression to examine differences between the level of stigmatising attitudes between year-group cohorts, controlling for appropriate covariates, such as age, sex, ethnographic backgrounds, and course.

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The approach to the analysis of the data, described here, assumes a serial cross-sectional design. It is easiest to think of the data analysis in terms of reliability and validity testing of the measurement tool, and a linear model (repeated measures ANCOVA) where Stigmatising attitudes are the outcome measures; i.e., a repeated measure within person. Level of professionalism is treated as an ordered factor, and sex and level of HIV knowledge, and degree program are treated as covariates.

In the preliminary stages exploratory data analysis will be used to check and describe the data. Rather than a repeated measure ANCOVA, however, a mixed effects linear model will be fitted to the data to control for the repeated measure of stigma within person. The data will be analysed using the R statistical environment.²⁶

Measurement tool

We will carry out a sequential mixed methods design to develop a measurement tool- a questionnaire – provided the current literature lacks the measurement tool, suitable for the objectives of this study. We will implement a 4-step approach to create the new measurement tool.

1- We will define the main facets and domains of the measurement tool based on “personal domains of stigma” vs. “professional domain of stigma in the context of a health professional's work environment”. We anticipate that this could be achieved by creating brief hypothetical scenarios about HIV positive individuals and HIV negative individuals in health settings. These hypothetical scenarios –vignettes- could be themed to reflect fear of contagion, etc. For example, a scenario in which “a physician refuses

to operate on a patient with HIV/AIDS to protect themselves from contracting HIV/AIDS."

2- We will decide on the items for "personal domain of stigma" and "professional domain of stigma" either by adopting the available items from the available validated measurement tools or by developing new items. For instance, we will search the relevant sources of information i.e., published articles, book chapters, organisational documents like international and national code of professional conducts and ethics in health field to develop new items for "professional domain of stigma".^{2,10,27-32} We anticipate that common themes reflecting the traits of professionalism could be extracted from the above-said sources of information. For example, fear of contagion; risks of infectivity; confidentiality; and resource allocation could be the themes that might surface.

3- We will design the new items as such to capture the interplay between a social – either professional or personal - responsibility and a potentially stigmatised (HIV positive) or non-stigmatised (HIV negative) characteristic.

4- We will draft the finalised items to create a scale - a questionnaire- and will validate it.

Eventually we will administer the measurement tool in a series of points in time to capture the change(s) in attitude.

Data collection

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We will collect the data using the newly developed questionnaire by administering paper based and/or on-line surveys. The questionnaire will contain demographic questions and the initial item pool of questions on HIV/AIDS-related stigma. We will also provide each participant with a set of study protocol and explanatory statement – describing the purpose of the research, methods, etc.

Participating sites

We anticipate that health students from each year would be invited to participate in the study over a one year period. This would allow us to examine differences between the level of stigmatising attitudes between year-group cohorts, controlling for appropriate covariates, such as age, sex, ethnographic backgrounds, cultural backgrounds and course.

Discussion:

Definitions

We will adopt an operational definition of professionalism where a measurable set of indicators of professionalism could be extracted.³³ In the context of future health care professionals, the years towards the professional development could be considered as one indicator.

Strengths and weaknesses

A major strength of this study is the possibility of creating a measurement tool encompassing personal and professional items, representing personal and professional attitudes towards PLWHA, respectively.

Other strength is the study- two-point in time longitudinal- design that will enable us to investigate the relationship between stigmatising attitude towards PLWHA and professionalisation by allowing us to study the possible change(s) in attitudes over a time period.

The lack of universally accepted definitions of "professionalism"^{34,35} as well as a clear set of indicators to measure the levels, could pose a challenge in how one should operationalise professionalism in this context.

Moreover, the bifurcation of social attitude into the private and professional domains might be less distinctive than anticipated, and require large samples to detect the differences. We also anticipate to collecting the self-reported attitude rather than the actual attitude and this of course would also raise questions about the practical importance of the issue, which could be a finding in its own right.

Conclusion:

A fair and responsive health system requires a healthcare workforce that is blind to the "undeserving" and the "morally reprehensible". If we do not gain a better understanding of the relationship between professionalisation and negative social attitudes and behavior towards the socially marginalised, we are in danger of recreating a tiered healthcare system each time a new disease or a new social group is devalued. Notwithstanding the measurement challenges outlined here, the

implications for professional education and the health systems agenda are sufficiently important that they warrant further investigation.

Ethics and dissemination:

We have received the ethical approval from Monash MBBS executive committee as well as Monash University Human Research Ethics Committee (MUHREC). MUHREC allocated the project number “CF12/0829 – 201200368” and categorised this study as “Low Risk”.

Data deposition

We will keep the data in a locked filing cabinet in Monash university (Sunway campus) premises for 5 years; after which the information will be shredded and disposed of in secure bins, and digital recordings will be erased in accordance with Monash University’s regulations. Only the principal investigator and the researcher will have access to the filing cabinet.

Dissemination plan

We aim at presenting and publishing the results of this study in national and international conferences, and peer-reviewed journals, respectively.

List of abbreviations:

- HIVHuman Immunodeficiency Virus
- AIDS.....Acquired Immune Deficiency Syndrome
- PLWHA.....People Living With HIV/AIDS
- ANCOVA.....Analysis of covariance

MBBS.....Bachelor of Medicine, Bachelor of Surgery

MUHREC.....Monash University Research Ethics Committee

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Authors' contributions:

KA developed the concept and DDR reshaped it. KA and DDR have made substantive intellectual contributions to the manuscript. PA and AH have revised the manuscript critically and have improved the presentation of the ideas. All four authors have given the final approval to publishing this manuscript.

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Competing interests statement:

The authors declare that they have no competing interests.

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7 **Article summary table:**
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9 **Article focus**

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11 -The primary objective of this research is to examine the relationship between
12 professionalisation and stigmatising attitude towards PLWHA among healthcare
13 students.
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16 -The secondary aim of this study is to investigate the availability of suitable
17 measurement tool(s) - otherwise to create a scale- to measure the transformation of
18 HIV/AIDS-related stigma in the context of health professional's work environment.
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20
21 **Key messages**

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23 -A fair and responsive health system requires a healthcare workforce that is blind to the
24 "undeserving" and the "morally reprehensible", hence studying the professional
25 development in relation with the stigmatising attitude development is of great
26 importance in addressing the inequalities in the delivery of care.
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29 **Strengths and limitations of this study**

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31 - The major strength of this protocol is its detailed approach on developing a suitable
32 measurement tool as well as its design that will allow us to study the professional
33 development and possible change(s) in attitudes over a time period.
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36 - The limitation of this study is the uncertainties pertaining to the sample size calculation
37 as well as the fact that we may measure a self-reported attitude rather than an actual
38 attitude.
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Jeffrey Cheah School of Medicine and Health Sciences

Monash University Sunway Campus,

Jalan Lagoon Selatan, Bandar Sunway

46150 Selangor DE

Malaysia

Telephone (+603) 55146300 Extn 61569

Facsimile (+603) 55143623

Kahm4@student.monash.edu

Keivan13_ahmadi@yahoo.com

2- Daniel D Reidpath (DDR)

Jeffrey Cheah School of Medicine and Health Sciences

Monash University Sunway Campus,

Jalan Lagoon Selatan, Bandar Sunway

46150 Selangor DE

Malaysia

daniel.reidpath@monash.edu

3- Pascale Allotey (PA)

Jeffrey Cheah School of Medicine and Health Sciences

Monash University Sunway Campus,

Jalan Lagoon Selatan, Bandar Sunway

46150 Selangor DE

Malaysia

pascale.allotey@monash.edu

4- Mohamed Azmi Ahmad Hassali (AH)

Discipline of Social and Administrative Pharmacy,

School of Pharmaceutical Sciences,

Universiti Sains Malaysia,

11800 Penang,

Malaysia

azmihassali@usm.my

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Abstract:

Introduction: HIV/AIDS-related stigma affects the access and utilization of health services. Although HIV/AIDS-related stigma in the health services has been studied, little work has attended to the relationship between professional development, and stigmatising attitudes. Hence, in this study we will extend earlier research by examining the relationship between the stage of professional development and the kinds of stigmatising attitudes held about people living with HIV/AIDS.

Methods and analysis: A serial-cross sectional design will be combined with a two-point in time longitudinal design to measure the levels of stigma among health students from each year of undergraduate and graduate courses in Malaysia and Australia. In the absence of suitable measures, we will carry out a sequential mixed methods design to develop such a tool. The questionnaire data will be analysed using mixed effects linear models to manage the repeated measures.

Ethics and dissemination: We have received the ethical approval from Monash MBBS executive committee as well as Monash University Human Research Ethics Committee. We will keep the data in a locked filing cabinet in Monash university (Sunway campus) premises for 5 years; after which the information will be shredded and disposed of in secure bins, and digital recordings will be erased in accordance

with Monash University's regulations. Only the principal investigator and the researcher will have access to the filing cabinet. We aim at presenting and publishing the results of this study in national and international conferences, and peer-reviewed journals, respectively.

For peer review only

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Introduction:

A healthcare workforce that is responsive and fair in its treatment of patients is one of the central pillars of a modern health system.¹ It is for this reason, among others, that healthcare workers are bound by ethical codes of practice to treat patients according to their need, and not according to their gender, religious beliefs, sexual orientation, skin colour, or other socially (de)valued attributes.² Possible exceptions to this rule of social blindness arise when those otherwise ignorable social attributes may affect the diagnosis, prognosis, or choice of the most effective treatment.

What should happen, however, when the patient is perceived as a complete reprobate – a repugnant individual whose very presence challenges the healthcare worker's moral foundation? In theory, the answer is simple – treat the patient in front of you according to their healthcare need.

The challenge for the health system is that practice does not necessarily mirror professional intent, and personal prejudices and fear of contagion interfere in decisions for care.³⁻⁵ The literature is replete with examples of patients who are accorded different (worse) treatment because of some perceived moral taint.⁶ The human immunodeficiency virus (HIV) epidemic provides a classic case in point. Healthcare workers have reported not wanting to treat people living with HIV-AIDS (PLWHA) for a range of reasons including: because the patient was undeserving; or because treating PLWHA would devalue the healthcare worker in the eyes of others.⁷ This situation has, in many instances, created a tiered health system in which “deserving” patients have received treatment and the “undeserving” have not.⁶ High levels of stigma and

discrimination are associated with a reduction in access to treatment and care for those with undesirable attributes.⁸

To overcome the dangers of discrimination associated with the social valuation of HIV/AIDS patients, many teaching programs now contain explicit or integrated learning objectives that relate to professionalisation.⁹ The process of professionalisation fosters the inculcation of acceptable practice of healthcare workers in line with societal expectations, and the social contract between the client and the healthcare worker.¹⁰⁻¹² In this context, increasing the professionalism of the healthcare workforce is as much about improved technical competency as it is about ethics of practice. Increasing professionalisation is, thus expected to result in less stigma and discrimination in healthcare settings.¹³

Whether professionalisation does protect patients against the creation of tiered healthcare is an empirical question, but there is reason to believe that it would work by reducing negative attitudes and discriminatory behaviour towards patients – particularly those from socially marginalised groups, such as HIV/AIDS patients. There is already some evidence in the literature to support this idea.^{14 15} For instance, it is known that targeted learning focused on attitudes to specific marginalised groups can result in a positive attitudinal change.¹⁶ What is less clear is whether a generic focus on professionalisation not focussed specifically on one disease or another is sufficient to improve attitudes towards all socially marginalised groups regardless of the socially devalued attribute.

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3 In posing this idea that professionalisation may reduce stigmatising attitudes, two
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5 refinements need to be introduced. The first is a distinction between generic
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7 professionalisation and targeted learning, because it goes to the heart of ensuring a
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9 responsive and fair health system. For instance in targeted learning, if programs need
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11 to be developed to address stigmatising attitudes of a healthcare workforce to every
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13 marginalised group or disease, the cost will be too high and the educational process
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15 will always be reactive. A generically professional healthcare workforce in contrast
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17 that understands and follows –a holistic approach to- the ethical codes of conduct is a
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19 more flexible workforce, less likely to create a tiered healthcare system.
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25 The second refinement is to draw a distinction between an individual as a
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27 healthcare professional, and that same individual within a private, non-professional
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29 domain. There is no reason to assume that the equanimity possessed in the professional
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31 domain towards socially marginalised people will translate into the private life of health
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33 professionals. Furthermore, there is no overwhelming reason to believe that it would be
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35 appropriate for professional attitudes to be always concordant with private attitudes,
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37 and earlier investigations of social attitudes among (future) health care professionals
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39 have clearly depicted discordant attitudes in personal and professional domains¹⁷ For
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41 example, I may be “blind” to the fact that a person is a paedophile for the purposes of
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43 treating their myocardial infarction, but my vision might be restored if there is some
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45 indication that they are joining my social circle.
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51 One might anticipate, therefore, that with increasing professionalisation there will
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53 arise a degree of bifurcation in the social attitudes of healthcare workers towards
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55 marginalised people. Specifically, while negative attitudes towards the socially
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marginalised may decrease with increasing professionalisation, for the purposes of providing treatment and care, the same change in attitude may not be observed towards the socially marginalised in the personal domain.

Rationale

Although HIV/AIDS-related stigma in the health services has been studied, little work has attended to the relationship between professional development, and changes in stigmatising attitudes. Indeed, most research has relied on cross-sectional data to assess generic levels of stigma^{18–28}, without attempting to understand how the attitudes may develop and change over time, or differences between stigma associated with professional and private domains of life. This question is particularly crucial in the context of health service provision, because of the hypothesised link between the trajectory of stigmatising attitudes and the trajectory of professional development.

The primary main objective of this study is to investigate the relationship between the stage of professional development of healthcare students and the kinds of stigmatising attitudes held about people living with HIV/AIDS. More specifically, we aim at measuring the attitudes of students towards PLWHA to assess (a) the level of stigmatising attitudes, and (b) differences between attitudes in professional and private domains, and (c) changes in the differences between attitudes in professional and private domains as the students become increasingly professionalised.

Although there are a number of measures of stigma, there are few separate measures of stigmatising attitudes in professional and private domains and none validated for use in our research setting. The conditional secondary objective,

therefore, is to develop a suitable tool to measure the stigmatising attitudes in professional and private domains. This secondary objective, however is described in less detail and the protocol assumes that such a measure is identifiable.

Method and analysis:

Study design

The ideal design for this research would be a 4-5 year longitudinal study of healthcare students measuring changes in attitude over their professional course; however, an alternative approach is proposed which limits the resource expenditure while providing a good indication of the ideas' merit. Instead of a longitudinal design, a serial-cross sectional design (to examine differences between cohorts in different years of study) will be combined with a two-point in time longitudinal design (to examine differences between the beginning and the end of a single year of study) (Figure 1). Levels of stigma will be measured once at the beginning of a single year of study and once at the end of the same year, and this will be conducted across year cohorts.

Study population

Monash University is an Australian university that has multiple campuses in Australia as well as campuses in Malaysia and South Africa. In this study we will recruit Monash University health students from three campuses (two campuses in Australia and one campus in Malaysia). The students over the age of 17, studying a four-year plus, professional, health care qualification, degree course will be eligible.

Students with a previous healthcare qualification will be excluded; for example a nurse returning to university to pursue medicine. Students below the age of 17 will be also excluded. There are no other exclusion criteria.

Sample size calculation

Usually the number of predictor variables, the variability in the outcome variable, the correlation between the repeated measures, and the type of statistical test planned are used to calculate the minimum number of respondents needed to achieve a significant result with known probability.²⁹ The variability in the outcome measures is unknown, as is the correlation between the repeated measure of personal and professional stigma, making realistic sample size calculation almost impossible.³⁰ However, a recent study of HIV knowledge and stigma in a Malaysian healthcare cohort provides a crude guide.³¹ In that study without repeated measures, a sample size of 340 was calculated. Inflating this estimate to account for the repeated measurement, in what amounts to a conservative design-effect of 2.5, leads to an estimated sample size of 850. However, the ethical mechanisms operating within the University for the use of students as participants prevents random sampling and one must in reality attempt to contact all students.

Data analysis plan

If the assumptions hold, we anticipate the use of mixed effects linear models to examine differences between the level of stigmatising attitudes between year-group cohorts, controlling for appropriate covariates, such as age, sex, ethnographic backgrounds, and course.

The approach to the analysis of the data assumes a serial cross-sectional design. It is conceptually simplest to think of the data analysis in terms of repeated measures analysis of covariance (ANCOVA) where stigmatising attitudes are the outcome measures measured twice within person (i.e., a measure of personal and professional stigma). The level of professionalism is treated as an ordered factor based on years of study; and sex, level of HIV knowledge, and the type of degree program are treated as nominal, interval, and nominal covariates respectively.

In the preliminary stages exploratory data analysis will be used to check and describe the data. However, rather than a repeated measures ANCOVA which was described for its conceptual simplicity, a mixed effects linear model will be fitted to the data to control for the repeated measure of stigma within person. The great advantages of a mixed effects linear model for repeated measures designs is that if one of the outcome measures is missing (e.g., if a participant fails to complete the personal stigma scale but does complete the professional stigma scale), their remaining data from the individual can still be retained. The data will be analysed using the R statistical environment.³²

Measurement tool

There is currently no measurement tool designed to measure stigmatising attitudes in a professional and private domain separately, and this is the secondary objective of the research. We will carry out a sequential mixed methods design to develop a measurement tool (i.e., a questionnaire). We will form a group of health specialist(s); health academics; health care team members i.e., nurses, medical doctors, pharmacists, etc. with at least 5 years of clinical experience and together we will implement a 4-step approach to create the new measurement tool.

1- We will define the main facets and domains of the measurement tool based on “personal domains of stigma” vs. “professional domain of stigma in the context of a health professional’s work environment”. We anticipate that this could be achieved by creating brief hypothetical scenarios about HIV positive individuals and HIV negative individuals in health settings. These hypothetical scenarios –vignettes- could be themed to reflect fear of contagion, etc. For example, a scenario in which “a physician refuses to operate on a patient with HIV/AIDS to protect themselves from contracting HIV/AIDS.”

2- We will decide on the items for “personal domain of stigma” and “professional domain of stigma” either by adopting the available items from the available validated measurement tools or by developing new items. For instance, we will search the relevant sources of information i.e., published articles, book chapters, organisational documents like international and national code of professional conducts and ethics in health field to develop new items for “professional domain of stigma”.^{2 13 33–38} We anticipate that common themes reflecting the traits of professionalism could be

extracted from the above-said sources of information. For example, fear of contagion; risks of infectivity; confidentiality; and resource allocation could be the themes that might surface.

3- We will design the new items as such to capture the interplay between a social – either professional or personal - responsibility and a potentially stigmatised (HIV positive) or non-stigmatised (HIV negative) characteristic.

4- We will draft the finalised items to create a scale - a questionnaire- and will validate it.

We will administer the measurement tool in a series of time-points to capture any change(s) in attitude.

Data collection

We will collect the data using the newly developed questionnaire by administering paper based and/or on-line surveys. The on-line version of the survey will be available via the “Blackboard” class management system, with a link in the announcements as students login (Australia). The paper based version will be distributed in classrooms at the end of the taught session (Malaysia). There is no risk of students receiving the on-line version also receiving the paper based version.

The questionnaire will contain demographic questions and the initial item pool of questions on HIV/AIDS-related stigma. We will also provide each participant with and the questionnaire and explanatory statement – describing the purpose of the research, methods, etc.

Participating sites

We anticipate that health students from each year will be invited to participate in the study over a one year period. This will allow us to examine differences between the level of stigmatising attitudes between year-group cohorts, controlling for appropriate covariates, such as age, sex, ethnographic backgrounds, cultural backgrounds and course.

Discussion:

Definitions

In the context of future health care professionals, the years towards the professional development could be considered as one indicator of professionalisation. Clinical knowledge, as well as knowledge of contagion and transmission will increase with years in a healthcare program. Within a modern healthcare program, however, there is also a focus on professional ethics and professional practice – often implicit rather than explicit probably increasing with the shift from pre-clinical to clinical years in a program. Under these circumstances the years of training becomes a reasonable indicator of professionalisation. Unfortunately, professionalism then becomes confounded by knowledge of transmission.

Strengths and weaknesses

The strength of the study is the two-point in time longitudinal design that will enable us to investigate the relationship between stigmatising attitude towards PLWHA and professionalisation by looking at change(s) in attitudes over a time period.

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The approach to sampling, which is not ideal but a constraint placed by ethical requirements raises the possibility of a selection bias. In a more general invitation to participate given to all students, those with particular attitudinal dispositions (or dispositions to change attitudes with professional exposure) may self-select. This needs to be noted as a limitation, and may warrant further study. However, the nature of the hypothesis, that participants will change on one dimension of stigma attitudes but not another, seems to provide some protection against the plausibility of the selection bias as an explanation for any observed difference.

The lack of universally accepted measure of “professionalism”^{39–41} in healthcare students or the healthcare workforce is an issue. However, within the context of this study, years of study is a reasonable indicator in the first instance.

Moreover, the bifurcation of social attitude into the private and professional domains might be less distinctive than anticipated, and require large samples to detect the differences. We also anticipate to collecting the self-reported attitude rather than the actual attitude and this of course would also raise questions about the practical importance of the issue, which could be a finding in its own right.

Conclusion:

A fair and responsive health system requires a healthcare workforce that is blind to the “undeserving” and the “morally reprehensible”. If we do not gain a better understanding of the relationship between professionalisation and negative social attitudes and behavior towards the socially marginalised, we are in danger of recreating a tiered healthcare system each time a new disease or a new social group is devalued. Notwithstanding the measurement challenges outlined here, the

implications for professional education and the health systems agenda are sufficiently important that they warrant further investigation.

Ethics and dissemination:

Participation in this study will be completely voluntary, where completion and return of the questionnaire will be taken as consent. This protocol has been approved by the Monash University Human Research Ethics Committee (Approval number: CF12/0829 – 201200368) and categorised as Low Risk.

Data deposition

We will keep the data in a locked filing cabinet in Monash university (Sunway campus) premises for 5 years; after which the information will be shredded and disposed of in secure bins, and digital recordings will be erased in accordance with Monash University's regulations. Only the principal investigator and the researcher will have access to the filing cabinet.

Dissemination plan

We aim at presenting and publishing the results of this study in national and international conferences, and peer-reviewed journals, respectively.

List of abbreviations:

HIV	Human Immunodeficiency Virus
AIDS.....	Acquired Immune Deficiency Syndrome
PLWHA.....	People Living With HIV/AIDS
ANCOVA.....	Analysis of covariance

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3 MBBS.....Bachelor of Medicine, Bachelor of Surgery
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6 MUHREC.....Monash University Research Ethics Committee
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15 **FIGURE LEGEND:**

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18 **Figure 1: Study design for MBBS program**
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Authors' contributions:

KA developed the concept and DDR reshaped it. KA and DDR have made substantive intellectual contributions to the manuscript. PA and AH have revised the manuscript critically and have improved the presentation of the ideas. All four authors have given the final approval to publishing this manuscript.

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Competing interests statement

The authors declare that they have no competing interests.

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Article summary table:

Article focus

-The primary objective of this research is to examine the relationship between professionalisation and stigmatising attitude towards PLWHA among healthcare students.

-The secondary aim of this study is to investigate the availability of suitable measurement tool(s) - otherwise to create a scale- to measure the transformation of HIV/AIDS-related stigma in the context of health professional’s work environment.

Key messages

-A fair and responsive health system requires a healthcare workforce that is blind to the “undeserving” and the “morally reprehensible”, hence studying the professional development in relation with the stigmatising attitude development is of great importance in addressing the inequalities in the delivery of care.

Strengths and limitations of this study

- The major strength of this protocol is its design that will allow us to study the professional development and possible change(s) in attitudes over a time period.

- The limitation of this study is the uncertainties pertaining to the sample size calculation as well as the fact that we may measure a self-reported attitude rather than an actual attitude. The sampling limitations imposed by ethical requirements also raise issues about a selection bias. While the possibility of the bias needs to be acknowledged, the nature of the research question probably limits the bias.

Title Page:

**Professionalisation and social attitudes: a protocol for
measuring **changes in** HIV/AIDS-related stigma among
healthcare students**

Authors' names:

1- Keivan Ahmadi (KA) (Corresponding author)

Jeffrey Cheah School of Medicine and Health Sciences

Monash University Sunway Campus,

Jalan Lagoon Selatan, Bandar Sunway

46150 Selangor DE

Malaysia

Telephone (+603) 55146300 Extn 61569

Facsimile (+603) 55143623

Kahm4@student.monash.edu

Keivan13_ahmadi@yahoo.com

2- Daniel D Reidpath (DDR)

Jeffrey Cheah School of Medicine and Health Sciences

Monash University Sunway Campus,

Jalan Lagoon Selatan, Bandar Sunway

46150 Selangor DE

Malaysia

daniel.reidpath@monash.edu

3- Pascale Allotey (PA)

Jeffrey Cheah School of Medicine and Health Sciences
Monash University Sunway Campus,
Jalan Lagoon Selatan, Bandar Sunway
46150 Selangor DE
Malaysia
pascale.allotey@monash.edu

4- Mohamed Azmi Ahmad Hassali (AH)

Discipline of Social and Administrative Pharmacy,
School of Pharmaceutical Sciences,
Universiti Sains Malaysia,
11800 Penang,
Malaysia
azmihassali@usm.my

Keywords:

Professionalism, medical education, Healthcare, HIV/AIDS, stigma, Social attitude

Word count: 2797

Title:

Professionalisation and social attitudes: a protocol for measuring HIV/AIDS-related stigma among healthcare students

Abstract:

Introduction: HIV/AIDS-related stigma affects the access and utilization of health

services. Although HIV/AIDS-related stigma in the health services has been studied, little work has attended to the relationship between professional development, and stigmatising attitudes. Hence, in this study we will extend earlier research by examining the relationship between the stage of professional development and the kinds of stigmatising attitudes held about people living with HIV/AIDS.

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For peer review only

Introduction:

A healthcare workforce that is responsive and fair in its treatment of patients is one of the central pillars of a modern health system.¹ It is for this reason, among others, that healthcare workers are bound by ethical codes of practice to treat patients according to their need, and not according to their gender, religious beliefs, sexual orientation, skin colour, or other socially (de)valued attributes.² Possible exceptions to this rule of social blindness arise when those otherwise ignorable social attributes may affect the diagnosis, prognosis, or choice of the most effective treatment.

What should happen, however, when the patient is perceived as a complete reprobate – a repugnant individual whose very presence challenges the healthcare worker's moral foundation? In theory, the answer is simple – treat the patient in front of you according to their healthcare need.

The challenge for the health system is that practice does not necessarily mirror professional intent, and personal prejudices and fear of contagion interfere in decisions for care.^{3–5} The literature is replete with examples of patients who are accorded different (worse) treatment because of some perceived moral taint.⁶ The human immunodeficiency virus (HIV) epidemic provides a classic case in point. Healthcare workers have reported not wanting to treat people living with HIV-AIDS (PLWHA) for a range of reasons including: because the patient was undeserving; or because treating PLWHA would devalue the healthcare worker in the eyes of others.⁷ This situation has, in many instances, created a tiered health system in which “deserving” patients have received treatment and the “undeserving” have not.⁶ High levels of stigma and

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discrimination are associated with a reduction in access to treatment and care for those with undesirable attributes.⁸

To overcome the dangers of discrimination associated with the social valuation of HIV/AIDS patients, many teaching programs now contain explicit or integrated learning objectives that relate to professionalisation.⁹ The process of professionalisation fosters the inculcation of acceptable practice of healthcare workers in line with societal expectations, and the social contract between the client and the healthcare worker.¹⁰⁻¹² In this context, increasing the professionalism of the healthcare workforce is as much about improved technical competency as it is about ethics of practice. Increasing professionalisation is, thus expected to result in less stigma and discrimination in healthcare settings.¹³

Whether professionalisation does protect patients against the creation of tiered healthcare is an empirical question, but there is reason to believe that it would work by reducing negative attitudes and discriminatory behaviour towards patients – particularly those from socially marginalised groups, such as HIV/AIDS patients. There is already some evidence in the literature to support this idea.^{14 15} For instance, it is known that targeted learning focused on attitudes to specific marginalised groups can result in a positive attitudinal change.¹⁶ What is less clear is whether a generic focus on professionalisation not focussed specifically on one disease or another is sufficient to improve attitudes towards all socially marginalised groups regardless of the socially devalued attribute.

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In posing this idea that professionalisation may reduce stigmatising attitudes, two refinements need to be introduced. The first is a distinction between generic professionalisation and targeted learning, because it goes to the heart of ensuring a responsive and fair health system. For instance in targeted learning, if programs need to be developed to address stigmatising attitudes of a healthcare workforce to every marginalised group or disease, the cost will be too high and the educational process will always be reactive. A generically professional healthcare workforce in contrast that understands and follows –a holistic approach to- the ethical codes of conduct is a more flexible workforce, less likely to create a tiered healthcare system.

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The second refinement is to draw a distinction between an individual as a healthcare professional, and that same individual within a private, non-professional domain. There is no reason to assume that the equanimity possessed in the professional domain towards socially marginalised people will translate into the private life of health professionals. Furthermore, there is no overwhelming reason to believe that it would be appropriate for professional attitudes to be always concordant with private attitudes, and earlier investigations of social attitudes among [future] health care professionals have clearly depicted discordant attitudes in personal and professional domains¹⁷ For example, I may be “blind” to the fact that a person is a paedophile for the purposes of treating their myocardial infarction, but my vision might be restored if there is some indication that they are joining my social circle.

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One might anticipate, therefore, that with increasing professionalisation there will arise a degree of bifurcation in the social attitudes of healthcare workers towards marginalised people. Specifically, while negative attitudes towards the socially

marginalised may decrease with increasing professionalisation, for the purposes of providing treatment and care, the same change in attitude may not be observed towards the socially marginalised in the personal domain.

Rationale

Although HIV/AIDS-related stigma in the health services has been studied, little work has attended to the relationship between professional development, and changes in stigmatising attitudes. Indeed, most research has relied on cross-sectional data to assess generic levels of stigma^{18–28}, without attempting to understand how the attitudes may develop and change over time, or differences between stigma associated with professional and private domains of life. This question is particularly crucial in the context of health service provision, because of the hypothesised link between the trajectory of stigmatising attitudes and the trajectory of professional development.

The primary main objective of this study is to investigate the relationship between the stage of professional development of healthcare students and the kinds of stigmatising attitudes held about people living with HIV/AIDS. More specifically, we aim at measuring the attitudes of students towards PLWHA to assess (a) the level of stigmatising attitudes, and (b) differences between attitudes in professional and private domains, and (c) changes in the differences between attitudes in professional and private domains as the students become increasingly professionalised.

Although there are a number of measures of stigma, there are few separate measures of stigmatising attitudes in professional and private domains and none validated for use in our research setting. The conditional secondary objective,

therefore, is to develop a suitable tool to measure the stigmatising attitudes in professional and private domains. This secondary objective, however is described in less detail and the protocol assumes that such a measure is identifiable.

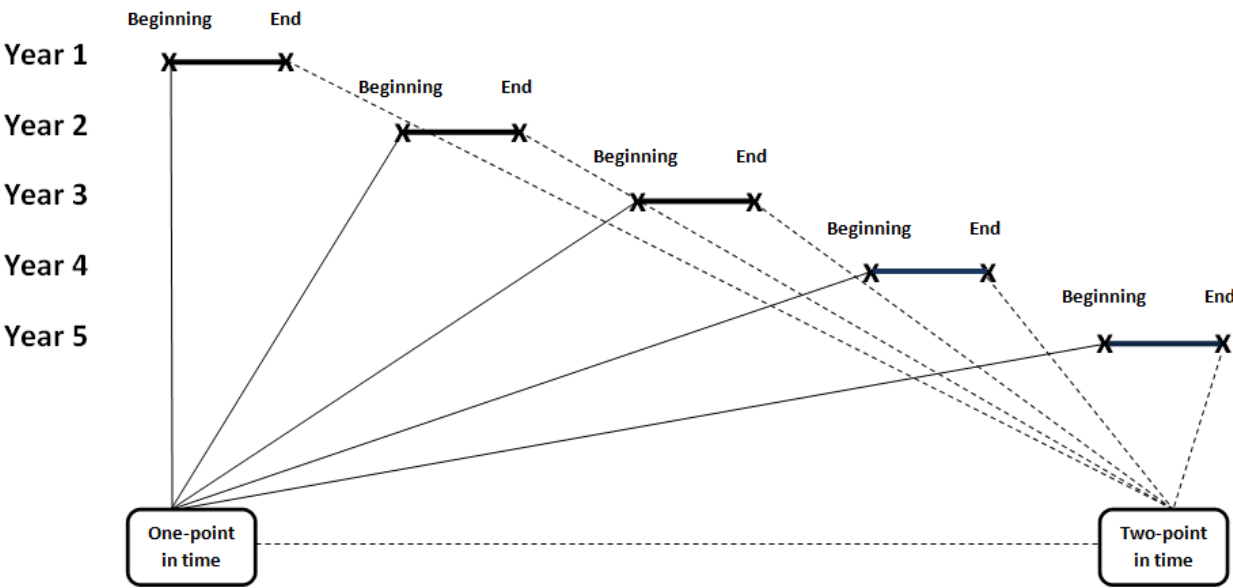
Method and analysis:

Study design

The ideal design for this research would be a 4-5 year longitudinal study of healthcare students measuring changes in attitude over their professional course; however, an alternative approach is proposed which limits the resource expenditure while providing a good indication of the ideas' merit. Instead of a longitudinal design, a serial-cross sectional design (to examine differences between cohorts in different years of study) will be combined with a two-point in time longitudinal design (to examine differences between the beginning and the end of a single year of study) (Figure 1). Levels of stigma will be measured once at the beginning of a single year of study and once at the end of the same year, and this will be conducted across year cohorts.

Figure 1: Study design for MBBS program

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Study population

Monash University is an Australian university that has multiple campuses in Australia as well as campuses in Malaysia and South Africa. In this study we will recruit Monash University health students from three campuses (two campuses in Australia and one campus in Malaysia). The students over the age of 17, studying a four-year plus, professional, health care qualification, degree course will be eligible.

Students with a previous healthcare qualification will be excluded; for example a nurse returning to university to pursue medicine. Students below the age of 17 will be also excluded. There are no other exclusion criteria.

Sample size calculation

Usually the number of predictor variables, the variability in the outcome variable, the correlation between the repeated measures, and the type of statistical test planned are used to calculate the minimum number of respondents needed to achieve a significant result with known probability.²⁹ The variability in the outcome measures is unknown, as is the correlation between the repeated measure of personal and professional stigma, making realistic sample size calculation almost impossible.³⁰ However, a recent study of HIV knowledge and stigma in a Malaysian healthcare cohort provides a crude guide.³¹ In that study without repeated measures, a sample size of 340 was calculated. Inflating this estimate to account for the repeated measurement, in what amounts to a conservative design-effect of 2.5, leads to an estimated sample size of 850. However, the ethical mechanisms operating within the University for the use of students as participants prevents random sampling and one must in reality attempt to contact all students.

Data analysis plan

If the assumptions hold, we anticipate the use of mixed effects linear models to examine differences between the level of stigmatising attitudes between year-group cohorts, controlling for appropriate covariates, such as age, sex, ethnographic backgrounds, and course.

The approach to the analysis of the data assumes a serial cross-sectional design. It is conceptually simplest to think of the data analysis in terms of repeated measures analysis of covariance (ANCOVA) where stigmatising attitudes are the outcome

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measures measured twice within person (i.e., a measure of personal and professional stigma). The level of professionalism is treated as an ordered factor based on years of study; and sex, level of HIV knowledge, and the type of degree program are treated as nominal, interval, and nominal covariates respectively.

In the preliminary stages exploratory data analysis will be used to check and describe the data. However, rather than a repeated measures ANCOVA which was described for its conceptual simplicity, a mixed effects linear model will be fitted to the data to control for the repeated measure of stigma within person. The great advantages of a mixed effects linear model for repeated measures designs is that if one of the outcome measures is missing (e.g., if a participant fails to complete the personal stigma scale but does complete the professional stigma scale), their remaining data from the individual can still be retained. The data will be analysed using the R statistical environment.³²

Measurement tool

There is currently no measurement tool designed to measure stigmatising attitudes in a professional and private domain separately, and this is the secondary objective of the research. We will carry out a sequential mixed methods design to develop a measurement tool (i.e., a questionnaire). We will form a group of health specialist(s); health academics; health care team members i.e., nurses, medical doctors, pharmacists, etc. with at least 5 years of clinical experience and together we will implement a 4-step approach to create the new measurement tool.

1- We will define the main facets and domains of the measurement tool based on "personal domains of stigma" vs. "professional domain of stigma in the context of a health professional's work environment". We anticipate that this could be achieved by creating brief hypothetical scenarios about HIV positive individuals and HIV negative individuals in health settings. These hypothetical scenarios –vignettes- could be themed to reflect fear of contagion, etc. For example, a scenario in which "a physician refuses to operate on a patient with HIV/AIDS to protect themselves from contracting HIV/AIDS."

2- We will decide on the items for "personal domain of stigma" and "professional domain of stigma" either by adopting the available items from the available validated measurement tools or by developing new items. For instance, we will search the relevant sources of information i.e., published articles, book chapters, organisational documents like international and national code of professional conducts and ethics in health field to develop new items for "professional domain of stigma".^{2 13 33–38} We anticipate that common themes reflecting the traits of professionalism could be extracted from the above-said sources of information. For example, fear of contagion; risks of infectivity; confidentiality; and resource allocation could be the themes that might surface.

3- We will design the new items as such to capture the interplay between a social – either professional or personal - responsibility and a potentially stigmatised (HIV positive) or non-stigmatised (HIV negative) characteristic.

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4- We will draft the finalised items to create a scale - a questionnaire- and will validate it.

We will administer the measurement tool in a series of time-points to capture any change(s) in attitude.

Data collection

We will collect the data using the newly developed questionnaire by administering paper based and/or on-line surveys. The on-line version of the survey will be available via the "Blackboard" class management system, with a link in the announcements as students login (Australia). The paper based version will be distributed in classrooms at the end of the taught session (Malaysia). There is no risk of students receiving the on-line version also receiving the paper based version.

The questionnaire will contain demographic questions and the initial item pool of questions on HIV/AIDS-related stigma. We will also provide each participant with and the questionnaire and explanatory statement – describing the purpose of the research, methods, etc.

Participating sites

We anticipate that health students from each year will be invited to participate in the study over a one year period. This will allow us to examine differences between the level of stigmatising attitudes between year-group cohorts, controlling for appropriate covariates, such as age, sex, ethnographic backgrounds, cultural backgrounds and course.

Discussion:

Definitions

In the context of future health care professionals, the years towards the professional development could be considered as one indicator of professionalisation. Clinical knowledge, as well as knowledge of contagion and transmission will increase with years in a healthcare program. Within a modern healthcare program, however, there is also a focus on professional ethics and professional practice – often implicit rather than explicit probably increasing with the shift from pre-clinical to clinical years in a program. Under these circumstances the years of training becomes a reasonable indicator of professionalisation. Unfortunately, professionalism then becomes confounded by knowledge of transmission.

Strengths and weaknesses

The strength of the study is the two-point in time longitudinal design that will enable us to investigate the relationship between stigmatising attitude towards PLWHA and professionalisation by looking at change(s) in attitudes over a time period.

The approach to sampling, which is not ideal but a constraint placed by ethical requirements raises the possibility of a selection bias. In a more general invitation to participate given to all students, those with particular attitudinal dispositions (or dispositions to change attitudes with professional exposure) may self-select. This needs to be noted as a limitation, and may warrant further study. However, the nature of the hypothesis, that participants will change on one dimension of stigma attitudes but not

another, seems to provide some protection against the plausibility of the selection bias as an explanation for any observed difference.

The lack of universally accepted measure of "professionalism"^{39–41} in healthcare students or the healthcare workforce is an issue. However, within the context of this study, years of study is a reasonable indicator in the first instance.

Moreover, the bifurcation of social attitude into the private and professional domains might be less distinctive than anticipated, and require large samples to detect the differences. We also anticipate to collecting the self-reported attitude rather than the actual attitude and this of course would also raise questions about the practical importance of the issue, which could be a finding in its own right.

Conclusion:

A fair and responsive health system requires a healthcare workforce that is blind to the "undeserving" and the "morally reprehensible". If we do not gain a better understanding of the relationship between professionalisation and negative social attitudes and behavior towards the socially marginalised, we are in danger of recreating a tiered healthcare system each time a new disease or a new social group is devalued. Notwithstanding the measurement challenges outlined here, the implications for professional education and the health systems agenda are sufficiently important that they warrant further investigation.

Ethics and dissemination:

Participation in this study will be completely voluntary, where completion and return of the questionnaire will be taken as consent. This protocol has been approved by the Monash University Human Research Ethics Committee (Approval number: CF12/0829 – 201200368) and categorised as Low Risk.

Data deposition

We will keep the data in a locked filing cabinet in Monash university (Sunway campus) premises for 5 years; after which the information will be shredded and disposed of in secure bins, and digital recordings will be erased in accordance with Monash University's regulations. Only the principal investigator and the researcher will have access to the filing cabinet.

Dissemination plan

We aim at presenting and publishing the results of this study in national and international conferences, and peer-reviewed journals, respectively.

List of abbreviations:

HIV	Human Immunodeficiency Virus
AIDS.....	Acquired Immune Deficiency Syndrome
PLWHA.....	People Living With HIV/AIDS
ANCOVA.....	Analysis of covariance
MBBS.....	Bachelor of Medicine, Bachelor of Surgery
MUHREC.....	Monash University Research Ethics Committee

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Authors' contributions:

KA developed the concept and DDR reshaped it. KA and DDR have made substantive intellectual contributions to the manuscript. PA and AH have revised the manuscript critically and have improved the presentation of the ideas. All four authors have given the final approval to publishing this manuscript.

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The grant number is 5140056.

Competing interests statement:

The authors declare that they have no competing interests.

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7 **Article summary table:**
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9 **Article focus**

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11 -The primary objective of this research is to examine the relationship between
12 professionalisation and stigmatising attitude towards PLWHA among healthcare
13 students.
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16 -The secondary aim of this study is to investigate the availability of suitable
17 measurement tool(s) - otherwise to create a scale- to measure the transformation of
18 HIV/AIDS-related stigma in the context of health professional's work environment.
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21 **Key messages**

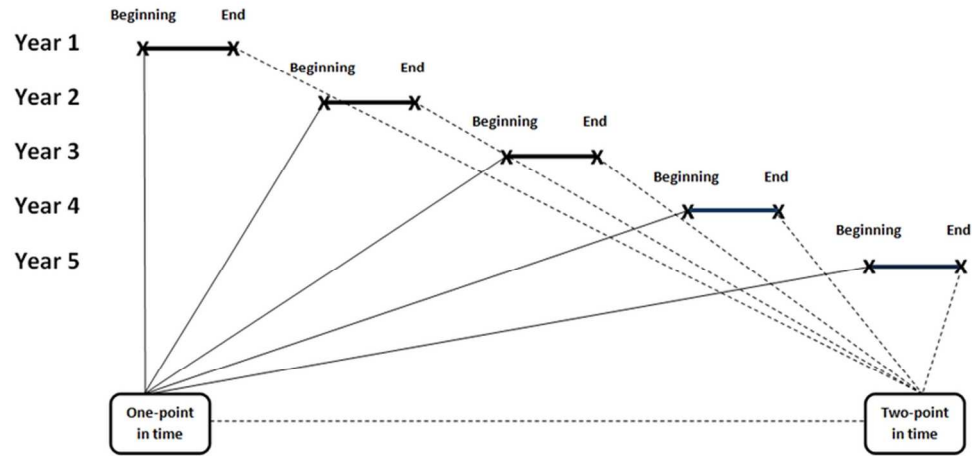
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23 -A fair and responsive health system requires a healthcare workforce that is blind to the
24 "undeserving" and the "morally reprehensible", hence studying the professional
25 development in relation with the stigmatising attitude development is of great
26 importance in addressing the inequalities in the delivery of care.
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29 **Strengths and limitations of this study**

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31 - The major strength of this protocol is its design that will allow us to study the
32 professional development and possible change(s) in attitudes over a time period.
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35 - The limitation of this study is the uncertainties pertaining to the sample size calculation
36 as well as the fact that we may measure a self-reported attitude rather than an actual
37 attitude. The sampling limitations imposed by ethical requirements also raise issues
38 about a selection bias. While the possibility of the bias needs to be acknowledged, the
39 nature of the research question probably limits the bias.
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Figure 1: Study design for MBBS program



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