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**TOWARDS AN EVIDENCE BASED APPROACH TO NOVICE
MENTORING IN ACADEMIC CLINICAL PRACTICE: LESSONS FROM
INTERNAL MEDICINE AND PRACTICAL APPLICATIONS FOR
PALLIATIVE MEDICINE**

17 December 2020

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DECLARATION

I hereby certify that this thesis constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

I declare that the thesis describes original work that has not previously been presented for the award of any other degree of any institution.

Signed,



Lalit Kumar Radha Krishna

ACKNOWLEDGEMENTS

To my wife -my compass, my muse, my therapist and my best friend who inspires
me to be the man my father would have been proud of;

To my mother for always believing in me;

To my sons who define me;

To my mentees who drive me;

To my Shifu and my supervisors who guide me;

To SingHealth who support me;

THANK YOU

This thesis is dedicated to my father and my grandfathers who remind me that the
way to a good life is an honourable life.

Abstract

Mentoring boosts the professional and personal development of mentees and mentors and raises the reputation of host organisations. In Palliative Medicine, mentoring shapes thinking, enhances patient centred care and improves interprofessional collaborations. Inspired by these successes, I designed the Palliative Medicine Initiative (PMI) and created the ‘Novice Mentoring’ approach to provide structured research mentoring support to medical students and/or junior doctors focused on publishing their research in peer reviewed journals. However, poor characterization of Novice Mentoring has left it vulnerable to the nebulous threat of ‘ethical issues in mentoring’ jeopardising all forms of mentoring. Better delineation of Novice Mentoring and the threat of ‘ethical issues in mentoring’ is key to sustaining the PMI.

Aims

This thesis seeks to understand ‘**what is required to ensure a consistent and safe Novice Mentoring approach?**’

Methods

Developed from my reviews of education research approaches in Palliative Medicine, I proffer the Systematic Evidence Based Approach (SEBA) research methodology to structure an accountable and reproducible evidence based approach to address the aims of this thesis. SEBA’s Split Approach’s concurrent use of thematic and directed content analysis, and it’s Jigsaw Perspective’s melding of identified themes and categories, forward a more holistic overview of regnant mentoring data. SEBA’s Funnelling Process then verifies the identified themes/categories against summaries of included articles, creating funnelled domains that frame the discussion.

Results

Novice Mentoring begins when micro-environments representing each mentee, mentor, and host organisation's goals, abilities, interests, and circumstances combine to form mentoring relationships within a mentoring ecosystem. The mentoring framework and assessment of the mentoring ecosystem guides the mentoring relationship through Novice Mentoring's competency based stages, allowing for timely support of the mentees. This feedback process and oversight of the mentoring ecosystem facilitates 'balance' between individual needs of the mentoring relationship and consistency in the mentoring approach, structure in the assessment processes within a nurturing mentoring ecosystem.

Discussion

Inadequate support, assessments, and/or oversight of the mentoring ecosystem precipitate 'ethical issues in mentoring'. However, these threats may be addressed by using the Novice Mentoring Framework to structure the mentoring ecosystem. In addition, the concept of 'equipoise' is proffered as a means of assessing mentoring program sustainability.

Conclusion

Whilst published in peer-reviewed journals with the hope of revolutionising mentoring, the SEBA methodology I designed and my conceptualisation of terms such as 'ethical issues in mentoring', the 'mentoring ecosystem', 'balance', 'equipoise' and the Novice Mentoring Framework will benefit from external critique and independent review to enhance their validity.

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Chapter 1. Introduction - Road mapping the scene

1.1 Introduction

1.1.1 The evolving face of mentoring in medicine

Mentoring in medicine is traditionally seen as a means of guiding a medical student or a junior doctor (mentee) to realise their potential and/or achieve their goals (1). This support comes from a senior, more experienced, trained, altruistic clinician (mentor) who takes an interest in the development of the mentee (2, 3). The mentor's experiences and practice often shapes the manner that holistic, personalised, appropriate, specific, timely and accessible support to the mentee (henceforth mentoring support) is provided (4, 5, 6). This is in conjunction with the mentoring setting and goals established. Mentoring support may take the form of career counselling, general clinical advice over the course of a posting, preparation for leadership roles (5) or the guided completion of a clinical, administrative, educational, scientific and/or research endeavour (7, 8).

The mentoring process may unfold differently depending on the parties involved (9). Traditional concepts involving an unstructured dyadic relationship between mentee and mentor have recently given way to the involvement of host organisations that provide dedicated program designers and administrators who determine the rules, roles, goals, expectations, and timelines of the mentoring process (10). Other

mentoring approaches may involve mentoring between a mentor and a group of mentees, possibly with the assistance of other mentors and/or more experienced 'senior' mentees (1, 11). Further configurations include mentoring support provided by peer, near-peers and/or junior mentors. The advent of video conferencing and the wider adoption of text messaging and other forms of social media correspondence providing synchronous and asynchronous mentoring support have also transformed mentoring practice (3, 4).

Variability in the mentoring approach is also fuelled by a range of factors including the mentee, mentor and host organisation's (henceforth stakeholder)'s goals, abilities, availabilities, knowledge, skills, experience, attitudes, motivations and their individual, academic, clinical, research, professional and psychosocial circumstances. Mentoring approaches have also had to adapt to accommodate to the stakeholders' specific mentoring settings and practical constraints (13), particularly amidst the COVID-19 pandemic that has limited in-person meetings, seen mentors seconded to different roles to meet mounting clinical demands on the healthcare system (12) and changed mentoring needs and goals (6).

This variability in mentoring practice undergirds increasing data promoting formal mentoring programs that are a part of a structured training program and utilises a well-defined mentoring structure that delineates the course, approach, assessment methods and objectives of the mentoring process (2, 14). Indeed, when not part of a formal program, and focused upon counselling and career advising and/or providing emotional and personal support, mentoring relationships often lack a consistent approach, objective, or timeline, and simply run their course and peter away (6, 15). Yet it is clear there is a role for these various forms of mentoring in medical training

(12, 13), undergirding the presence of unique forms of mentoring approaches including leadership, research, academic, clinical, group, mosaic, interprofessional, peer, near-peer, novice, and e-mentoring. Whilst each mentoring approach plays a specific role and boasts distinct characteristics, roles, approaches, and structure, most remain poorly described and not formally examined in the extant literature (3, 16). Consequently, this lack of characterisation has denied these new forms of mentoring their unique place amongst the pantheon of educational approaches used in medicine (17). Most, if not all, of these distinct forms of mentoring have instead been grouped together and frequently conflated with coaching, role modelling, supervision, advising, networking, teaching, tutoring, advocating, and sponsoring which compromises practice, support, and oversight of the mentoring processes, raising questions as to mentoring's overall benefit (18-20). More concerning, regnant conflation of mentoring practices have also heightened worries over mentoring's potential for discrimination, breaches in professional boundaries, bullying, misappropriation of mentee's work and even physical and verbal abuse (henceforth ethical issues in mentoring) (21-23). These anxieties call into question mentoring's role in medical education and jeopardises support for mentoring programs within training curricula (21-23).

1.1.2 Chapter Overview

Given variations in practice, approach, support, and oversight amongst regnant mentoring practices, and raising apprehension over the employ of mentoring, this thesis will focus upon my Novice Mentoring approach as it is applied in the Palliative Medicine Initiative (PMI). With this in mind, this introductory chapter will consist of three sections. Section 1 will sketch mentoring's role in Palliative Medicine, the

concept of Novice Mentoring and its characteristics within the PMI. Section 2 will delineate threats posed by ‘ethical issues in mentoring’. In Section 3, I will roadmap the course I will take to address my primary research question – **“What is required to ensure a consistent and safe Novice Mentoring approach?”**

Section 1 The Concept of Novice Mentoring

1.2 Mentoring in Palliative Medicine

Mentoring provides personalised, longitudinal education for learners with different needs, abilities, goals, and experiences across a variety of settings (23-25). These features are especially important in the Palliative Medicine (PM) setting where training and practice occurs in homecare, hospices, community and acute hospitals and tertiary healthcare centres that may be emotive and complex in nature, thus raising moral, legal, professional and ethical matters that may challenge junior clinicians (26-28). Mentoring in PM is seen to provide a flexible individualised approach to education and support to the PM interprofessional team which include professionals from nursing, social work, spiritual care, counsellors, physiotherapy, and occupational therapy as well as physicians from a variety of specialities and settings (26-28). Wahab *et al.* (10) and Wu *et al.* (11) report that mentoring in PM improves interprofessional communications and provides mentees with personalised, appropriate, specific, timely and longitudinal support over the course of their training (2, 4, 10).

Furthermore, in a speciality that prides itself on “improving the quality of life of patients and their families facing the problems associated with life-threatening illness,

through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual Palliative Care” (7, page 1), mentoring in PM also broadens a mentee’s conceptual model of clinical care, from disease and diagnosis oriented care to one shaped by the patient’s individual goals, psycho-emotional needs, social considerations, prognosis, and function (29, 30).

However, diverse practice settings, goals, clinical considerations and stakeholder interests have left mentoring in PM poorly described and often employing a mix of different mentoring approaches rendering mentoring in Palliative Medicine poorly understood (34-38).

1.2.1 The Development of ‘Novice Mentoring’ in Academic Palliative Medicine

Acknowledging these gaps in understanding and inspired by mentoring’s successes in PM (12, 13), I designed the Palliative Medicine Initiative (PMI) to ensure a consistent mentoring approach for medical students and junior doctors who were novices to research in medical education, Palliative Medicine, end of life care and ethics (1-3). The PMI program focuses upon providing personalised, appropriate, accessible, specific, timely, holistic, and longitudinal research mentoring support (21-23). Recognising the evolving nature of PM practice, the complex sociocultural nature of mentoring, and the changeable nature of the mentoring environment, the PMI was constructed to be sufficiently flexible to allow for personalisation of mentoring relationships without compromise to the prevailing mentoring standards and

professional codes of conduct nor prejudice in the provision of mentoring support (1-3). The goal of the PMI is to increase understanding and development of evidence based research in these fields amongst medical students and junior doctors (4).

Recognising the lack of data on mentoring in PM and apparent commonalities between mentoring in PM and Internal Medicine (IM), I studied and adapted key aspects of accounts of mentoring of novices in IM to fashion a structured mentoring approach to ensure a consistent mentoring approach, support, and oversight of novices in PM (16, 18, 19). I applied this concept to research mentoring in PM and honed its employ within the PMI with studies on the mentees' mentoring experiences, feedback from mentees and mentors, and the use of mentoring diaries (11-13). The product of these adaptations have resulted in the unique practice of Novice Mentoring (1, 4). I characterise Novice Mentoring as

“a dynamic, entwined, adaptable, context-specific, goal-sensitive, mentee-, mentor-, host organisation-, mentoring approach-dependent relationship between an experienced clinician, junior clinicians and or students and the host organisation (henceforth stakeholders) that is focused upon creating personalised and enduring mutually beneficial mentoring relationships within a nurturing and responsive mentoring ecosystem. The mentoring ecosystem establishes a mentoring framework that sets out a consistent mentoring approach to guide the mentoring relationship through Novice Mentoring's competency based mentoring stages; nurture mentoring relationships that can contend with the diverse influences upon the stakeholders, their mentoring relationships, and the mentoring program; and establish effective assessment, oversight, and support processes. The mentoring ecosystem also takes a

proactive role in anticipating the trajectory of the mentoring relationships and the impact of individual sociocultural, personal and professional considerations upon the course of the mentoring relationship by proffering a balanced and personalised mentoring experience that complies with agreed upon codes of conduct” (1, 4)

I will characterise these elements in more detail in Section 1.3.3. when I have introduced the various features of the PMI.

1.3 Lessons from the Palliative Medicine Initiative (PMI)

To effectively appreciate my Novice Mentoring approach, it is essential to appreciate the manner that it is employed within the PMI. Adapting the lessons learnt from reviews of mentoring in IM and studying its effects on mentees and mentors within the PMI, I deduced five key aspects that underpin Novice Mentoring’s continued success (1, 4). One, its formal mentoring structure supported by a host organisation (in the case of PMI it is the Division of Supportive and Palliative Care (DSPC) and the Division of Clinical Education (henceforth DCE) at the National Cancer Centre Singapore (NCCS)) (1, 4). Two, being part of the formal medical curriculum where the PMI is weaved into the fabric of the DSPC undergraduate and postgraduate education program (14). Three, a clearly defined mentoring approach that is consistently adopted by experienced, trained and well-supported mentors who are guided by explicit codes of conduct, expectations, roles, responsibilities and timelines

(2). Four, a conducive mentoring environment that nurtures personalised and enduring mentoring relationships (15).

Five, the employ of PMI's proactive approach to program improvement that has seen the incorporation of a clinically relevant code of conduct, a combined 'criterion based' mentee-initiated matching process, mentor and mentee training programs, a longitudinal assessment program, an anonymised feedback process, mentoring diaries, and a framework to ensure effective assessment and oversight of the mentoring program by the host organisation (18, 19). Indeed, this program of improvement continues to inform Novice Mentoring practice in the PMI and is itself informed by PMI-led reviews of key aspects of mentoring practice in Internal Medicine including Sng *et al.* (6)'s and Toh *et al.* (5)'s reviews of successful mentoring relationships; Hee *et al.* (15)'s characterisation of a nurturing mentoring environment; Tan *et al.* (17), Chua *et al.* (14) and Hee *et al.* (18)'s delineation of the essential aspects of mentoring structures; Chia *et al.* (19)'s discernment of the roles and responsibilities of the host organisation that supports, assesses and oversees the mentoring program, environment and relationships and Sheri *et al.* (20)'s review of mentor training. The combination of regular improvements to Novice Mentoring's approach based on feedback and mentoring studies in the PMI; and the inculcation of new peer reviewed data from Internal Medicine underscore Novice Mentoring's evolving nature (1, 2, 4-6, 9-11, 14-17, 19, 22, 23, 31-38). Evaluation of the impact of changes to the Novice Mentoring approach and the PMI program including the inclusion of mentoring diaries, the impact of online meetings on mentoring dynamics, support, oversight, and assessments during the COVID-19 pandemic and use of various social media platforms are in turn studied

as part of the PMI's program improvement process and published to inject a level of independent review to the PMI.

In turn, the PMI's success in adapting to changing academic settings has also sparked interest in expanding its employ beyond academic research based mentoring settings and Palliative Medicine settings (21, 22). This has spurred efforts to better understand this gestalt approach (21-23). Here I draw upon my reviews to describe the key aspects of this evolving concept of Novice Mentoring in the PMI.

1.3.1 A Formal Program

The PMI is hosted by the Division of Supportive and Palliative Care (DSPC) and the Division of Clinical Education (henceforth DCE) creating a formal mentoring program in Palliative Medicine at the National Cancer Centre Singapore (NCCS) (1, 4). A formal mentoring approach is characterised by being part of the training curricula; the employ of a structured approach; clear mentoring goals; aligned expectations; an agreed upon code of conduct; an effective assessment program and oversight of the mentoring process. As a formal program the PMI also sets the study topics; ensures that mentors are trained, supported, and assessed to ensure a consistent, mentee-centric approach; establishes a common understanding of the mentoring process including roles, responsibilities and expectations of each party involved; and facilitates personalised mentoring of junior doctors and medical students towards publishing articles in peer reviewed journals to advance research in PM (20).

1.3.2 A Structured Approach

A critical aspect of a formal program is its structured approach (1). The key elements of this structured approach is the PMI's mentoring framework and Codes of Practice (henceforth CoPs) that seek to confine practice within prevailing educational, professional, clinical and organisational standards (1, 4). This structured approach has successfully overseen the publication of more than 80 solo mentee and mentee co-authored articles in peer reviewed journals and the presentation of more than 70 posters at international conferences in Palliative Medicine, medical ethics, medical education, End-of-life Ethics (EoLE) and Health Services Research involving approximately 90 mentees over the last eleven years (1)

1.3.3 Developmental

The longitudinal nature of the Novice Mentoring process begins with recruitment, training, and matching mentees through to the publication of the mentored research project (1). This process pivots on the development of enduring and personalised mentoring relationships that can surmount inevitable changes within the mentoring process and interactions (1, 4). Constant adaptations to the mentoring approach are required to nurture enduring and personalised Novice Mentoring relationships which are necessary to accommodate to each stakeholder's dynamic circumstances (4). The CoPs guided by frequent and holistic assessments of the mentoring relationship shepherd these adaptations and underscore the importance of mentoring assessments, oversight and, indeed, mentor training (6).

1.3.4 Stages, Competencies and Balance

The PMI program proceeds in stages built around the research process revealing its structured competency based nature (1). Progress from one stage to another is determined by successful achievement of stage specific competencies (1).

1.3.4.1 Stage 1

The PMI stages begin with the initiation of the mentoring process, where mentees and mentors are recruited and briefed on the mentoring project and informed about the various projects available under the PMI program (18). At this initial stage, candidates (both mentees and mentors) are interviewed by the organisers to determine their suitability for the PMI program. The organisers consist of senior clinicians who have been trained in mentoring, and who are experienced in the use of Novice Mentoring in the PMI (6). Once the candidates are determined to have the appropriate qualifications, principles, skills, knowledge, attitudes, values, and beliefs which are in keeping with the basic standards and culture of the PMI, and if the candidates are keen to be part of the PMI, they are enrolled by the host organisation (18).

Newly recruited mentees and mentors are trained on communication skills and giving feedback (17, 37). They are also made aware of their roles, responsibilities, the mentoring structure, timelines, codes of conduct, standards of practice, the assessment methods used to determine how the mentoring relationship is progressing, the support mechanisms available to help mentees and or mentors throughout the mentoring journey, the expectations upon them and the feedback mechanism (17).

1.3.4.2 Stage 2

The matching stage follows the recruitment and initial training of mentees and mentors and sees mentees introduced to all the PMI mentors and briefed on the topics available under each mentor (18). The mentees select their potential mentor and have an initial pre-mentoring meeting to set out their goals, availabilities, expectations, motivations and needs in an honest discussion (18). The frequency of meetings, the type of ancillary communication, such as emails or text messaging, are also established as well as the 'turn around' time for responses (18). If mentees and mentors agree to pursue a mentoring relationship, they are provided with a two-week trial period (18). During this period, either party may terminate the mentoring trial and will be provided with a chance to match with other potential candidates (18). Feedback from both parties will be sought in the event of a termination and discussed with the organisers (18).

1.3.4.3 **Stage 3**

The mentoring relationship follows the course set out by the mentoring framework (17). The mentoring framework ensures consistency in the mentoring approach and helps mentors take on their many roles which include a mix of teaching, coaching, role modelling, supervising and sponsoring mentees to meet mentoring goals, provide holistic and personalised support and achieve individual goals and need at each stage of the research process (3). The mentoring framework also allows flexibility to attend to the individual needs, requirements and changes in the mentee's or mentor's situation over the course of the mentoring process (4).

Equilibrium between flexibility to meet the individual needs of mentees and their mentoring relationships, and consistency to guide mentoring processes, competency based assessments and ensure practice remains within the confines of the CoPs. This

highlights the concept of ‘balance’ (17). ‘Balance’ is monitored closely by the host organisation and is also informed by mentee and mentor feedback and appraisals of their mentoring progress and experience at bi-monthly intervals (19).

The PMI Novice Mentoring Approach is outlined in Table 1.1.

Table 1.1 The PMI Novice Mentoring Approach

Recruitment	All mentors recruited to the PMI were experienced clinicians and of consultant or attending grade at the Department of Palliative Medicine (DPM) at the National Cancer Centre Singapore (NCCS) and were registered Palliative Medicine specialists with the Singapore Medical Council.
Mentor Training	All mentors were provided with mentor training to ensure a consistent Novice Mentoring approach (20, 39, 40).
Introductions	Medical students were given the opportunity to work with mentors of the same gender and background in keeping with prevailing reports that this improved mentoring outcomes (5, 6, 17).
Mentee-initiated Matching	Mentee-initiated matching was promoted to create enduring and personalised relationships (18, 41, 42). The PMI offered all medical students the opportunity to initiate one-to-one mentoring relationships with one of 6 PMI mentors at DPM during their 2-week Palliative Medicine electives.
Mentee Briefing	Mentees were briefed on the professional, mentoring and research interests of the 4 female and 2 male PMI mentors and provided guidance on how to select a mentor.
Align Expectations	PMI mentees were also informed of a mentor’s and mentee’s roles and responsibilities and briefed on the PMI’s individual face-to-face, dyadic mentoring approach to better prepare them for the PMI mentoring process (1, 4, 14).
Pre-mentoring meeting	As with other mentoring programs at the time, mentees who had selected a mentor, were invited to attend pre-mentoring meetings where mentees and mentors discussed potential research topics, their aspirations, expectations and concerns and established the goals, timelines, roles and responsibilities, expectations, codes of conduct and the frequency of face-to-face meetings (2, 4, 43).
Personal Time	As with other mentoring programs at the time, mentees who had selected a mentor, were invited to attend pre-mentoring meetings where mentees and mentors discussed potential research topics, their aspirations, expectations and concerns and established the goals, timelines, roles and responsibilities, expectations, codes of conduct and the frequency of face-to-face meetings (2, 4, 43).
Protected Time	PMI mentors were provided with ‘protected time’ to pursue their education and mentoring projects (6).
Mentor Recognition	As with many of the prevailing programs at the time mentor contributions to the PMI program and mentoring successes were considered in their yearly appraisals and in applications for promotion and academic credentialing (1, 2, 4, 6, 17). PMI mentors were also given priority for funding and leave for education meetings and conferences.

1.3.4.4 Stage 4

Once the mentoring process is complete and the goals of the mentoring program have been achieved, many mentees do remain in the program with direct involvement in other projects. Some mentees help recruit new mentees for the program and stay on as ‘near-peers’ (43). The employ of ‘near-peers’ in the PMI is a relatively new evolution of the PMI approach that whilst outside the remit of this thesis provides evidence of the positive experience from mentees of their mentoring experiences (4). The employ of ‘near-peers’ also underlines the PMI’s evolving nature (1).

1.3.5 The role of the host organisation

The host organisation ensures ‘balance’ (19) and is focused on improving the quality of mentoring interactions between stakeholders referred to as ‘mentoring dynamics’ (2, 4). Both these considerations play a critical role in the larger concept of a ‘fit for purpose’ mentoring relationship.

To create a ‘fit for purpose’ mentoring relationship, the host organisation must match mentees and mentors with complementary working styles, preferences, timelines, availabilities, needs, motivations, abilities, experience, skills, and goals (4) ‘vetted’ by the program (1, 2). There must also be due consideration of the anticipated trajectories and possible adaptations required of the mentoring relationship and the mentoring outcomes to secure ‘balance’ if it proceeds along a specific trajectory (4). The host organisation also considers the impact of the new trajectory on CoPs and the mentoring framework further along the anticipated trajectory, and the potential impact upon the

hidden, informal, and formal mentoring curriculum, mentoring culture and the reputation of the mentoring program (2).

Creation of a 'fit for purpose' mentoring relationship also underlines the different roles of the mentor in role modelling, tutoring, coaching, and supervision to support the mentoring relationship (3). It also underlines the impact of the mentoring environment that this mentoring relationship will exist in and the shifting needs, goals and availabilities of the stakeholders upon the mentoring relationship (33).

The concept of 'fit for purpose' mentoring relationship also lays the foundation for the concept of 'equipoise'. This concept, discussed in Chapter 3, represents another unique contribution of this thesis to advancing Novice Mentoring practice (1, 2). The concept of equipoise pivots on the acknowledgement that change within the Novice Mentoring process is inevitable, as mentoring processes, structures, relationships, and settings change, as do the needs and availabilities of stakeholders (1, 2, 4). Equipoise is also needed as new elements to the mentoring process are introduced; as have been over the course of the last 11 years of the PMI. Equipoise seeks to ensure that efforts to support these new features and additions to the program do not overstretch available resources and compromise the sustainability of the PMI (1, 2, 4). The concept of 'equipoise' could be likened to the application of the 'fit for purpose' concept at a programmatic level (1, 2).

1.3.6 Mentoring ecosystem

Encapsulating the concepts of 'balance', 'mentoring dynamics', 'equipoise' and 'fit for purpose' mentoring relationships, competency based mentoring stages and the

mentoring framework, is the mentoring ecosystem (2). Built from the data accrued from this thesis, the mentoring ecosystem accounts for the impact of individual contextual, personal, academic, sociocultural, research, professional and educational factors affecting each stakeholder, their availabilities, motivations, goals, and abilities that impact their willingness and attitudes towards engaging with the mentoring relationship underlining the notion of Novice Mentoring as a sociocultural construct (15, 17). This notion also underlines the influence of stakeholders. Here, their demographic, background, interests, abilities, skills, availabilities, motivations, goals and willingness to invest in the mentoring process and relationship as well as their professional, academic, clinical, research, personal, and sociocultural considerations form each stakeholder's microenvironments (15).

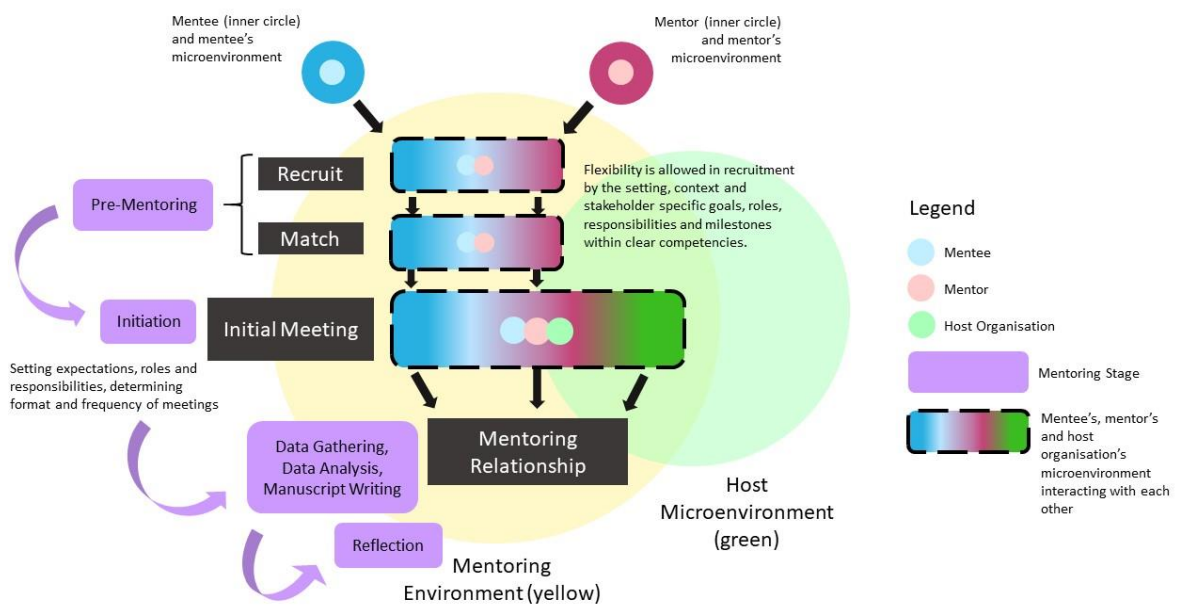


Figure 1.1 The mentoring ecosystem

Mentoring relationships form with the fusion of the microenvironments within the mentoring ecosystem. Mapping the course of the mentoring relationship through the various stages of the research process is the mentoring ecosystem's mentoring

framework. The influence of external factors and the mentoring environment on the balancing process and the creation of ‘fit for purpose’ mentoring relationships are captured by the mentoring ecosystem. I will expand upon all these key characteristics in Chapter 3 and Chapter 4.

Section 2 Ethical issues in mentoring

1.4 Challenges surrounding Mentoring and Novice

Mentoring

Efforts to differentiate Novice Mentoring from other educational and mentoring approaches in order to circumvent the effects of ‘ethical issues in mentoring’ have only been partially successful. This is as the nebulous concept of ‘ethical issues in mentoring’ remains poorly understood and in need for better characterisation (21-23). This will be the focus of Section 2 of this Introductory chapter.

1.4.1 Conflated education practices

To distance Novice Mentoring from practices such as coaching, role modelling, networking, advising and supervision, which are frequently conflated with mentoring (6, 50), I define a supervisor as being “*focused upon professional development of the student*”, a coach as “*facilitating learner development through use of “deliberate practice strategies”*”, a role model as “*setting out to create a positive example of good practice*”, an advisor as “*helping with scheduling, logistics and applications*” and a sponsor as “*influencing promotion and advancement*” (3). These characterisations

help delineate each of these interventions as discrete entities which ought to be distanced from Novice Mentoring (3). Whilst it has been previously suggested that mentors do adopt all these roles in meeting their many duties as part of the ‘mentoring spectrum’, such a posit lies beyond the scope of this thesis (3).

1.4.2 Conflated mentoring practices

To delineate Novice Mentoring as a distinct mentoring approach, I will differentiate it from the most common forms of mentoring in PM – peer and e-mentoring (1, 4). Peer mentoring involves mentoring between fellow physicians or medical students of similar experience and training (51-53) and is focused upon short working relationships or study periods such as preparation for examinations. Peer mentoring tends to be reliant upon mutually beneficial mentoring relationships and shared understanding of the goals, roles, responsibilities, expectations, and codes of conduct and often lack formal structure and oversight by external parties (50). This informal nature renders peer mentoring especially prone to competing interests, difficulties in recognising the contributions of mentees and mentors, and challenges in maintaining equilibrium between the needs of the mentees and mentors (43).

E-mentoring, on the other hand, involves a senior, experienced clinician mentoring junior physicians and/or medical students across different sites using synchronous or asynchronous electronic communication formats or a combination of both in time limited mentoring relationships (54-56). Frequently structured and supported by the host organisation or the program organisers (54-56), e-mentoring often comes with clear codes of conduct, established roles, responsibilities and timelines and oversight by third parties (32, 57). Boasting a consistent matching process, alignment of

mentoring goals and the nurturing of trusting personalised mentoring relationships, e-mentoring circumnavigates the risk of ‘ethical issues in mentoring’ by offering a transparent ‘paper trail’ to be reviewed should disputes arise (2, 23, 48). Enhanced access to another and the development of more informal e-mentoring programs however attenuates the effects of ‘protective structures’ proffered by formal e-mentoring programs (32) and raises the potential for breaches in professional boundaries and encroachment of off duty hours and weekends (32).

1.4.3 Assessment gaps

However, efforts to characterise Novice Mentoring as a distinct entity remain compromised by the lack of effective assessments tools that consider the diverse influences upon the mentoring process and scrutinize the mentoring ecosystem (2, 33). These gaps are compounded by the continued use of mentoring tools that are rooted in “*Cartesian reductionism and Newtonian principles of linearity*” (58), page 21) that focus only upon measurable factors, ignoring the rich contextual and sociocultural milieu surrounding mentoring ecosystems and the fluid features and quality of mentoring relationships (mentoring dynamics) (21, 22). These gaps render most data captured by current mentoring tools of limited use (33), further clouding the practice of Novice Mentoring and inviting concerns over ethical issues in mentoring (21, 22).

1.4.4 Compromising ‘balance’

A failure to understand, assess and support the Novice Mentoring process undermines ‘balance’ in the mentoring process (1) which invariably leads to unregulated variability and predisposes to ethical issues in mentoring (21, 22).

1.4.5 Lack of consistent mentoring approach

A lack of a consistent mentoring approach imperils mentoring practice and predisposes stakeholders to disparate mentoring experiences, poor mentoring support and ineffective oversight of mentoring relationships (2, 14, 17, 21, 22). These gaps are especially evident amongst mentoring accounts published before 2000 and explains their exclusion from recent PMI-led reviews (14, 20, 43). Current accounts of mentoring, however, have fared only slightly better, poorly describing the blended approaches used to achieve different goals in different healthcare settings and involving mentees and mentors from differing clinical, academic and research backgrounds (2). Failure to contend with these differences compromises assessments of the mentoring approaches and outcomes (47, 59, 60), compromises policing of mentoring relationships and programs (61-63), precipitates lapses in practice (46, 64, 65) and misalignment of expectations and oversight (16, 20, 38).

1.4.6 Inadequate mentoring assessment

Failure to effectively appreciate mentoring's longitudinal nature underpins the mistaken evaluations of mentoring experiences (6, 50) and compounds concerns over ethical issues in mentoring (66-68).

1.4.7 Ineffective mentoring environment

Fnais *et al.* (69) and Jagsi (70) suggest that medicine's hierarchical work culture creates a source of power imbalance that leaves mentees with little means of redress or support, particularly when dependent upon the mentor for academic and or professional development and progress (71-73). This underscores the importance of

due consideration of the mentoring environment. A poor mentoring environment is also unsupportive of whistleblowing and invites further concerns that lapses in mentoring practice will go unreported (74-76).

1.4.8 Roots within Internal Medicine

It cannot be ignored that the critical elements of the Novice Mentoring are built upon data drawn from my reviews of mentoring in Internal Medicine (IM) (1, 2, 4). This includes the recruitment, matching, mentor training, structuring and assessment processes, as well as the shaping of the mentoring relationship and the mentoring environment (2, 17). Whilst on the surface it may be argued that integrating these features built on data from IM into the PM setting adds weight to the notion that mentoring data from IM can be safely extrapolated to PM, in truth this is only partially true (1, 4, 15). In fact, Novice Mentoring is created from studies with clearly stipulated inclusion and exclusion criteria (1, 4, 15) and refined by PMI based programmatic reviews, mentee interviews, feedback, and evaluations of the PMI program (1, 4) making Novice Mentoring unique and not easily extrapolated to other settings (1, 4, 15).

1.5 Understanding ‘ethical issues in mentoring’

Efforts to understand and address ethical issues in mentoring are not helped by the presence of poorly described and often overlapping terms like mentoring ‘misuse’ (23), ‘misapplication of mentoring’ and ‘mentoring abuse’ (47, 48, 77). Interestingly, despite their diversity, descriptions of mentoring ‘misuse’ (23), ‘misapplication of mentoring’, ‘mentoring abuse’ and irregularities in mentoring may be traced to Dolan

and Johnson (49)'s term 'ethical issues in mentoring'. In adopting Dolan and Johnson (49)'s term 'ethical issues in mentoring' to encapsulate current accounts of 'abuse', 'misuse', 'irregularities' in mentoring, I will consider the 'tensions' identified by Dolan and Johnson (49) that relate to maintaining some hierarchy within the mentoring relationship without hindering the building of open relationships between mentees; balancing research productivity with a commitment to training; maintaining equilibrium between the needs of the mentee and the mentor; ensuring equity in recognising the efforts of mentees and mentors; and assessing the motivations of mentees and mentors through the lens of data from my reviews of current accounts of 'ethical issues in mentoring' in Chapter 3.

1.5.1.1 Focusing the study of ethical issues in mentoring

Whilst attention has been focused upon fears of misuse of the mentoring process and mentoring relationship (2, 10, 11), how these issues manifest in PM have not been described, hampering recruitment of mentors and mentees, undermining the sustainability of mentoring programs (2, 23, 48) and underlining the need for more effective understanding of 'ethical issues in mentoring' (2, 23, 48). Therefore, better understanding of ethical issues raised by authors like Singh *et al.* (78), Soklaridis *et al.* (45) and Byerley (46) who fail to describe the specific form of mentoring they refer to or setting that it takes place will help cement the PMI's role in undergraduate medical education at my institution (2, 23, 48).

Section 3- Mapping the thesis

Having characterised Novice Mentoring and its use in the PMI and sketched an understanding of the nebulous concept of ‘ethical issues in mentoring’, I will lay out the course of this thesis beginning with its goals, the primary and secondary research questions that I will address and an overview of the chapters that follow.

1.6 The goals of this thesis

The goals of this thesis are to:

1. Create an evidence based approach to the study and practice of Novice Mentoring. Whilst peer reviewed evidence based data is seen as the optimal means of influencing thinking, shaping practice, changing attitudes, and garnering financial and administrative support, having much of the data used in this thesis published in peer-reviewed journals also ensures that data accrued is accountable, reproducible, robust, and defensible, particularly when the data is drawn from my reviews of Novice Mentoring and analysed using my research methodology. An evidence based approach will also enhance effective understanding of practices and structures that have predisposed Novice Mentoring to ethical issues in mentoring.
2. Create an evidence based framework to secure a consistent approach and produce effective assessment and oversight of Novice Mentoring in the PMI.

1.6.1 The Research Questions

In view of the threats to the PMI and my Novice Mentoring, the primary research question of this thesis was established to be:

What is required to ensure a consistent and safe Novice Mentoring approach?

However, my efforts to address this primary research question in an evidence based approach does demand two further considerations. The first is a robust and reproducible research approach. The second is better understanding of prevailing data on the evolving concept of Novice Mentoring that continues to change amidst regular program evaluations and data driven adaptations to the PMI program.

Using the Systematic Evidence based Approach (henceforth SEBA) methodology that I created, I will seek to better understand the two central concepts in this thesis. These considerations reveal three secondary research question which are:

1. **“What is known of Novice Mentoring in Internal Medicine (IM)?”** which acknowledges Novice Mentoring’s roots in Internal Medicine (IM), its role in influencing Novice Mentoring’s employ in PM and the dearth of Novice Mentoring data in PM (1, 2, 9)
2. **“What is known about ethical issues in mentoring in surgery and medicine?”**, given the wide range of issues associated with this poorly described concept
3. **“What is known of mentoring structures?”** as it is seen as the primary source of ethical issues in mentoring. This last SEBA driven review sees secondary reviews of two key elements of mentoring structures – Codes of Practices (CoP)s and the

mentoring framework. Using the SEBA methodology, I will address the following questions:

- I. What is known of Codes of practice (CoPs) in mentoring?
- II. What is known of mentoring frameworks?

1.7 Thesis Overview

Chapter 1 - Introduction

Chapter 2 – The Study Methodology

Introducing the Systematic Evidence Based Approach (SEBA)

Drawing upon my reviews of current research methodologies used in PM education, I conclude that a more structured, transparent, accountable, and reproducible approach to studying mentoring practice is required. Here, I propose my Systematic Evidence Based Approach (SEBA) (2, 23, 79-83) methodology that comprises of the following elements: 1) Systematic Approach, 2) Split Approach, 3) Jigsaw Perspective, 4) Funnelling Processes, 5) Comparing grey literature and non-evidence based data with evidence based literature, 6) Synthesis of narrative review (NR) in SEBA.

Chapter 3 – Results

Chapter 3 comprises the results section of this thesis and focuses on addressing these secondary research questions raised. However, unlike traditional results sections, each section of Chapter 3 represents the results of two Narrative Reviews in SEBA (henceforth NRs in SEBA) on Novice Mentoring and on ethical issues in mentoring in

medicine and surgery, as well as two Systematic Scoping Reviews (SSRs in SEBA) on Codes of Practices (CoP)s and the mentoring framework. To be clear I have opted to employ NRs to study Novice Mentoring and ethical issues in mentoring as there is already ample range and depth of data on these subjects. Conversely both the concept of CoPs and the mentoring framework are relatively new and have not been mapped requiring the employ of an SSR. Each NR and SSR in SEBA will be accompanied by their rationale, specific search strategy, Population, Intervention, Comparison, Outcome and Study Design (PICOS) and Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) to ensure that each review is reproducible and structured.

Section 3.1 – NR in SEBA on Novice Mentoring in Internal Medicine

Whilst I created the concept of Novice Mentoring, an active program improvement process in the PMI has seen the Novice Mentoring evolve (1, 2, 4-6, 9-11, 14-17, 19, 22, 23, 31-38). To address the secondary research question, “what is known of Novice Mentoring in Internal Medicine?”, an NR in SEBA of my recent publications is required to consolidate prevailing data on Novice Mentoring.

Section 3.2 – NR in SEBA on ethical issues in Surgery and Medicine

Guided by the research question, “**what is known about ethical issues in mentoring in surgery and medicine?**” this NR in SEBA will study and critically appraise prevailing data on ethical issues in mentoring.

Section 3.3 - SSR in SEBA of CoPs and SSR in SEBA of Mentoring Frameworks

To address the secondary research question, “**What is known of mentoring structures?**”, these SSRs in SEBA on CoPs and mentoring frameworks address prevailing gaps in understanding of the key elements of mentoring structures.

Chapter 4 – Discussing the findings of NRs and SSRs in SEBA

Chapter 4 will be the discussion section of this thesis and will bring together the findings of the two NRs in SEBA and two SSRs in SEBA featured in Chapter 3 to create a holistic picture of Novice Mentoring. Recognising the lack of a consistent approach to Novice Mentoring, Chapter 4 proffers the Novice Mentoring Framework (NMF), an evidence based approach to structuring it.

Chapter 5 - Critique of the SEBA methodology, mentoring ecosystem and the Novice Mentoring Framework

Following on, in discussing the findings of this thesis, Chapter 5 proffers a critical analysis of SEBA, the mentoring ecosystem and the NMF in Novice Mentoring. It also considers the viability of NMF in research and its ability to guide Novice Mentoring practice in clinical settings.

Chapter 6 - Conclusion

This chapter brings together the findings of this thesis and makes recommendations that the mooted use of Novice Mentoring in clinical setting may still be premature and that further studies into the mentoring environment are indicated.

1.8 Summary

The three sections of this introductory chapter outline the focus on Novice Mentoring and the ethical issues in mentoring and signposts the unique nature of the chapters that follow. Chapter 2 represents the methodology section of the thesis introducing the SEBA methodology. Chapter 3 represents the ‘results’ section of the thesis and will contain results of two NRs in SEBA and two SSRs in SEBA that address my secondary research questions. Chapter 4 is the discussion section, and in bringing together the findings of secondary research questions, allows me to begin to answer my primary research question. Chapter 4 will proffer an evidence based Novice Mentoring Framework that I believe will ensure a consistent and safe Novice Mentoring approach. Chapter 5 offers a critique of the SEBA methodology, the mentoring ecosystem and the Novice Mentoring Framework, whilst Chapter 6 serves as the conclusion and highlights areas for future study. In laying out this approach, this chapter maps the course of this thesis.

Chapter 2. The Study Methodology

2.1 Chapter Overview

In the last chapter, I advanced a definition for Novice Mentoring that I employ within the PMI program and sketched the expanding concerns surrounding ethical issues in mentoring. In this chapter, I critically review current approaches employed to study mentoring highlighting their strengths and weaknesses. Based on these reviews and accounting for the unique features of Novice Mentoring, I will proffer the Systematic Evidence Based Approach (henceforth SEBA) that will be employed to study key aspects of Novice Mentoring.

2.2 Section 1: Reviewing the use of systematic reviews, systematic scoping reviews and narrative reviews in Palliative Medicine and Internal Medicine Education

To determine the appropriate means of studying Novice Mentoring and ethical issues in mentoring, my team and I reviewed current methods of reviewing mentoring data in Palliative Medicine education.

2.2.1 Systematic Reviews in Palliative Medicine Education

Systematic reviews (SR)s are well established in quantitative research and their use has become increasingly commonplace in the context of clinical education (84). However, noting that medical education is a complex construct that is informed by the personal experiences of its stakeholders and their individual historical, sociocultural, ideological, and contextual factors, questions have been asked as to the appropriateness of this approach in the study of medical education and mentoring (85).

Drawing upon Mah *et al.* (86)'s PMI-led review entitled a Systematic Scoping Review (SSR)s of Systematic Reviews (SR)s in Palliative Medicine Education (henceforth PME), I found that SR use in PME was almost exclusively guided by a Positivist approach (87-89). A Positivist approach struggles to contend with a lack of a hypothesis (90) or theory of mentoring. Indeed PMI-led theories of mentoring forwarded by Wahab *et al.* (10), Loo *et al.* (37) and my Mentoring Pyramid (37) have met with mixed response (87-89). Hopes of addressing this gap using positivistic approaches are further limited given evidence from Ng *et al.* (33)'s PMI-led review of assessment tools in mentoring which suggest significant portions of available mentoring data is limited by poorly constructed assessment tools rooted in "*Cartesian reductionism and Newtonian principles of linearity*" that oversimplify mentoring interactions, neglect the impact of mentoring environment, and fail to account for mentoring's nature nor its sociocultural roots (58), page 21). Overall, this reductionist perspective weakens SR's ability to make effective contributions to mentoring knowledge or to proffer a viable overarching theory of mentoring (91).

Guided by a *hypothetico-deductive* approach (85), SRs seek to “(1) *build testable hypotheses*, (2) *design an experiment through operationalising variables (i.e., identifying variables to manipulate and measure through group assignments)*, and (3) *conduct an empirical study based on experimentation*” (85), page 690). SRs achieve this goal by creating experimental conditions to manipulate different mentoring variables or ‘operationalising’ variables and confining the number, characteristics and nature of the data sources being considered (90, 92, 93). SRs also attempt to manipulate the impact of confounders leading to a failure to acknowledge that different aspects of mentoring, such as the mentoring structure, framework, environment, culture, and the mentoring relationship, are intimately intertwined and impact the mentoring process (85). This prioritisation of technical rather than interpretive synthesis methods (94, 95) and maintenance of a tight area of focus across speciality boundaries (87-89), study designs (96), and the range and size of the associations reported (95, 97-100) in order to meet its goal of forwarding transparent (101-108), systematic (96, 109-111), and reproducible (112, 113) research data restates SR’s focus upon creating ‘experimental conditions’ and explicates SR’s exclusion of grey literature and other non-evidence based data sources. These include perspective, conference, reflective, position and opinion papers; editorials; commentaries; letters; posters; oral presentations; forum discussions; interviews; blogs; governmental reports; policy statements and surveys (110, 114). Here, focus upon empirical evidence to forward methodologically robust data and statistical based analysis (93, 95) neglects the influence of mentoring’s nature and setting specific features (90, 94) and disregards mentoring experiences necessary for effective elucidation of mentoring processes and relationships (115-117).

Indeed, guided by the notion that a “*structured and pre-defined process that requires rigorous methods to ensure that the results are both reliable and meaningful to end users*” (118), page 2), SR’s focused studies or ‘deep dives’ into a specific aspect of mentoring render the data accrued of little value (118) given their neglect of mentoring’s entwined, evolving, context specific nature (86), the mentoring ecosystem and the concept of ‘balance’ between flexibility and consistency within the mentoring ecosystem (118-120). Further underlining the incompatibility of a Positivist perspective is Sullivan and Sargeant (84)’s note on SR’s use of a ‘dualism’ perspective. This concept position runs contrary to current perspectives of mentoring as a sociocultural construct and accepts that that any interaction between researcher and stakeholders would influence thinking about the mentoring relationship, the mentoring experience and impact future interactions (121, 122).

Rarely applied in the PME setting, Post Positivist guided SRs are more in keeping with the notion of mentoring being a sociocultural construct refuting ‘dualism’ (123) and holding that “*science does not progress through verification of theories, but rather through their falsification*” (124), page 695). However, despite acknowledgement of the fallibilities of researchers, the need for often subjective input from all stakeholders and limitations of their tools to achieve ‘*scientific realism*’ (124), page 695), Post Positivist guided SRs remain focused upon observation and measurement and experimental conditions to test its *objectivist deductive* perspective. As with the dominant Positivist-led SRs, Post Positivist guided SRs are compromised by poorly described terms and conflated practices (86, 124) and use of largely unvalidated ‘mentee centric’, ‘single time point’ surveys and mentoring tools that ignore

mentoring's entwined and longitudinal nature and the opinions and experiences of mentors and host organisations (2, 33).

Yet, Mah *et al.* (86) also found several useful facets to SRs including its reliance upon effective planning and contemplation of the setting, the focus of the study, search terms, the PICOS and the analysis of the data. This improves the reproducibility and transparency of the review process (86). Similarly having the review process overseen by a team of experts boosts transparency and accountability of the research process and focus attention on specific areas of interest (125, 126) as well as consider data that may, at least at first, seem 'irrelevant' to the area of study (112, 127, 128). Similarly a team based approach determine clearly defined research questions, search terms and to carry out data analysis, reviews, oversight, and quality appraisals are significant learning points that ought to be part of any approach that seeks to provide a structured examination to the study of Novice Mentoring (86).

2.2.2 Systematic Scoping Reviews in Palliative Medicine

Education

Kamal *et al.* (129)'s PMI-led review entitled "*Enhancing education in Palliative Medicine: the role of Systematic Scoping Reviews*" highlights the presence of significant variation in how Systematic Scoping Reviews (SSR)s are conceived. The PRISMA Extension for Scoping Reviews (PRISMA-ScR) defines SSRs as "*a type of knowledge synthesis, follow[ing] a systematic approach to map evidence on a topic and identify main concepts, theories, sources, and knowledge gaps*" (111), page 1). Arskey and O'Malley (130) suggest that a SSRs serve to '*map the key concepts*

underpinning a research area and the main sources and types of evidence available' (130), page 19) whilst Agarwal *et al.* (131) highlight that they “*do not undertake quality assessment*” (131), page 2). However, despite these variations in conceptualising SSRs, their role in medical education and in PME literature is growing (129).

SSRs provide the opportunity to study wide areas of interests and scrutinise complex phenomena through evaluation of data in terms of its nature, features and volume (132) across diverse methodological and epistemological traditions (97). It also allows users to examine the extent, range, and nature of a research activity, determine the value of conducting a full systematic review, summarise and disseminate research findings, identify gaps in the existing literature for further research, clarify working definitions, and delineate conceptual boundaries of a topic or field (99, 100, 111). Its reputation as ‘*mapping reviews*’ (132), page 141), sees SSRs evaluate mentoring as “*a body of literature has not yet been comprehensively reviewed, or exhibits a large, complex, or heterogeneous nature not amenable to a more precise systematic review*” (132), page 141) and “*for examining emerging evidence when it is still unclear what other, more specific questions can be posed and valuably addressed by a more precise systematic review*” (118), page 2). SSRs in PME also provide an overview of existing evidence without strict limitations to the quality of literature being used and employ less restrictive inclusion criteria as compared to systematic reviews (98, 132).

Yet, SSRs face several limitations due to its “*lack of consensus on how to conduct and report scoping reviews*” (111), page 467). Kamal *et al.* (129) report that, like SRs, SSRs rely upon clearly defined search terms to drive its search processes and, fall

victim to an inability to remain focused upon a specific form of mentoring. These weaknesses compromise SSR's accrument of relevant articles and predispose it to conflations in data (129). These concerns are multiplied when considering that SSRs include grey literature, data from mixed and qualitative methods and information (129). SSRs are also limited by the manner that data is analysed. Here inconsistencies in the types of approaches used to analyse SSRs, and a lack of a structured approach to the process of analysis used raise significant questions about the accountability, transparency, and reproducibility of the analyses (129). The impact of grey literature upon the analysis is also questioned when much of the data taken from these sources are neither evidence based nor often peer reviewed, including personal communiques, commentaries, letters, short reports, opinion pieces, perspective pieces and editorials that are author dependent and opinion based (henceforth non-evidence based data) (129). It is thus unsurprising that the weight provided non-evidence based data in the final synthesis of the discussions is also open to conjecture (129) particularly in the absence of quality assessments of the included articles, the propensity for bias and the pursuant impact of what would seem to be opinion based data on the analysis cannot be disregarded (115).

2.2.2.1 Sequential study of SSR in Internal Medicine

The limited number of included papers and the diversity of the findings within certain themes/categories raised some concerns as to the validity of Kamal *et al.* (129)'s PMI-led review (133). To address these concerns and provide a more holistic perspective of SSR use, a review of prevailing use of SSRs in medical education was carried out in keeping with the *sequential approach* adopted in this thesis (86, 129). The *sequential approach* sees secondary or follow up studies carried out to provide further

depth to the analysis and a greater perspective (86, 129). In this case, the *sequential approach* also provides a glimpse of similarities between PME and medical education practice (86, 129).

Guided by the research question, “**what is known of SSRs use in medical education?**”, an SSR was conducted and revealed 62 SSRs in medical education (134). Critically it revealed findings to those identified in the SSR in PME. These consistencies add weight to the notion that findings in medical education may be extrapolated to the PME setting (86, 129). It also suggests that the sequential approach highlights the importance of secondary studies to confirm the findings and or to expand understanding of a particular aspect of interest within the primary review (86, 129). Methodologically, the employ of the *sequential approach* highlights a different aspect of the Funnelling Process that will be described later in this chapter (86, 129). Here, the Funnelling Process can combine the themes/categories from one review with that from the secondary review to create larger themes/categories (86, 129). The funnelled themes/categories will provide triangulation of the findings of the reviews of SRs and NRs (86, 129).

2.2.3 Narrative Reviews in Palliative Medicine Education

Ong *et al.* (134)’s review entitled “*A systematic scoping review of narrative reviews in Palliative Medical education*” found that Narrative Reviews (NRs) defined as “*a scholarly summary along with interpretation and critique*” (135), page 2) were widely used in PME to provide narratives of a particular area of study (136, 137). This narrative perspective highlights contextual nuances and allows occurrences, that might seem unrelated, to be seen in a new light (138). This unique perspective has seen NRs

gain traction in the study of multi-disciplinary practice, complex ethical issues and contextual and sociocultural influences where there is need for careful and holistic consideration (138, 139). NRs deepen understanding of a broad and/or complex issue by mapping prevailing literature and hidden systems that drive observed phenomena, often taking a multidimensional perspective on the area of interest (140).

Of particular interest to PME is NRs potential to account for PM's multidisciplinary approach to training, its use in diverse settings involving trainees from different training backgrounds, goals, needs, motivations, and abilities (10, 11). Here, NR's Constructivist roots offer a unique opportunity for a longitudinal perspective of PM training and PME and contend with the personalised nature of mentoring experiences and the influence of individual historical, sociocultural, ideological, and contextual factors on how individual 'stories' are interpreted and how they affect the experiences of the various stakeholders (121, 122, 141).

Yet, NRs have been at the centre of significant concerns (134). These include lacking explicit goals (142-146), its inclusion of diverse study populations and or settings (16, 143), variations in search terms (144, 147, 148), limited range and quality of data (144-146, 149) and the absence of a structured approach to its design, search, analysis, and synthesis. This is compounded by a lack of transparency (145) and accountability (143, 150, 151), given that the narratives forwarded are largely author dependent and prone to bias (134). Compounding these concerns is NR's 'selective' inclusion of evidence (135) increasing the risk of bias (153-156) and limiting its reproducibility (156).

2.3 Determining an effective review process

Based on these PMI-led reviews of SRs, SSRs and NRs use in PME and my study entitled “*Enhancing Mentoring in Palliative Care: An Evidence Based Mentoring Framework*”, I proffer nine key considerations that must be met for effective study of Novice Mentoring (11, 16, 17). These include the need to appreciate mentoring’s nature; mentoring’s structured approach; the need for multisource, longitudinal, qualitative and quantitative data; the mentoring environment; notion of balance; sustainability and the employ of a Constructivist approach. I will discuss each in turn.

Consideration 1 - *appreciation of mentoring’s nature*

Each aspect of Novice Mentoring’s dynamic, entwined, evolving, adaptable, context-specific, goal-sensitive, mentee-, mentor-, host organisation-, mentoring environment-, mentoring approach-, and mentoring relationship-dependent nature (henceforth mentoring’s nature) has profound effects upon the design, scope, depth and focus of research on mentoring (5, 37).

Novice Mentoring’s context-specific nature, demands that studies of Novice Mentoring must be confined to a particular setting (15). For example, studies into research mentoring should be confined to mentoring programs situated within the research setting and ought not to include those set within the clinical setting. This distinction also applies to separating clinical and non-clinical research mentoring unless evidence arises verifying similarities between both approaches.

Similarly, Novice Mentoring's mentee-, mentor- and host organisation- dependent (henceforth stakeholder-dependent) nature demands that study populations be comparable (19). As a result, mentoring in undergraduate settings ought not to be conflated with postgraduate mentoring unless the data has confirmed significant similarities between both, as evidenced in non-clinical research mentoring.

Novice Mentoring's goal-sensitive nature similarly demands clearly stated inclusion and exclusion criteria both to guide the selection of articles and to ensure reproducibility and transparency (1, 4).

Consideration 2 - *need for a structured approach*

Inconsistencies in understanding, practice, structure and assessment of Novice Mentoring, the lack of rigorously delineated mentoring terms and evidence of overlapping or interconnected aspects of the mentoring process demand the employ of a structured review process to enhance accountability, reproducibility and transparency of the review process, its analysis and synthesis of its discussion points and the conclusions drawn (6, 50).

This structured process must include clearly laid out research questions, search terms and processes, clearly defined inclusion and exclusion criteria and a transparent and reproducible approach to the analysis of data (86, 129, 134). The research process should be overseen by a team of experts well-versed in the area of study (68, 157) and possess good understanding of the mentoring landscape to advise on the scope of the research process and to guide the establishment of clear research questions (68, 157).

The expert team must also include an experienced librarian to assist with the search terms and selection of databases (68, 157).

In addition, given its wide use in PME and in view of Methley *et al.* (158)'s recommendations, I propose that a Population, Intervention, Comparison, Outcomes and Study Design (PICOS) must be adopted to ensure that balance is struck between minimising the inclusion of irrelevant search terms and including pertinent intertwined elements of the mentoring process whilst remaining focused on the specific area of study (158). The addition of the PICOS approach to the research process overseen by the expert team ensures a structured review process (158).

The search process, too, should be carried out by independent and trained researchers with their independent findings discussed at meetings conducted by the research team (this may be done virtually to improve inclusivity) (159). Sandelowski and Barroso (159)'s 'negotiated consensual validation' approach should be used to achieve consensus on the titles and abstracts to be reviewed. Similarly, analysis of the final list of titles and abstracts to be reviewed must be carried out by independent and trained researchers who once again should discuss their individual findings in organised meetings (159). Negotiated consensual validation should be used to guide the researchers to a consensus decision on the final list of articles to be included in the review (159).

The findings of each stage of the process should be discussed with the expert team (68, 157, 159). The significance of involving an expert team is evident when consensus cannot be garnered or when the results are too small and require further elucidation.

The expert team have been shown to provide insights into the initial search findings and have on occasion suggested expansions to the search criteria or indeed further refinement of the search strategy (159).

The expert team may also recommend follow up studies or ‘sequential’ studies that build on the primary findings (68, 157). I highlight use of the sequential process in Section 2.5.2.5, where the SSR in PME highlighted the need for an SSR in medical education in Internal Medicine (50), and in Sections 3.1 and 3.2, where the NRs in SEBA on Novice Mentoring and ethical issues in mentoring directed sequential reviews on mentoring frameworks and CoPs (2). Such sequential reviews must be carried out by independent researchers and overseen by the expert team to enhance oversight and accountability not previously witnessed in most reviews of educational approaches (159).

Consideration 3 - *include multisource data*

Perhaps the most significant rationale for utilisation of multisource data comes from recognising mentoring as an evolving and transformative sociocultural construct that demands holistic consideration of Novice Mentoring’s mentee-, mentor-, host organisation-, and mentoring relationship-dependent nature (2). Indeed, recognising Novice Mentoring as a sociocultural construct underscores the need to consider the psychosocial and cultural characteristics of the stakeholders and their influence upon mentoring interactions and the personalised, contextual, sociocultural, professional, academic, research and relational considerations impacting the mentoring environment (15).

In her dissertation entitled “*Mentoring in adolescence: A sociocultural and cognitive developmental study of undergraduate women and sixth-grade girls in a mentoring program*”, Fachin Lucas (160) links mentoring to Vygotsky’s sociocultural theory of learning suggesting the “*novice or ‘mentee’ faces a challenge by using the ‘tools in the social environment adaptively in experimental imitation of the larger culture’s usage’ with the guidance and encouragement of the more experienced person or ‘mentor’*” (160), page 17). Fachin Lucas (160) believes this perspective aptly describes the planned process of mentoring between the mentee and the more experienced mentor ‘on the social plane’ and subsequent internalisation of the mentee’s experiences that informs future conduct and practice. For Fachin Lucas (160), the sociocultural aspect of mentoring also comes from negotiating the social and cultural roles and responsibilities within the mentoring relationship and the environment that informs the mentoring process. Inevitable variabilities in the setting, approach, goals, and outcomes creates “*multi-layered, bi-directional, contextualized relationships that promote the development*” (160), page 19) and reiterates the sociocultural basis underpinning the mentoring process. de Lange and Wittek (161) suggest mentoring’s sociocultural credentials arise from the nurturing of trust within the mentoring relationship, where shared norms between the mentee and mentor brings about cooperative setting from which trust grows. Banerjee-Batist *et al.* (162) suggest that the sociocultural influence on mentoring is evident when considering the mentee and mentor’s gender, culture, ethnicity and age and the societal factors such as the “*customs, lifestyles and values that characterize a society*” and impacts their interactions (162), page 115). For de Lange and Wittek (161) and Banerjee-Batist *et al.* (162), the effects of mentoring as a sociocultural construct is also evident in the

formation and development of mentoring relationships, highlighting the importance of the recruitment and matching processes in mentoring programs.

These posits suggest that mentees construct their own understanding of mentoring based upon their knowledge, skills, experiences, attitudes, and individual psychosocial, emotional, cultural, societal, personal, clinical, academic, research, professional, ethical, legal, and educational experiences, as well as their historical, sociocultural, ideological and contextual factors (109, 121, 122, 141). The mentoring relationship, too, is also informed and shaped by regnant environmental, social, academic and the clinical environment (109, 121, 122, 141).

Acknowledging Novice Mentoring as a sociocultural construct requires that the research methodology be able to consider data from different sources to allow effective consideration of stakeholder experiences, knowledge, skills, attitudes, personal history and psychosocial circumstances upon the mentoring experience (14, 15, 19). Multisource data also informs researchers of the evolving circumstances, differing goals, structure, support, assessments and oversight of the mentoring approach and the culture and settings of the mentoring program that impacts the mentoring process (14, 15, 19). It also brings to the fore the oft ignored views, perspectives, and influence of the mentor and host organisation found within grey literature and opinion and reflective papers, editorials, perspective pieces, commentaries, letters, posters and oral presentations featured in peer reviewed journals (14, 15, 19). Here, grey literature is defined using Farace and Schöpfel (163)'s Prague definition which suggests that grey literature

“stands for manifold document types produced on all levels of government, academics, business and industry in print and electronic formats that are protected by intellectual property rights, of sufficient quality to be collected and preserved by library holdings or institutional repositories, but not controlled by commercial publishers i.e., where publishing is not the primary activity of the producing body” (163), page 1 -5)

Thus, recognising Novice Mentoring as a sociocultural construct requires employment of a research methodology which considers grey literature, non-primary data driven articles, perspective and opinion pieces, reflective papers, editorial, essays, commentaries, letters, posters, oral presentations, forum discussions, interviews, blogs and surveys (non-evidence based data) (14, 15, 19), especially when such data is often lacking from bibliographic databases (19). Failure to include non-evidence based data may leave a review *“biased when it fails to report crucial information that may be hidden in some grey literature”* (164), page 1).

As such, a robust search strategy is necessary and must involve a number of bibliographic and grey literature databases. Dickersin *et al.* (165) found that use of just MEDLINE database resulted in the omission of 50% of relevant articles whilst Brettle and Long (166) note that failure to use a range of bibliographic databases risks the omission of key articles. Rathbone *et al.* (167) found that there were significant differences in the searches produced by the seven most common databases (Cochrane library, Database of Abstracts of Reviews of Effects (DARE), Excerpta Medica Database (EMBASE), Epistemonikos, Medical Literature Analysis and Retrieval System Online (MEDLINE), PubMed Health and Turning Research Into Practice

(TRIP)) by virtue of their scope and content. Jia *et al.* (168) report that language biases also affect database content which is especially worrying when mentoring experiences in the West, replete with its specific legal, educational, financial, medical, health care funding and sociocultural features, may render conclusions drawn inapplicable to most practices in the East (2). The editors of Nature.com one of the leading publishers in medicine suggests that Google Scholar

“provides a simple way to search broadly for scholarly literature. Includes peer-reviewed papers, theses, books, abstracts and articles, from academic publishers, professional societies, preprint repositories, universities and other scholarly organisations. Google Scholar sorts articles by weighing the full text of each article, the author, the publication in which the article appears, and how often the article has been cited in other scholarly literature, so that the most relevant results are returned on the first page”. Springer Nature Limited (169)

Löhönen *et al.* (170), however, warn that inclusion of data from Google Scholar results in a large amount of ‘spurious’ data, underscoring the need for effective evaluation of the included data. To ensure balance between focused study and the need to embrace intertwined elements of the mentoring process underline the need for scoping reviews of the topic to map the area of interest and determine the various interconnected elements associated with it (118). Such a scoping review could identify key areas to be studied and key search terms to be used (118). An example of this process is presented in Section 3.4 where elements linked to the mentoring structure was evaluated and which led to SSRs guided by the SEBA methodology (SSRs in SEBA) being carried out on Codes of Practices (CoP)s and the mentoring framework

(86). This approach also serves to underline the need for a structured approach to the tool employed to study mentoring (86).

Consideration 4 - *include qualitative and quantitative data*

The inclusion of grey literature and qualitative data provides useful insights into the experiences of various stakeholders over the course of the mentoring process (14, 15, 19). Such information on the mentoring experience from the perspectives of mentors and host organisations, however, are largely missing from current mentoring data and practically non-existent in regnant quantitative mentoring data (19).

Thus, building on Consideration 3 which requires all data sources to be considered, Consideration 4 suggests the need for a research methodology that is sufficiently flexible to contend with all forms of data (33). Indeed, it is suggested that each form of data provides a different insight into the mentoring process, such as simple demographic and ratings of mentoring experiences captured in quantitative data, the in-depth accounts of experiences afforded qualitative studies, and a mixture of data captured in mixed methods data (33). Together, these data sources will provide a comprehensive perspective of mentoring's evolving nature (4), mentoring approach, relationship and environment (2).

Consideration 5 - *longitudinal data*

Novice Mentoring's evolving nature underlines its longitudinal course and underscores the need for continuous assessments data (33). Such data ought to be taken at multiple time points along the course of the mentoring relationship (5, 6, 10). This would be a significant shift from many current perspectives and evaluations of

mentoring that focus almost exclusively upon the experiences of mentees at a single time point, and often at the end of the mentoring relationship (1, 2, 33).

One method of circumventing this lack of longitudinal data that would be consistent with the other factors highlighted in the considerations proposed thus far is to bring together non-evidence based data to provide a trove of longitudinal data and insights into the course of the mentoring process and the relationships within them (14, 15, 19). Aside from a structured approach to focus the inclusion criteria and focus the search process, bringing together different sources of data underscores the need for a structured approach to the analytic process (5, 6, 10). The two most common forms of analysis in prevailing PME research are Braun and Clarke (171)'s approach to thematic analysis and Hsieh and Shannon (172)'s approach to directed content analysis. Earlier reviews by Chua *et al.* (14) entitled "*Structuring Mentoring in Medicine and Surgery. A Systematic Scoping Review of Mentoring Programs Between 2000 and 2019*" and Ng *et al.* (33) entitled. "*Assessing mentoring: A scoping review of mentoring assessment tools in internal medicine between 1990 and 2019*" carried out by the Palliative Medicine Initiative (PMI) revealed that these two approaches provide different perspectives of the data.

As a result, I developed Krishna's Split Approach to carry out simultaneous analysis of the data using Braun and Clarke (171)'s approach to thematic analysis and Hsieh and Shannon (172)'s approach to directed content analysis (14, 33, 165). I also developed the Jigsaw Perspective to combine the overlapping themes and categories resulting, to create overarching themes/categories to provide a more comprehensive view of the data collected (14, 33, 165). Combining the results of the two independent

analyses also help to triangulate the findings (14, 33). The addition of Hsieh and Shannon's directed content analysis addresses limitations in Braun and Clarke's thematic analysis by accounting for contradictory and new data often excluded in thematic analysis (22, 86, 129). The combination of thematic and content analysis carried out by independent teams of researchers also increases the trustworthiness of identified themes and categories (22, 86, 129).

To further enhance the trustworthiness and accountability of the themes and the categories identified, I developed the Funnelling Process that sees the themes/categories created compared with tabulated summaries of the included articles using Wong *et al.* (173)'s RAMESES publication standards: meta-narrative reviews, Greenhalgh *et al.* (174)'s article entitled "*Diffusion of innovations in service organisations: systematic literature review and recommendations for future research*" and Greenhalgh *et al.* (92)'s article entitled "*Storylines of research in diffusion of innovation: a meta-narrative approach to systematic review*". These comparisons carried out by independent researchers and overseen by the expert team help verify the findings against available data to determine if they are practical and realistic (22, 86, 129).

Consideration 6 - consideration of the mentoring environment

Acknowledgement of Novice Mentoring's course through the mentoring stages and the influence of the mentoring culture, structure and the mentoring relationship throughout the duration of the mentoring process demands consideration of the mentoring environment (9). The mentoring environment is made up of the mentoring structure and culture (9). Much of the data on the mentoring environment however

comes from non-evidence based data. Including such data demands careful consideration (22, 86, 129). In most cases, grey literature is often opinion based, frequently non-peer reviewed and usually not driven by primary evidence. Instead in most cases, data used to justify many papers in grey literature are drawn from secondary analysis of data selected by the authors often without clear inclusion and exclusion criteria, frequently lacking structure and transparency, are often at the author's discretion and thus not easily reproducible (22, 86, 129). To this end, the impact of this data should be compared to data drawn from traditional peer reviewed academic sources (22, 86, 129). This may be best accomplished through thematic analysis of data from grey literature and other non-evidence based or non-research based data and comparing it with themes identified from traditional peer reviewed academic sources (22, 86, 129). This would determine how much, if any, of the data from the former influences the final themes used to synthesise the review's discussion (22, 86, 129). We have were successfully employed such comparisons in PMI-led reviews including Kow *et al.* (23)'s review entitled "*A systematic scoping review of ethical issues in mentoring in medical schools.*" and Chia *et al.* (81)'s review entitled "*A Systematic Scoping Review of Teaching and Evaluating Communications in The Intensive Care Unit.*" to enhance transparency and the key element of trustworthiness of the analysis.

Cypress (175) found a variety of ways in which trustworthiness has been described. These include being used to "*appraise the rigor of qualitative research*" (175), page 254) and it has been suggested that it "*parallels the concept of internal and external validity, reliability and objectivity*" (175), page 255). Building upon Lincoln and Guba (176)'s, Guba (119)'s and Guba and Lincoln (120)'s description of trustworthiness

(175) as comprising of truth value, applicability, consistency and neutrality, I adopt Cleland and Durning (177)'s definition that sees trustworthiness as consisting of “*credibility, transferability, dependability, and confirmability*” (177), page 62-63).

Consideration 7 - *consider balance*

Acknowledgement of the tensions between the need for flexibility and personalisation of the mentoring process in order to meet the particular needs of the stakeholders, and the requirement for consistency across the various stages and settings of the mentoring process, underlines the need for holistic multisource data (1, 2, 33). Here, the Split Approach, the Jigsaw Perspective and the Funnelling Process come into their own, integrating grey literature and multisource data in a structured and reproducible manner (1, 2, 33).

Consideration 8 - *ensuring sustainability*

Whilst attempts to secure a structured, systematic, reproducible research process is laudable, it is also critical to ensure that these undertakings are viable (178, 179). Careful consideration as to the depth and breadth of the study, the human and financial resources available and viable timelines and effective communication networks are key in preventing a significant waste of administrative, financial and research time and resources (178, 179). Once again, external review by the expert team and a needs analysis are pivotal considerations before embarking on the research project (179).

Consideration 9 - *Constructivist approach*

Novice Mentoring's personalised and socioculturally informed nature (14, 19) underlines the need for a Constructivist ontological perspective that is able to account

for the influence of each stakeholder's understanding and individual psychosocial, emotional, cultural, societal, personal, clinical, academic, research, professional, ethical, legal and educational experiences shaped by their particular historical, sociocultural, ideological and contextual spheres that impact Novice Mentoring (129). This makes Novice Mentoring highly individualised and creates many mentoring 'realities' (180) underlying the associated adoption of a Relativist epistemological perspective (129).

Critically, with reference to my secondary research question, a constructive approach would offer insights into "*how and why events occur and how individuals make meaning of them*" (180), page 52) providing a means of understanding sources of ethical issues in mentoring. A Constructivist perspective of Novice Mentoring that sees mentees combining their knowledge and experiences, preferences and goals with the guidance and '*instructional scaffolding*' (181), page 238) provided, is consistent with prevailing understanding of the mentoring experience and best suited to capture the various aspects of the Novice Mentoring process. Kinsella (182) adds weight to this notion drawing similarities to the reflective process within the mentoring process and Constructivist theory where reflections inform the formation of new knowledge.

A Constructivist approach is also able to supplement narratives with emerging empirical data on the how and why different outcomes might occur in differing settings, situations or context (183). This is especially important in light of a dearth of mentoring data (2). Being able to combine the quantitative and qualitative data in a meaningful manner would allow greater understanding of Novice Mentoring (4, 180).

A Constructivist approach is not reliant upon the ‘context-mechanism and outcome’ (180), page 31) framework that underpins a realist approach, when understanding of such ‘mechanisms’ behind the various aspects of mentoring remain elusive (180). In addition, a Relativist lens within the Constructivist perspective (97) also offers a more accessible means of looking broadly at the current state of research (109), allowing for the ‘*construction of larger narratives*’ (184), page 55), and identifying gaps in knowledge by combining data from quantitative surveys, post-mentoring surveys, SRs and SSRs that dominate assessments and narratives of mentoring (135, 184). A Relativist lens allows new themes to emerge by acting as a ‘*collective, incremental enterprise*’ (180), page 51) that provides a means of studying various elements of the mentoring relationship, process and program and thus providing more robust explanations for different observations and outcomes in apparently similar approaches. In addition, it highlights the impact of contextual considerations and facilitates the integration, synthesis and organising of research results in a coherent manner, proffering new concepts to findings of interest or complementing and validating the findings of some prevailing studies (135, 184).

Here, a Relativist epistemological approach also allows for the rejection of ‘dualism’ posited in Positivist approaches that sees researcher and the participants as inseparable (180). Indeed, the researchers’ own views and perspectives shape the question that they ask and the manner that they interpret the data (135, 184). Whilst the presence of independent analysis ought to reduce bias it must be said that the influence of the researcher upon longitudinal mentoring interactions cannot be discounted (135, 184).

2.4 Section 2: Systematic Evidence Based Approach

(SEBA)

Guided by these nine considerations distilled from my reviews of the use of Systematic Reviews (SR)s, Systematic Scoping Reviews (SSR)s and Narrative Reviews (NR)s in Palliative Medicine education, the need for a more structured approach to the study of Novice Mentoring and ethical issues in mentoring is clear (1, 2, 4-6, 9-11, 14-17, 19, 22, 23, 31-38). Yet, it is also clear that there are elements from all three review processes that need to be drawn upon in crafting a new approach to study Novice Mentoring (1, 2, 4). This resulted in the design of the SEBA methodology (86).

Acknowledging the lack of understanding of the mentoring process, approach, relationships, and its effects, has led to different ontological and epistemological positions that in turn have determined what knowledge is of value (axiology), shaped the research methodology and directed the manner that the data collected is evaluated (1, 2, 4). Concurrently, failure to recognise mentoring as a sociocultural construct, appreciate mentoring's nature and its effects upon practice and its evaluation, the various aspects of the mentoring structure affecting the mentoring process and its long-term effects, have compromised the design and critically the structuring of prevailing efforts to study the mentoring process (2). The result of such lapses includes the absence of a consistent understanding of mentoring, diverse mentoring practices and gaps in assessment methods (33).

With the spiral in gaps in mentoring knowledge likely to worsen in light of a failure to understand mentoring, a lack of effective research methodologies and acknowledging

the need for a structured and reproducible approach to advance, the need for a new approach to studying mentoring that builds on the lessons learnt from these reviews is clear (22, 23). This requires pulling together the lessons learnt in Section 1 (Chapter 2.2). This includes the inclusion of an expert team to be involved in the design, search and analysis of the data, as well as the synthesis of the narrative, ensuring accountability, reproducibility and structure of the review (23, 79). The expert team would help to guide the focus and scope of the study, determination of the research question, provide oversight of the search process and synthesis of the narrative (23, 79).

The search process should be structured to contend with the need for grey literature, mixed methods, quantitative and qualitative data, and the use of clear search terms, PICOS and PRISMA guidelines. It should also incorporate 'snowballing' of the references in the included articles to attenuate the risk of key articles being omitted (23, 79). In the absence of clear definitions and a consistent understanding of many of the search terms used, and in order to acknowledge the entwined nature of mentoring, search terms should be carefully reviewed (23, 79). The process of determining the titles and abstracts to be included and latterly the final list of full text studies to be analysed should be carried by a team of experienced researchers who carry out their analysis of the data independently and arrive at consensus decisions on the findings (23, 79). Use of independent reviewers help enhance the accountability and transparency of the review process (23, 79).

Analysis of the included articles should be carried out by independent teams of researchers using Sandelowski and Barroso (159)'s negotiated consensual validation

approach, following the employ of the Split Approach and the application of the Jigsaw Perspective and Funnelling Process.

The influence of grey literature and non-evidence based articles included in these studies need to be considered and should be weighed up against data from evidence based sources (2, 23, 81). Indeed, the process of analysis of the data should be carried out by a team of independent researchers (14, 33, 185). The analysis should be accompanied by quality assessments of the included articles to better inform the impact of the included articles (2, 23, 81).

The narrative should be reviewed by the expert team and should involve local experts to ensure there is transparency and balance in the synthesis of the data (23, 79). This process of involving local clinicians, educational experts, administrators, and program organisers also ensures that the conclusions found are practical, sustainable, and adoptable within the local practice setting (23, 79).

Underpinning this process must be a Constructivist approach (181). As shown, the restrictive nature of a Positivist approach prevents the effective inculcation of grey literature and non-evidence based publications and hinders its ability to provide a holistic perspective of mentoring (85). Built around the notion of dismissing mysticism and superstition in favour of measurable occurrences, the Positivist approach focuses upon experimentation and attempts to manipulate the setting to allow cause and effect testing of hypotheses to elucidate the 'truth' about the practice (181). Unrealistic and ultimately untenable given its attempts to study mentoring by deconstructing it or through focused study which denies the impact of the researcher on the mentoring

process and the entwined nature of mentoring, a Positivist approach appears to be an unlikely choice to guide mentoring (85).

A Post Positivist approach maintains that “*a single, objective, external, tangible, measurable reality*” (123), page 695) is unlikely and acknowledges the prevailing limitations of mentoring tools. However, whilst more realistic in acknowledging the impact of the researcher upon the data collected, it fares little better in the mentoring setting (123). At the heart of the problem is an experiment based approach, albeit one aimed at falsification of theories (123). Relying upon a Reductionist approach to create overarching theories to explain the mentoring phenomena and thus denigrating its personalised nature, also relegates a Post Positivist approach from within present considerations (123).

At the heart of these efforts must be a Constructivist driven approach and a Relativist lens to better capture the sociocultural, personalised, multidimensional aspects of medical education and PME interventions (23, 79). Concurrently, there is also the need for effective design and oversight of the study with careful consideration as to the sustainability and viability of the project and its potential contribution to advancing medical education and mentoring practice (23, 79). Here, having oversight of the design, structure, analysis, and recommendations will help assuage reviewer dependent biases and oversights (23, 79).

With these considerations in mind, I proffer a novel six-staged research methodology called the Systematic Evidence Based Approach (SEBA) (2, 23, 79-83) explained below.

2.5 The Research Paradigm

SEBA (2, 23, 79-83) adopts a Constructivist approach based on the notion of mentoring as a sociocultural construct. This notion suggests that learners construct their own understanding of mentoring based upon their current understanding, knowledge and individual factors, including: psychosocial, emotional, cultural, societal, personal, clinical, academic, research, professional, ethical, legal and educational experiences, that are shaped by their historical, sociocultural, ideological and contextual factors (2, 17). A Constructivist approach also acknowledges that mentoring relies upon the mentee's, the mentor's and the host organisation's (stakeholders)'s motivation to participate in the mentoring process, set the agenda and focus of their particular goals, appreciate the role and benefits of the mentoring process upon their careers, development and practice and their willingness to sustain their mentoring relationships over the duration of their mentoring process (2, 17). A Constructivist approach will be equipped to contend with the flux in the interactions caused by mentoring's evolving nature (2, 4, 17). Considering these factors and capturing this knowledge making or active construction of knowledge, and the variety of factors that influence the motives, goals and conduct during the mentoring process of the individual stakeholders involves all forms of empirical, theoretical and observational data; and must necessarily include the influence of the community or learning environment surrounding this process of constructing knowledge (2, 23, 79). As a result, this Constructivist-led methodology helps delineate *how and why different outcomes might occur in differing contexts* (2, 23, 79).

With knowledge construction influenced by the particular learner's experiences and evolving geopolitical and sociocultural factors within their evolving settings and disparate funding, education and healthcare systems, SEBA's Relativist lens facilitates the advancement of a multidimensional and longitudinal perspective of Novice Mentoring from the perspectives of all the stakeholders (15). This will account for mentoring's nature, including the changing views of stakeholders (15, 19). Using a Constructivist approach and a Relativist lens, SEBA is better able to account for the social and behavioural aspects involved in mentoring and the wide diversity of mentoring practice that will be entertained within this thesis (2, 23, 79).

In addition, a Relativist lens highlights the impact of contextual considerations and facilitates the integration, synthesis and organising of research results from diverse settings through use of thematic and content analysis. Such combinations, as outlined above, are akin to Moss and Haertel (186)'s use of Topper (187)'s and Williams and Vogt (188)'s concept of methodological pluralism. Moss and Haertel (186) describe the concept of methodological pluralism as:

“a range of perspectives and practices for working productively across methodological traditions in studying social phenomena and changing social practice. This includes approaches where the goals are for methodologies to complement one another in deepening understanding of a complex social phenomenon and/or to challenge one another by illuminating taken-for-granted assumptions and limitations of any particular methodology; approaches focused on particular problems and on broader themes encompassing sets of problems; approaches intended to construct innovations

in research practice that might incorporate what has come before into a novel methodology; and approaches involving generalisations and research syntheses of various sorts”. (186), page 6)

Topper (187) argues that use of methodological pluralism is possible given that

“the goal for any program of research or typology of such programs is to justify “how, why, and in what context it yields a more adequate understanding of social...phenomena [and] how it enables us to cope more effectively with the world around us (or to understand under what conditions or to what degree ‘coping more effectively with the world around us’ may be something one should not wish to do)”. (187), page 187)

Although largely focused upon qualitative studies, this theory lends itself to the present mentoring context and allows for the combining of thematic reviews (TR)s, literature reviews (LR)s, systematic reviews (SR)s and systematic scoping reviews (SSR)s within the SEBA methodology (86, 129, 134).

Evidence from recent reviews that have employed the SEBA methodology suggest that SEBA’s Constructivist approach brings together diverse methodological approaches that can create a narrative of Novice Mentoring in Internal Medicine (IM) (50). As I have argued, it is widely accepted that data from IM can be effectively extrapolated to Palliative Medicine (PM) (10, 11).

SEBA’s combination of editorials, quantitative surveys, scoping reviews, thematic reviews (TR)s, literature reviews (LR)s, SSRs and SRs helps produce a narrative

review of Novice Mentoring that exhibits theoretical generalisation and thus applicability in other settings (134). Notably, Schick-Makaroff *et al.* (109), Moss and Haertel (186) suggest that such an approach will proffer

“robust multi-methodological program of research that embraces the challenge of alternative perspectives not only enhances our understanding and capacity for action within particular programs of research but also sustains our growth and resourcefulness as a field”. (186), page 228)

It should be noted that at the heart of the SEBA methodology may be discussions focused on SSRs or the synthesis of narratives for NRs.

2.5.1 My role in the delineation of the SEBA methodology

For philosophical transparency (189), I hold a mental model (190) that mentoring is a sociocultural construct that is best studied through a Constructivist approach. Perhaps unsurprisingly, a critical consideration that drove my design of the study of mentoring was my belief that mentoring was an individualised process customised to provide prompt, accessible, individualised, necessary, continuing and comprehensive support to mentees (1, 2, 4). This notion and my Constructivist perspective of mentoring as a sociocultural concept influenced my analysis and may have biased my reading of Positivist and Post Positivist perspectives (1, 2, 4). However, to ensure that these biases do not hijack the data analysis, the synthesis of the narratives and conclusions drawn, a team of clinical, academic, research and educational experts were included to evaluate the findings of each stage of development and application of the SEBA methodology (23, 79). Similarly, publishing my work as 16 peer reviewed journal

articles served to further enhance the trustworthiness of my analyses (1, 2, 4-6, 9-11, 14-17, 19, 22, 23, 31-38).

2.5.2 The Six-staged Systematic Evidence Based Approach (SEBA)

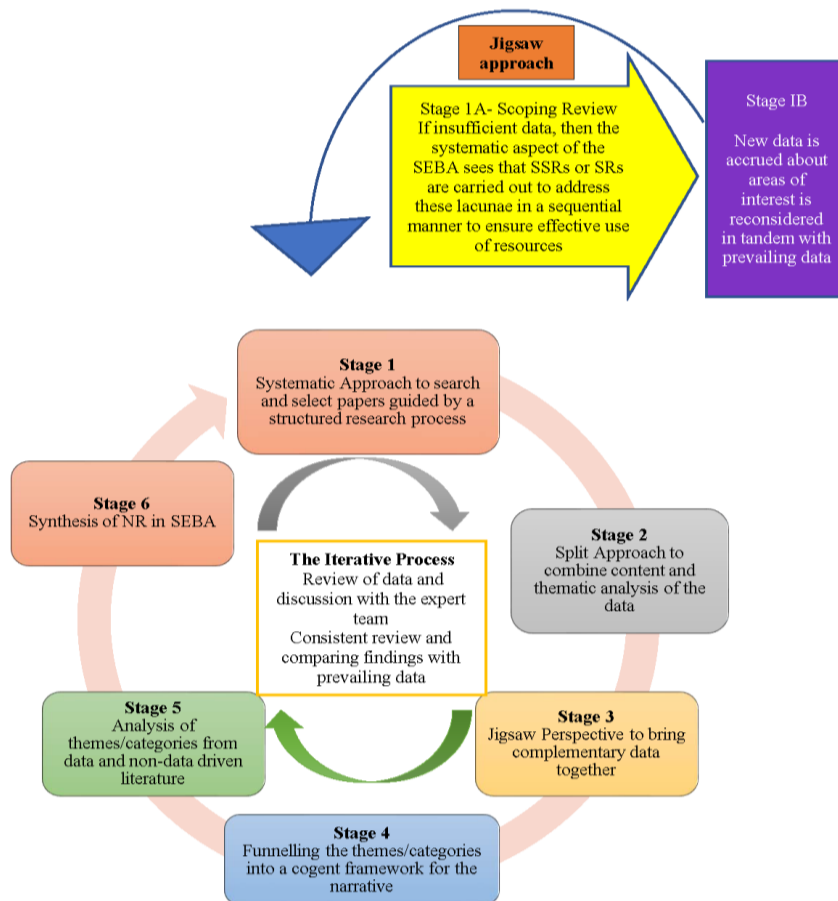


Figure 2.1 The SEBA Process.

Stage 6 may be used interchangeably either to synthesise an NR in SEBA or to create discussion for SSRs in SEBA. SEBA consists of a series of transparent, structured, reproducible processes that combine the fragments of prevailing mentoring data to produce an effective map of Novice Mentoring through the creation of a narrative review (86, 129, 134).

2.5.2.1 Stage 1 of SEBA: Systematic Approach

Systematic Approach: The systematic approach within SEBA begins with the mapping stage which entails a systematic scoping review (SSR) of the area of interest (110). Here, an SSR's wide range of study allows an inclusive review of prevailing data across a diverse set of search engines (110). This will inform the researchers of the available data, the key terms associated with the particular area of interest to be used in the search processes and the limitations in prevailing data (110). An SSR to scope the area of interest also serves as acknowledgment of mentoring's entwined nature and helps highlight links between the area of interest and other aspects of the mentoring process (110). It also identifies possible search terms and, critically, possible alternative terms and the manner that they overlap (110).

Concurrently, confining interests to a particular aspect of mentoring also entails specifying which specialities that will be studied. In this thesis, for example, studies of mentoring in Internal Medicine (IM) will include specialities delineated by the American College of Physicians (191). I propose that SSRs be carried out by at least three independent reviewers to attend to concerns of bias (23, 79). The result of the independent searches is discussed online and/or in face-to-face meetings and the final list of articles are decided using Sandelowski and Barroso (159)'s "negotiated consensual validation" approach. To ensure consistency and reproducibility a PICOS and PRISMA is employed. Use of PICOS was derived from the review of SR use in PME which revealed it as the most common approach employed in PME (158). In addition, PICOS is in keeping with the recommendations set out by Methley *et al.* (158)'s recent review.

Preliminary analysis: As part of the systematic approach, a preliminary analysis is carried out using one database (i.e. PubMed) and sees the results analysed using Braun and Clarke (171)'s approach to thematic analysis. The findings should be discussed with an expert team. In this review, the expert teams consisted of medical librarians from the Yong Loo Lin School of Medicine (YLLSoM) at the National University of Singapore and the National Cancer Centre Singapore (NCCS) and local educational experts and clinicians at the YLLSoM, NCCS, Palliative Care Institute Liverpool and Duke-NUS Medical School (henceforth the expert team) (23, 79). In the event that there are differences in the findings that cannot be resolved within the team, I reviewed the area in question and determined the disposition of the codes and themes in question (23, 79).

Stage 1A arises when gaps in current understanding of the research area are identified. This then leads to a 'formal' SSR, and where required, SRs in a particular area across multiple databases where the topic of study would be the specific gap identified (192). Determination as to whether an SR or an SSR will be used is guided by Munn *et al.* (192)'s treatise on choosing between SSRs or SRs. For instance, a dearth of data on mentoring dynamics was identified, which therefore necessitated the careful study of current data through use of a SSR in Stage 1A of SEBA.

Informed by Munn *et al.* (118)'s review, SSRs in Stage 1A (in this thesis) are employed to:

1. Identify the types of available evidence in the specific aspect of Novice Mentoring (e.g., organisational culture),
2. Clarify key concepts/ definitions in the literature,
3. Examine how research is conducted in the specific aspect of novice mentoring,
4. Identify key characteristics or factors related to the specific aspect of novice mentoring,
5. Function as a precursor to a systematic review on the specific aspect of novice mentoring, and
6. Identify and analyse knowledge gaps in the specific aspect of novice mentoring.

Horsley (110) suggests that SSR's 'broad' approach will help map practice and gaps in knowledge in mentoring. This broad approach is particularly useful in the face of diverse understanding of mentoring and frequent conflation of approaches and practices (22). The process of reporting the finding of SSRs are guided by the PRISMA-ScR checklist (193).

Rarely, gaps identified by SSRs will see SRs carried out into these specific domains instead. Adopting Munn *et al.* (192)'s treatise, SRs in this thesis are employed to:

1. Uncover the international evidence in the specific aspect of Novice Mentoring,
2. Confirm current practice in the specific aspect of Novice Mentoring / address any variation/identify new practices,
3. Identify and inform areas for future research in the specific aspect of Novice Mentoring,

4. Identify and investigate conflicting results in the specific aspect of Novice Mentoring, and
5. Produce statements to guide decision-making in the specific aspect of Novice Mentoring.

‘Formal’ SSRs and SRs utilise Braun and Clarke (171)’s approach to thematic analysis. Again, findings of the thematic analyses are discussed online and/or at face-to-face meetings with the expert team (159). It is in Stage 1A as well that the Jigsaw Perspective is utilised to compare complementary themes and subthemes (23, 79). In doing so, the relationships between the results are elucidated to “piece together” a holistic understanding of area of interest (23, 79).

In **Stage 1B**, clarifications on the gaps identified in **Stage 1A** will then be considered in tandem with the remaining aspects of the area of mentoring of interest to reframe the research study (23, 79). If there is sufficient data to proceed, the SEBA methodology will proceed along the subsequent stages. If not the further delineation of data is required through **Stage 1A** (23, 79).

Sequential Approach: To maximise the research process, the order that the reviews are carried out to address gaps in understanding is determined by the ‘sequential approach’ within SEBA. The ‘sequential approach’ within SEBA is made possible by mentoring’s entwined nature, which suggests that various aspects of mentoring are in fact related (23, 79). Given that some aspects of mentoring are closely related than others, underlines the need for closely related elements of the mentoring process to be studied sequentially to inform the analysis of consequent studies (2). For instance,

understanding of the mentoring structure requires appreciation of the mentoring relationship whilst understanding of the mentoring dynamics is required for effective appreciation of the mentoring relationship (9). As a result, the ‘sequential approach’ within SEBA determines that study of mentoring relationships in Novice Mentoring should precede a study of the mentoring structure, given that the data from mentoring relationships will help focus the study (9).

I will also show in Section 3.1 that the sequential approach can be used to confirm the findings and/or expand understanding of particular aspects of study. Applied in this manner the sequential approach directs studies to focus on closely associated areas to fill in key gaps in knowledge in order to provide a more comprehensive perspective of the area of study (23, 79).

2.5.2.2 Stage 2 of SEBA: Split Approach

Stage 2 revolves around the analysis of articles included in the review using the Split Approach (14, 33, 185). The Split Approach sees the data accrued analysed using concurrent independent reviewers using Braun and Clarke (171)’s approach to thematic analysis and Hsieh and Shannon (172)’s approach to directed content analysis.

The Split Approach is adopted to enhance the trustworthiness of the review and involves two independent teams of at least three reviewers. The first team employs thematic analysis while the second team adopts directed content analysis. The two teams employ the following six guiding principles (92, 98, 174):

1. Principle of pragmatism: in ensuring that the focus of the review remains upon the research question,
2. Principle of pluralism: in ensuring that all themes are included in the NR,
3. Principle of historicity: in ensuring that the process can be reproducible by including in the NR descriptions of the unfolding narrative,
4. Principle of contestation: in ensuring that all ‘conflicting data’ are considered,
5. Principle of reflexivity: in ensuring that throughout the review, reviewers continually reflect individually and as a team on the emerging findings, and
6. Principle of peer review: in ensuring that emerging findings are peer reviewed through use of the split review, peer reviewed data, and that that the stakeholders agree with the data and their interpretations.

The independent reviewers in each team first compare their findings and achieve consensus on the consolidated findings of their analysis and then compare their findings with the findings of the other teams (23, 79).

2.5.2.3 Stage 3 of SEBA: Jigsaw Perspective

Stage 3 involves the comparison of complementary pieces of data from the thematic analysis and directed content analysis within a particular area of interest in mentoring to elucidate relationships between pieces of data to paint a holistic picture. Through active consultation of the expert team, reviewers sought to additionally identify

similarities and overlaps between the categories and themes to combine them like pieces of a jigsaw puzzle (23, 79).

The 'Jigsaw' Perspective is a nuanced view of Moss and Haertel (186)'s concept of having complementary perspectives from qualitative data reviewed together to give "*a richer, more nuanced understanding of a given phenomenon*" (186), page 225).

The Jigsaw Perspective relies on use of Phases 4 to 6 of France *et al.* (194)'s adaptation of Noblit *et al.* (195)'s seven phases of meta-ethnography (195-197). To begin, the themes and categories are contextualised by reviewing them against the primary codes and subcategories and/or subthemes they were drawn from (195-197). *Reciprocal translation* determines if the themes and categories can be used interchangeably. Combining areas of interests through the Jigsaw Perspective is also consistent with data that shows mentoring as an entwined process and evidence that there are aspects of the mentoring process that are more closely tied to it than others; for example, mentoring relationships and mentoring structures (2, 14). The product of the Jigsaw Perspective is the provision of themes/categories that represent enriched and combined themes and categories.

2.5.2.4 Stage 4 of SEBA: Funnelling Process

In **Stage 4**, comparisons between the themes/categories identified using the Split Approach and tabulated summaries of included articles using Wong *et al.* (173)'s RAMESES publication standards: meta-narrative reviews, Greenhalgh *et al.* (174)'s article entitled "*Diffusion of innovations in service organisations: systematic literature review and recommendations for future research*" and Greenhalgh *et al.* (92)'s article entitled "*Storylines of research in diffusion of innovation: a meta-narrative approach*

to systematic review”. Such comparisons allow for verification and triangulation of data. It also allows for new data to be considered and prevents the loss of contradictory data. As SEBA is a reiterative process overseen by the expert team, should there be a loss in data identified, the research team may return to the Jigsaw Perspective to make necessary refinements (195-197). This evidence based approach adds weight to efforts to identify, confirm and orientate complementary pieces of the jigsaw perspective in order to provide a more holistic and realistic view of the particular theme/category (195-197). The repeated review and comparisons of data also ensure a robust, transparent and accountable approach in SEBA (23, 79).

It is also of note that the Funnelling Process may reveal significant gaps in data or recognise that the narrative is incomplete. Again, due to the reiterative nature of SEBA, it is possible to return to the ‘sequential approach’ outlined in Stage 1 to make additions to be studied. It is here that a good understanding of the mentoring process and a bird’s eye view of the available data becomes important, underlining the importance of the expert team in supporting the decision-making processes employed in all stages of the SEBA (2).

Indeed, rather than simply appearing to ‘rubber stamp’ the next area of study, Stage 4 of SEBA also helps dismiss, challenge and/or adapt mentoring theories. To provide structure to the Funnelling Process, we employed Phases 3 to 5 from France *et al.* (194)’s adaptation of Noblit *et al.* (195)’s seven phases of meta-ethnography. In keeping with Phase 3 of France *et al.* (194)’s and France *et al.* (196)’s adaptation, we described the nature, main findings and conclusions of the articles. These descriptions are compared with the tabulated summaries.

Adapting Phase 5 of France *et al.* (194)'s and France *et al.* (196)'s approach, we adopted reciprocal translation to juxtapose the themes/categories identified in the Jigsaw Approach with key messages identified in the tabulated summaries. This juxtaposition of themes/categories is important given that inclusion of non-evidence based data may sometimes over-generalise issues, conflate practices and fail to consider practical, clinical and contextual considerations (195-197). The verified themes/categories from the Funnelling Process then form 'the line of argument' process in the synthesis of the discussion portion in Stage 6 of the SSR in SEBA (195-197). The product of the Funnelling Process is the provision of funnelled themes/categories which are then used to guide the narrative synthesis.

2.5.2.5 Stage 5 of SEBA: Comparing grey literature and non-evidence based data with evidence based literature

Acknowledging that data from grey literature and non-evidence based data may not be "scientifically" rigorous and yet may still influence the results, the research team carry out separate and independent thematic analysis of non-evidence based data and compare them with the themes identified from independent analysis of evidence based data in **Stage 5** of SEBA (2, 23, 81). The results of both groups will then be compared and discussed with the expert team.

This allows for the identification of incongruencies between evidence based and non-evidence based articles which highlight the influence of the latter upon the final analysis (2, 23, 81). This will also enhance the transparency of the SEBA process (2, 23, 81).

2.5.2.6 Stage 6 of SEBA: Synthesis of NR in SEBA

Stage 6 sees the synthesis of the NR in SEBA based on funnelled themes/categories which creates the spine around which the NR is created. Synthesis of the narrative review will be guided by the Best Evidence Medical Education (BEME) Collaboration guide and the STORIES (STructured appROach to the Reporting In healthcare education of Evidence Synthesis) statement (198, 199). At least two independent members of the research teams will also carry out individual appraisals of quantitative studies using the Medical Education Research Study Quality Instrument (MERSQI) and the Consolidated Criteria for Reporting Qualitative Studies (COREQ) to evaluate the quality and qualitative studies included in this review (147, 200).

To proceed to address the concerns about mentoring structure I will employ SEBA to create NRs of:

- Novice Mentoring in Internal Medicine (IM) – due to dearth of data in PM, accounts of Novice Mentoring in IM will be studied here on the basis of recent studies that have shown that it is possible to extrapolate data from IM to the PM setting (50).
- ethical issues in mentoring – given their threat to the sustainability of the PMI
- structuring of mentoring – which includes an independent and concurrent review of mentoring frameworks that serve to map the course of the mentoring process, and current accounts of the codes of practice (CoP) employed by mentoring programs (2). CoPs include codes of conduct, standards of practice, intuitional guidelines, the professional, mentoring and educational principles that guide the mentoring process, practice and the expectations, roles and

responsibilities expected of the mentees, mentors and the host organisation (stakeholders) (2)

I believe narrative reviews provide a better picture of mentoring that will address the prevailing shortfalls in our understanding of Novice Mentoring and guide the design of an evidence based mentoring structure (2). Given the critical role of the expert team and the presence of a research team that relies upon independent review of the data and consensus based decisions upon the search and analytics involved in SEBA, it would be easy to ignore my influence upon the SEBA process. This will be further addressed in the next section.

2.6 My role in the analysis of data and in the synthesis of Narrative and Systematic Scoping Reviews

Given the subjective nature of much of the data analysed, it is important to detail my interests and the solutions that I propose to overcome conflicts of interests that may arise. My primary interest is to maintain the Palliative Medicine Initiative (PMI), the Novice Mentoring program that I initiated (1, 4). As a result, addressing threats to the mentoring process is important to me as is advancing a viable approach to combat concerns about Novice Mentoring.

To ensure that these biases do not influence the manner that data is analysed, the synthesis of the narratives and the conclusions drawn, and in order to enhance the trustworthiness of the studies SEBA requires the inputs of a team of clinical, academic, research and educational experts to evaluate the findings of each stage of the SEBA.

Use of the expert team in the synthesis of SRs, SSRs and NRs are in keeping with guidance forwarded by the Joanna Briggs Institute reviewer's manual (201), the Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) (93), the Cochrane handbook for systematic reviews of interventions (126) and the Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement (202). I adopted the spirit of this guidance forwarded for SRs in all reviews to increase their trustworthiness. These experts include Dr Stephen Mason who is my co-supervisor, Annelissa Chin the senior librarian at the NUS Medical Library, Dr Ravindran Kanesharan from the National Cancer Centre Singapore (NCCS) who was my mentee when he was a registrar and continues to participate in the PMI now that he is a specialist in Geriatric Oncology and deputy head of the Medical Oncology department at NCCS, and Dr Limin Wijaya who is a specialist in Infectious Diseases at the Singapore General Hospital and an associate dean at Duke-NUS. These experts were involved in most of the studies included in this thesis. Supplementing their input were several other physicians who participated in some of the studies.

To underline my role in these reviews, I believe it is important to point out that the only senior clinicians and academics in the authorship of these papers, aside from Dr Stephen Mason and Prof Scott Compton, who are two of my co-supervisors for this thesis, were my mentees Dr Toh Ying Pin, who was a resident in Family Medicine. Drs Tan Ying Peh and Shirlyn Huishan Neo, who featured in one paper, were colleagues at the NCCS. The rest of the authors were medical students who were part of the PMI program (some have since graduated). To further underline my role in these

publications, none of these authors had published on mentoring prior to these publications or have published on the subject since.

In addition, to attenuate my influence/bias and enhance the trustworthiness of the analysis, the NRs that make up each chapter of this thesis have either been published or scheduled to be published in peer reviewed journals. Use of published material in peer reviewed journals further enhances the trustworthiness of the studies. This thesis is based on 16 reviews and studies that I oversaw either as the first author or as the senior and last author of a PMI project (the abstracts of these articles are included in Appendix 1).

2.7 Employ of SEBA in mentoring research

Overall, I believe that SEBA addresses many of the issues listed in Section 1 of this chapter (Chapter 2.2). SEBA's employ of an expert team to guide and oversee the research team provides oversight and transparency to the research process. Inclusion of librarians in the expert team helps circumnavigate the obstacles posed by poor understanding of key mentoring terms and the conflation of practices and approaches. Use of the Split Approach (14, 33, 185) also allows different views of the specific aspect of mentoring to be analysed. Use of content analysis also adds to the trustworthiness of the thematic analysis.

In the coming chapter, I will employ SEBA to study Novice Mentoring in Internal Medicine (IM), ethical issues in mentoring in surgery and medicine amongst medical

students and physicians and the study of Codes of Practice and mentoring frameworks that serve to road map the mentoring process.

2.8 Conclusion

In this chapter, which is in effect the methodology chapter of this thesis, I have proffered evidence and rationale for the need of the SEBA methodology (2, 23, 79-83). In keeping with the overall goal of this thesis which is to forward an evidence base for the study of mentoring, I highlight SEBA as a coadunation of the primary strengths of each of the three SR, SSR and NR processes available. This approach serves several purposes. One, it builds on tried and tested methodologies. Two, many aspects of the SEBA methodology are known to current researchers, thus enhancing its future adoption and ensuring that present researchers can take on a role within the expert team whenever needed with little additional training. Three, awareness of the deficits of prevailing methodologies ensures that the SEBA methodology can address them effectively and circumvent some of the pitfalls associated with these approaches.

I will employ the SEBA methodology in Chapter 3 which is the results section of the thesis, the results presented in the various section will take the form of SSRs and NRs in SEBA. I will discuss the impact of these results in Chapter 4.

Chapter 3. Results: NRs in SEBA on Novice Mentoring and Ethical Issues; SSRs in SEBA on Mentoring Structures

Chapter Overview

In Chapter 1, I highlighted the desire to safeguard the Palliative Medicine Initiative's (PMI) Novice Mentoring guided research program amid increased scrutiny as a result of concerns over ethical issues in mentoring (1, 4). To address these issues in a systematic, structured manner, I have sought to delineate prevailing knowledge of the evolving concept of Novice Mentoring and characterise current ethical issues in mentoring through use of the SEBA methodology I set out in Chapter 2.

Adopting my definition of Novice Mentoring drawn from my recent reviews of Novice Mentoring in the PMI set out in Section 1.2 (Chapter 2.4), and guided by the sequential aspect of the SEBA approach that seeks to delve into areas of interest to provide a more holistic picture of the area of study, I will carry out two Narrative Reviews in SEBA (NR in SEBA) and two Systematic Scoping Reviews in SEBA (SSRs in SEBA) to study regnant accounts of Novice Mentoring, delineate a better understanding of ethical issues in mentoring and evaluate potential sources of ethical issues in mentoring and evaluate prevailing concepts of the mentoring structure that guide the Novice Mentoring process (Figure 3.1).

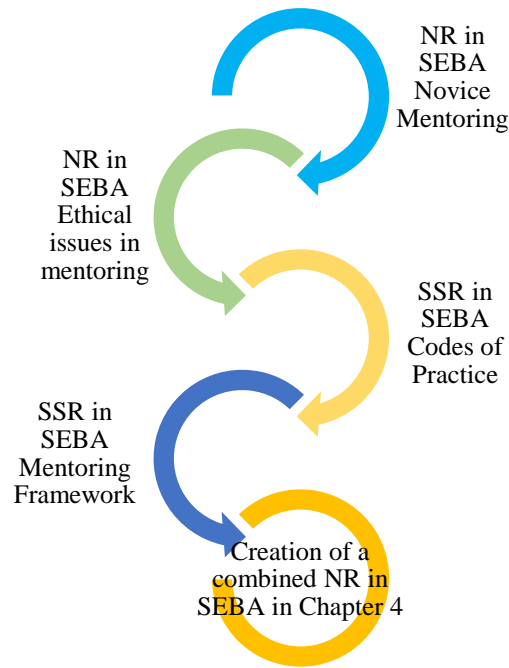


Figure 3.1: The course of the sequential evidence based approach in studying of mentoring in IM

To be clear, SSRs in SEBA rather than NRs in SEBA are used to study the aspects of mentoring structure in keeping with Stage 1A (Chapter 2.5.2.1) of the SEBA methodology. Whilst it is customary for the data from the SSRs in SEBA to be combined together to inform the creation of the NR in SEBA, I will not do so on this occasion as the new NR in SEBA would then be combined with the NR in SEBA in Sections 3.1 and 3.2. This will save time and avoid repetition of data.

Each NR in SEBA in Sections 3.1 and 3.2 and the two SSRs in SEBA in Section 3.3 will be prefaced by brief summaries of their specific aims and outlines and will also include accounts of the essential aspects of the research methodology to ensure the approach, findings, analysis and conclusions are transparent, reproducible, systematic

and structured. This approach is consistent with the goal of producing an evidence based approach to influence thinking on the study of Novice Mentoring, shape practice and structuring of the mentoring process and ensure effective oversight of the mentoring approach, process and program (2).

- **Section 3.1 NR in SEBA on Novice Mentoring in Internal Medicine**

This NR in SEBA of Novice Mentoring in Internal Medicine (IM) seeks to advance a comprehensive understanding of the practice of Novice Mentoring and to better frame discussions about the problems facing Novice Mentoring (50).

- **Section 3.2 – NR in SEBA of ethical issues in Mentoring in Internal Medicine and Surgery**

Amidst recent publications on bullying, discrimination, breaches in professional boundaries, misappropriation of mentee's work and even accounts of physical and verbal abuse in mentoring that have caused consternations over mentoring's role in clinical practice, it is evident better understanding of these concerns are required (21-23). To do so, this NR in SEBA in Section 3.2 builds upon the newly minted definition and better appreciation of the Novice Mentoring process delineated in Section 3.1 to focus on elements of Novice Mentoring practice that predispose to ethical issues in mentoring (45, 78, 203). To this end, this NR in SEBA of ethical issues in mentoring will focus upon mentoring practices in medicine and surgery to examine the nature of current reports of bullying, discrimination, breaches in professional boundaries, misappropriation of mentee's work and even accounts of physical and verbal abuse and scrutinise the possible causes of these ethical issues in mentoring (23).

Appreciation of this broad and often poorly described group of issues that relate to breaches in the standards of mentoring, professional and clinical practice and or noncompliance with current concepts of ethical, practice, mentoring and education standards and approaches (46, 47, 60) will guide efforts to address these problems.

- **Section 3.3 – SSR in SEBA on Mentoring Structures**

With the mentoring structure identified as the primary source of ethical issues in mentoring (14), Section 3.3 involves closer scrutiny of the key elements of the mentoring structure (86, 129, 134). As such, I will carry out a SSR in SEBA of the two keys elements of the mentoring structures which are Codes of Practices (CoP)s and the mentoring framework (2).

Here I will employ the SEBA's sequential approach which sees the first SSR on CoPs lay the foundation and aid understanding for the second SSR in SEBA on mentoring frameworks (86, 129, 134).

3.1 Section 3.1: NR in SEBA on Novice Mentoring in Internal Medicine

With an initial scoping review suggesting limited Novice Mentoring data in Palliative Medicine (PM), I carried out a *sequential approach* via a secondary/follow up study of the closely related practice of Novice Mentoring in Internal Medicine (IM) (66-68), employing the definition of Novice Mentoring set out in Section 1.2 (Chapter 2.4).

3.1.1 Studying Novice Mentoring

Adopting the SEBA methodology and guided by my research question, “**what is known of Novice Mentoring in Internal Medicine?**” and further research question which is “**what are the key characteristics of Novice Mentoring in IM, and what processes underpin its success?**”, this NR in SEBA adopted a PICOS format (highlighted in Table 3.1) (132, 204).

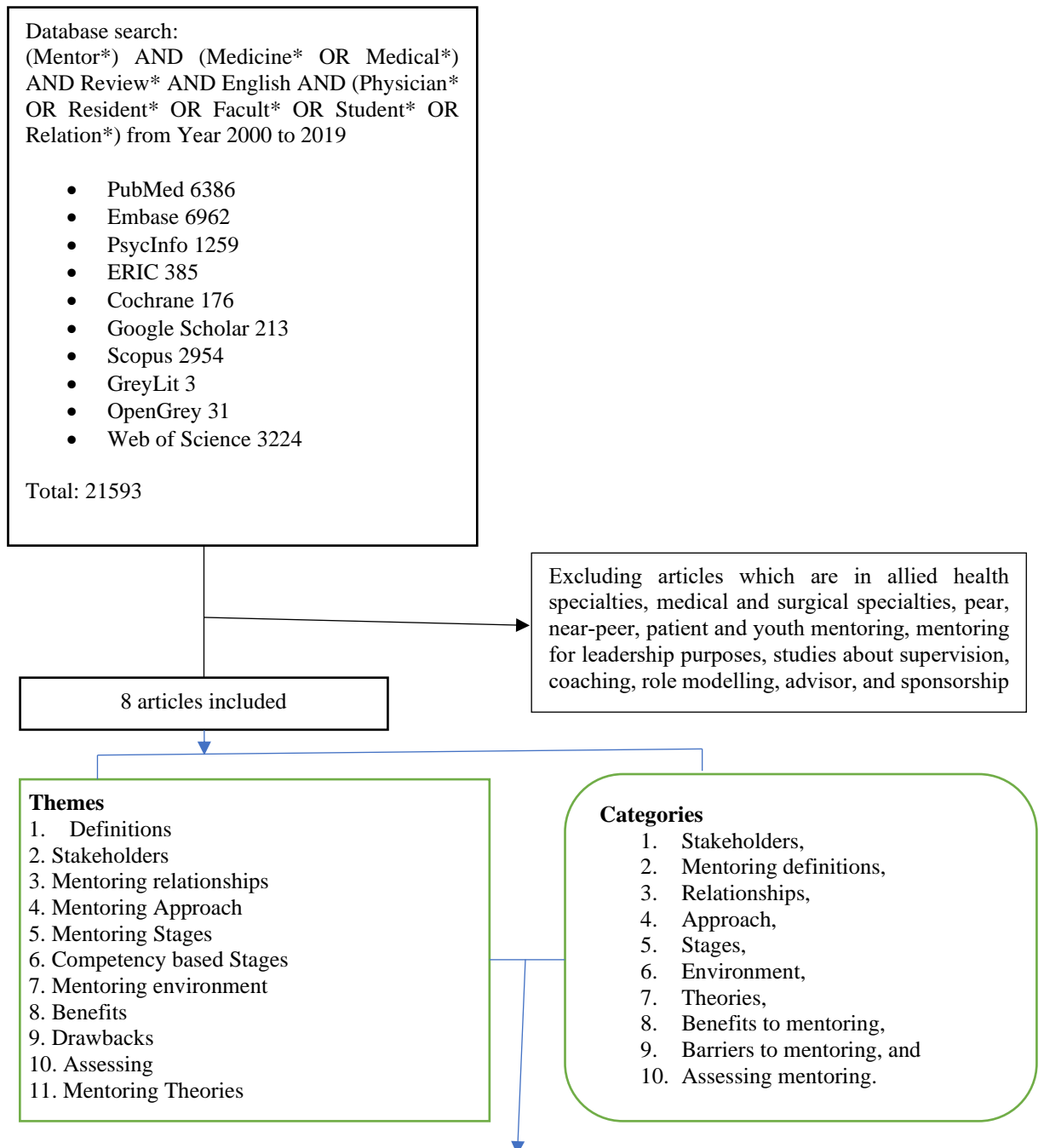
Table 3.1: PICOS, inclusion and exclusion criteria

PICOS	Inclusion Criteria	Exclusion Criteria
Population	<ul style="list-style-type: none"> • Junior physicians, residents, and medical students in IM specialties delineated by the American College of Physicians including Allergy and Immunology, Clinical Medicine, Community Medicine, Dermatology, General Practice, Geriatrics, Hospital Medicine, Neurology, Palliative Medicine, Cardiology, Endocrinology, Gastroenterology, Haematology, Immunology, Infectious Disease, Nephrology, Respiratory Medicine, and Rheumatology 	<ul style="list-style-type: none"> • Clinical specialties not associated with medicine such as surgical specialties, Paediatrics, Emergency Medicine, Obstetrics and Gynaecology, and Clinical and Translational Science
Intervention	<ul style="list-style-type: none"> • Systematic review and/or scoping reviews or systematic scoping reviews or narrative reviews of Novice Mentoring involving junior physicians, residents and/or medical students mentored by senior clinicians, aimed at advancing the professional and/or personal development of the mentee <ul style="list-style-type: none"> ○ Mentoring processes ○ Mentor factors ○ Mentee factors ○ Mentoring relationship ○ Host organisation ○ Outcomes of mentoring ○ Barriers to mentoring 	<ul style="list-style-type: none"> • Peer mentoring, mentoring for leadership, mentoring patients or mentoring by patients, interdisciplinary mentoring • Supervision, coaching, role-modelling, advising, and sponsorship

	<ul style="list-style-type: none"> ○ Mentoring structure ○ Mentoring framework ○ Mentoring culture ○ Mentoring environment 	
Comparison	<ul style="list-style-type: none"> ● Comparisons accounts of mentoring between mentoring programs, editorials and perspective, reflective, narratives and opinions pieces 	
Outcome	<ul style="list-style-type: none"> ● Personal outcomes of mentoring ● Professional development outcomes ● Career related outcomes ● Research and academia outcomes 	<ul style="list-style-type: none"> ● Studies where mentoring outcomes were not the main component evaluated
Study design	<ul style="list-style-type: none"> ● Systematic review, literature reviews, and narrative reviews ● All study designs are included <ul style="list-style-type: none"> ○ Descriptive papers ○ Qualitative, quantitative, and mixed study methods <p>Perspectives, opinion, commentary pieces, and editorials</p>	

A total of 18915 titles and abstracts were reviewed. From the 18,915 articles, 29 full text articles were evaluated, and 7 thematic reviews and 1 narrative review were included as shown in the SEBA adapted PRISMA Flow Chart in

Figure 3.2.



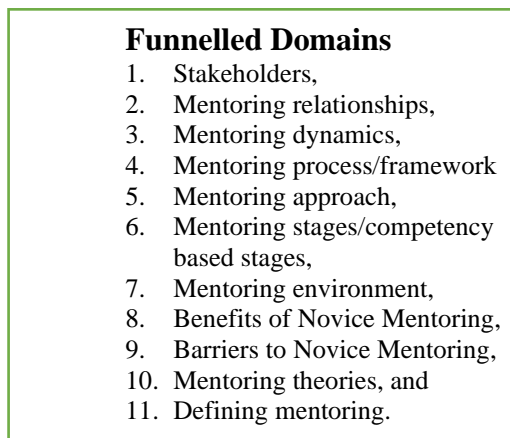


Figure 3.2: SEBA adapted PRISMA Flow chart for Novice Mentoring in IM

3.1.2 Synthesis of the NR in SEBA

To be clear, all eight articles reviewed here are PMI-led reviews and studies that I oversaw.

3.1.2.1 Stakeholders

Acknowledging their critical importance recent studies have highlighted a list of characteristics desired of each stakeholder (18). Whilst these lists have been traditionally used in the recruitment and matching of mentors and mentees, there is also evidence to suggest that they can be used to focus support and to personalise the structuring of the mentoring process (17, 18). Given that in most cases these characteristics are not explained and merely listed, I have curated a list of the desired features for ease of reference.

3.1.2.1.1.1 *Desired Characteristics of a Mentee*

The most studied stakeholder is the mentee, given increasing acknowledgment that the mentee’s personal and professional characteristics and their psychosocial, clinical, research, administrative, work circumstances and settings influence the mentoring relationship, approach, process and environment (6, 15, 16). Sng *et al.* (6) noted that both medical students and junior residents believed that ‘effective’ mentees showed initiative to drive the mentoring relationship (125), demonstrated responsibility and ownership of the mentoring process (125), were open-minded (205), and respectful of the mentor’s time and input (205).

Interestingly there was little by way of data on the mentor’s nor the host organisation’s concept of an effective mentee. A compilation of the characteristics desired of mentees detailed in the recent reviews are compiled in Table 3.2.

Table 3.2: Desirable Characteristics of Mentees

Personal Characteristics	Refs	Professional Characteristics	Refs
Interest in Learning <ul style="list-style-type: none"> • Teachable spirit • Self-aware • Committed • Motivated to learn • Responsible • Open-minded • Reflective Virtues <ul style="list-style-type: none"> • Flexible • Humble • Appreciative • Honest • Reliable • Respectful 	(5, 6, 16)	On Self-Improvement <ul style="list-style-type: none"> • Willing to discuss flaws • Ask for advice • Accept criticism • Learn from their mistakes • Open to change • Passionate about succeeding On Work Ethic <ul style="list-style-type: none"> • Shows initiative • Exhibits ownership • Proactive in cultivating relationships with mentors • Settling meeting agendas • Meeting deadlines • Made aware of codes of conduct and the mentoring framework 	(6, 16, 17)

		Professionalism <ul style="list-style-type: none"> • Professional • Ethical 	
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3.1.2.1.1.2 *Desired Characteristics of Mentors*

Though central to mentoring success the mentor's role in the mentoring process is rarely acknowledged (6). Sng *et al.* (6) found that only five papers of the 49 included articles discussed the desired characteristics of mentors. More recent accounts however see the mentor not only influencing the mentoring relationship but the mentoring approach, the recruitment, matching, and assessment processes underlining fresh impetus to better understand the roles and characteristics of successful mentors (6, 48, 77). From the available data, the desired characteristics of the mentor are often listed and not expanded upon in most accounts. They are also not ranked according to importance or on their impact upon the mentoring relationship nor mentoring environment. This may in part be due to the diverse roles they play in different settings at different stages of the mentoring process. It may also be that mentees prioritise different characteristics within their mentors. For example, in interviews with 21 junior resident faculty at the University of Calgary and the University of Alberta, Straus *et al.* (125) found that successful mentors were those were seen to be committed to mentoring (125, 205). Straus and Sackett (206) reported that effective mentors were also altruistic, had the interests of their mentees at heart and acknowledged their mentees' contribution. In their study of Internal Medicine residents at medical centres affiliated with Harvard Medical School, Ramanan *et al.* (207) found that the desirable traits of a mentor included provision of emotional, professional and research support. Other desirable traits included being good communicators (125, 205) and being able to provide insightful appraisals, constructive criticism and tailored feedback (125).

Junior residents also valued their mentor’s professional experience and network connections (205). In contrast, Hauer *et al.* (208) found that medical students at the University of California placed a premium on a mentor’s trustworthiness, approachability, friendship and their ability to ‘connect’ with them (208). These traits were believed to enhance the mentor’s position as a role model (208).

With the desired characteristics of the mentor not described in detail in the included articles, I have compiled them in Table 3.3.

Table 3.3: Desirable Characteristics of Mentors

Personal Characteristics	Refs	Professional Characteristics	Refs
Connecting with Mentees <ul style="list-style-type: none"> • Empathetic • Approachable • Able to connect • Collegial • Friendly • Open • Culturally sensitive • Personal • Available • Non-judgemental listening 	(5, 6, 16, 38)	General Professional Characteristics <ul style="list-style-type: none"> • Knowledgeable • Accomplished • Respected • Influential • Authorities in their field • Thought Leaders • Significant Academic Experience • Good communication skills • Good research skills 	(5, 6, 16, 17, 38)
Virtues <ul style="list-style-type: none"> • Trustworthy • Honest • Motivated • Committed • Compassionate • Self-aware • Mature • Altruistic • Reliable • Sincere • Trustworthy • Understanding 		Specific to Being a Mentor <ul style="list-style-type: none"> • Secure in his position • Responsive to evolving needs of their mentees • Believes in his mentee’s abilities • Brings out the best in his/her mentee • Genuinely interested and passionate about developing their mentee • Allows his/her mentee to reach full potential • Allow his/her mentee to be challenged • Able to rejoice in his mentee’s success 	

<ul style="list-style-type: none"> • Responsive • Patient • Respectful • Motivator • Positive Attitude 		<ul style="list-style-type: none"> • Does not feel threatened or vying with mentee for credit • Does not push for own agenda • Actively seeking out mentees to evaluate their progress • Morally and emotionally, supports mentee • Have best interests of mentee at heart • Derives joy in educating • Not authoritative • Acknowledges mentees' contributions • Nurtures mentees • 'Proactive' in addressing any potential stressors • 'Protect' them from adverse influences or harsh interactions • Provide regular, constructive, appropriate, timely and objective feedback • Cultivates emotional safety • Proven Mentoring Track records • More able to provide guidance and professional and research support to mentees • Advocate for mentees • Provide mentees with opportunities to network • Made aware of codes of conduct and the mentoring framework • Being generous in their commitment of time and energy • Provides career advice • Role model • Act as sponsors 	
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Perhaps the most consistent feature desired of mentors is their ability to meet their mentoring roles.

3.1.2.1.1.3 *Role of a Mentor*

Most reviews reported that successful mentors carried out a number of key roles (3). Krishna *et al.* (4) found that importance of each of these roles varied throughout the mentoring process and according to the mentoring needs. Krishna *et al.* (3) posit that the mentor's changing roles are adaptive and seek to attend to the evolving needs of mentees and their mentoring relationships as they move through the various stages of

the mentoring process and changing mentoring conditions. To achieve this goal and nurture trusting relationships, it is crucial that they support the needs of the mentee in a personalised, appropriate, specific, timely, holistic, accessible and longitudinal manner (5, 38), guide the mentee's professional development (5, 38) and advocate for the mentee's interests' (5). My recent reviews suggest that mentors in Novice Mentoring take on a variety of roles and sometimes combine these roles to achieve their goals (3). These include 'traditionally understood' concepts of supervision, coaching and role modelling which are employed on different occasions as they meet their different roles and responsibilities (3, 4). I found that mentors in programs employing combinations of novice, near peer and e-mentoring programs play more supportive, training and counselling roles to the near peer mentors whilst Chong *et al.* (32) found that mentoring in e-mentoring saw mentors play more supervisory and career advising roles for mentees. Other recent reviews found that mentoring in clinical settings varied from that seen in mentoring in the research setting (43), reflecting Ramanan *et al.* (207) and Hauer *et al.* (208) findings. This may also explain the rationale for different preferences for the mentor's characteristics in undergraduate and postgraduate settings.

More recently the role of the mentor as an assessor has come to the fore (33). Whilst assessment is not often discussed, it is inferred in many recent reviews and studies (4). Unpacking this data, the mentor's role as an assessor is critical to the overall success of the mentoring process (33). This is particularly evident in the matching process, where the mentor's ability to evaluate the mentee's abilities, working styles, preferences, timelines, availabilities, needs, motivations, experience, skills and goals

allow the mentor to fashion a personalised mentoring process and a ‘fit for purpose’ matching process (18) and mentoring relationship (6, 15, 16). Here it is the mentor’s ability to determine the best approach and adaptations to the mentoring approach in changing conditions and work with the host organisation to enact the appropriate changes is critical to the overall success of the mentoring relationship and process (4, 9, 199, 209). I will discuss the impact of these and the mentor’s other roles upon the mentoring process and environment.

3.1.2.1.1.4 *Impact of the Mentor on Mentoring*

Recent reviews suggest that the mentor’s selection of the roles to play, the responsibilities to prioritise, the type of support provided to the mentee depends upon their ability to evaluate the mentee and their progress, highlighting their role in continuous assessments of the mentee and the mentoring relationship (4, 9, 199, 209) through the various stages of the mentoring process, changing mentoring settings, needs and goals (6, 15, 16). It also underlines the growing recognition of the importance of the mentor’s skills, knowledge, abilities, availabilities, motivations and personal attributes shape interactions with the mentee (15).

Aside from effective training, ensuring that the mentor has a positive influence upon the mentoring process and relationship are the presence of a variety of mentoring tools, competency based stages and milestones set out by the common and personalised competencies associated with each stage (4, 9, 199, 209). These competencies, as I will discuss later, will help mentors determine if mentees are progressing appropriately along their milestones at each mentoring stage and over the course of the mentoring

process. These considerations underline the impact of the mentor's ability upon the mentoring approach, the support provided, and the mentoring environment (6, 15, 16).

Perhaps less acknowledged is the impact that the mentor has on the matching process (18) and host organisation (15) respectively, where in the absence of consistent assessment programs and strategies, progress along the mentoring process hinges upon the mentor's assessments, feedback, and provision of longitudinal support (9). The mentor also considers the wider effects of these changes upon the mentoring culture as well as the prospective effects upon the outcome of the mentoring process, the potential for breaches in the CoPs and the mentoring program's reputation.

The mentor also directly influences the program whilst acting on the behalf of the host organisation on day to day matters, impacting the approach and structuring and even recruitment and training of mentors and mentees alike (19). These considerations are consistent with the reported impact of the mentor in mentoring in nursing, medical social work, physiotherapy and occupational therapy (5, 34-36) are similar to that reported in PM, IM and general practice (10, 11, 16).

Given the impact mentors have upon the mentoring relationship, it comes as no surprise that Cheong *et al.* (22) and Lee *et al.* (21) found that the conduct of mentors was a significant source of ethical issues in mentoring. Singh *et al.* (78), Soklaridis *et al.* (45) and Byerley (46) suggest that poor conduct by mentors is responsible for significant psychological and emotional distress. A number of authors have linked discrimination and bullying on the part of the mentor, the presence of toxic mentoring environments and failed mentoring relationships and incomplete mentoring projects to poor mentoring skills and unprofessional conduct on the part of the mentor as well

(45-48, 60, 67, 71, 72, 78, 203, 210-217). Tasked with overseeing the mentor's conduct and progress is the host organisation, underlining just one of the many critical roles it plays.

3.1.2.1.1.5 *The Host Organisation*

Often neglected but nonetheless a pivotal member of the mentoring relationship is the host organisation (19). Till recently, the host organisation has not been formally defined, hinting at their relatively poorly acknowledged role in the mentoring relationship and the mentoring program (16). Chia *et al.* (19)'s recent PMI-led review of the role of the host organisation in mentoring concluded that it is possible to characterise host organisations by the roles that they play. These researchers suggest that the host organisation as a *“team of educators and administrators with common values, goals and views on education and clearly delineated roles and responsibilities who collaborate through coordinated lines of communication, assessment, and reporting in order to realize their “defining” and secondary roles.”* (19), page 5)

The defining roles of the host include:

- *“Establishing and/or complying with overarching goals, clinical standards, and curriculum requirements,*
- *Designing, influencing, and overseeing the mentoring program,*
- *Establishing the mentoring approach,*
- *Designing and establishing balance between flexibility and consistency within the mentoring structure,*

- *Nurturing and overseeing the program and supporting the mentoring environment, and*
- *Nurturing the mentoring culture and mentoring relationships” (19), page 3)*

The secondary roles of the host organisation adapted from Chia, Tay (64)’s original submission is listed in Table 3.4 for ease of review.

Table 3.4: Roles of the Host Organisation

‘Defining roles’	Secondary roles
<ol style="list-style-type: none"> 1. Establishing and/or complying with overarching goals and approaches of the curriculum 2. Designing, supporting and overseeing the mentoring program 3. Nurturing personalised mentoring relationships <ol style="list-style-type: none"> a. Accounting for the mentor’s and mentee’s goals and interests b. Personalities c. Identify the mentee’s preferences on how they would like to initiate mentoring relationships and the mentee’s preferences on the gender, background and ethnicity of the mentor 4. Developing and supporting the mentoring environment and culture. 	<ol style="list-style-type: none"> 1. Setting out the structure of the mentoring process or mentoring framework 2. Employ adaptable and longitudinal evaluations of the mentoring process. 3. Organises the framework which includes <ol style="list-style-type: none"> a. An organised orientation and skills training for mentees b. Mentor recruitment c. Mentor training d. Preparation of the mentee for the matching and mentoring process e. Determining the mentoring and education philosophy the mentoring approach, goals and values of the program, f. Ensure that roles and responsibilities are clearly articulated to would-be mentees and mentors which helps align expectations 4. Ensure flexibility within the framework to facilitate personalisation of the mentoring process 5. House the mentoring program within the formal curriculum 6. Helps support the recruitment and retention of mentors through financial remuneration academic promotion, formal recognition, access to facilities and resources, research funding and protected time 7. Instils flexibility in the matching process, the pre-mentoring meetings and the mentoring approach

Chia *et al.* (19) also delineated the characteristics of effective hosts which is to provide consistent leadership and being proactive in recruitment as well as supporting the mentoring relationships and curriculum. By spearheading the program, the host organisation operationalises the mentoring approach and its structure.

The host organisation plays a critical role in ensuring consistency (218) yet flexibility (6, 16, 66, 68, 199, 219-240) within the mentoring program (6, 16, 17, 125, 199, 221, 223-225, 227-232, 234, 237, 241-254). Whilst a consistent and transparent program (19) imbues confidence in the mentoring relationship, the host organisation must facilitate flexibility within the mentoring program to boost mentee's and mentor's sense of autonomy, connectivity and advocacy of the program (208). This is made possible through flexible accommodations to each stakeholder's particular setting, goals, needs and capabilities. Indeed, flexibility is called for to accommodate to mentoring's nature. However, to prevent lapses in standards of practice and breaches in codes of conduct the host must establish and comply with the CoPs and mentoring framework it sets out.

Unsurprisingly, the host organisation plays a key role in assessments. It establishes mentee and mentor roles, responsibilities and expectations (235, 236, 255), practice standards and codes of conduct (6, 16, 220, 223, 228, 229, 256), and the milestones of each mentoring stage (238, 248). Albeit under the aegis of the mentoring program as a whole, guidelines established by the host guide mentees and mentors setting their specific goals (5, 6, 16, 68, 229, 248, 257, 258), objectives (6, 125, 240, 248, 249, 257) and timelines.

Consistency is also critical to ensuring fairness and a common mentoring experience for all. It also supports effective communication, a steady mentoring philosophy, approach, and culture. This consistency allows the building of the program's reputation and track record, facilitates recruitment and retention of mentors and allows a basis for structuring support, protected time, remuneration and promotions of mentors (19). It also allows access to resources, grant application and research funding.

Aside from nurturing the mentoring stages, perhaps one of the other key roles of the host organisation is ensuring the training of mentors and mentees. Sheri *et al.* (20) and Chia *et al.* (19) report that the host determines the content, format, nature and duration of the mentor training programs. Chia *et al.* (19) note that the host helps shape expectations and ensures that mentees and mentors know what to expect in the mentoring program. Mentor and mentee training programs help mentees and mentors understand the importance of investing and sustaining the mentoring relationships (5, 10) and underscores the value of effective communications and negotiation and collaborative skills in the mentoring process (20). Training helps the stakeholders develop an understanding of the stages of the mentoring process which include the recruitment process, the matching process, the pre-mentoring or initiation stage, the mentoring approach adopted, the developments throughout the mentoring relationship and in the assessments used in the program (1, 20). It also highlights sources of support for mentees and mentors (1, 20).

Training helps set expectations on the type, nature, frequency and importance of communication between stakeholders (20). It establishes the basic code of conduct, standards of practice, re-emphasises professional and educational practice guidelines

and standards and the overall roles and responsibilities of each stakeholder (1, 23). Training also allows the host to establish its role in the mentoring relationship and to assess the progress and suitability of would-be mentees and mentors (19). In the training process mentees and mentors are made aware of the role of the host and begin to see the host as a fellow stakeholder in their mentoring relationship who can help support them, their mentoring relationships and their overall goals (19).

3.1.2.2 **Mentoring Relationship**

An awareness of the features of the various stakeholders helps in the nurturing of effective mentoring interactions, mentoring dynamics and the creation of ‘fit for purpose’ mentoring relationships (i.e. relationships built and supported to achieve specific mentoring goals) (4) as well as recognising Novice Mentoring as a sociocultural construct (2). At the heart of the mentoring relationship is a trusting, personalised and enduring mentoring relationship between the stakeholders (6). A trusting relationship is key to maintaining the stakeholder’s motivation to sustain and invest in the mentoring process (2, 6). It also facilitates frank discussions and personal discourse that allow for the provision of prompt, accessible, individualised, necessary, continuing, and comprehensive support and feedback which strengthens the mentoring ties (2, 6). A trusting mentoring relationship gives rise to enduring mentoring relationships that sustain themselves over time through the mentoring stages and amidst external influences (1, 2). In turn, an enduring mentoring relationship shapes the mentee’s professional identity formation, making it especially important to program designers interested in employing mentoring in the clinical setting (15). Supporting the developing relationship is the mentoring structure and the ability of the mentoring relationship to adapt and evolve.

Here, I will discuss the nature of the mentoring relationship. Mentoring’s nature is pivotal to enhancing the quality of mentoring interactions (i.e., mentoring dynamics).

The nature of successful mentoring relationships is described in Table 3.5.

Table 3.5: The Nature of successful mentoring relationships

Elements of the Nature of Mentoring	Elaboration	References
Context-specific	<p>Mentoring differs in clinical, research and academic settings. This has been attributed to the culture, environment and practice that influence the course of the mentoring process. Practical issues, time limitations and communication opportunities all impact the mentoring process</p> <p>There are further differences in the undergraduate and postgraduate settings</p>	<p>(16) (5, 16, 38)</p>
Goal-sensitive	<p>Different goals result in different processes and outcomes. For example, in medical schools – the goals may be on preparing students for clinical practice and develop skills. Whereas in clinical practice the goals may be focused upon motivating trainees to select a specific residency program and or hone their skills</p> <p>The presence of different goals amongst stakeholders may lead to unique combinations of mentoring approaches, requirements, structures and mentoring relationships</p> <p>The mentoring relationship results in shifts in short-term objectives to achieve long-term goals. It is also of note that long term goals may also evolve with time</p> <p>These shifts illustrate how mentoring concerns itself with reaching goals set by mentees, mentors and the host organisation</p>	<p>(6, 16) (5, 16, 38) (6, 16) (5) (16)</p>

Mentoring stages	<p>Mentoring processes have consistent stages including recruitment, training, matching, alignment of expectations and the pre-mentoring meeting, and the mentoring relationship</p> <p>Each stage has specific goals to be met</p>	(1)
Competency based stages	<p>Each mentoring stage has specific competencies to be achieved before the mentee can progress to the next stage</p> <p>The presence of specific competencies underlines the need for longitudinal and holistic assessments and personalised, appropriate, specific, timely, holistic, accessible and multisource feedback</p>	(1)
Evolving	<p>Mentoring is subject to changes in internal, stakeholder dependent factors and external influences</p> <p>In addition to evolving goals, mentors and mentees need to “respond appropriately depending upon their situation, ability and motivations” as well as to “challenges and opportunities”.</p>	(16) (16)
Stakeholder-dependent	<p>Mentoring needs to meet mentees’ personal circumstances. This is further supported by evidence that mentoring differs in the undergraduate and the postgraduate setting.</p> <p>The mentor’s ability to support the mentee and build an effective mentoring relationship influences the mentoring experience.</p> <p>This is further evidenced by the different roles that mentors play in different mentoring settings and different stages of mentoring.</p>	(16) (16) (5, 6, 16)
Approach-dependent	<p>The mentoring process differs with variations in aspects of the process, be it initiation in the mentoring process, training, matching, oversight by the host organisation and the frequency and quality of interactions as well as differences in mentor-mentee ratios.</p>	(6, 16, 17, 38)
Relational-dependent	<p>Mentoring processes “pivot on how mentor and mentee interact in different settings over time and in the face of different pressures and goals”, and “appears to be a function of [their] compatibility”.</p> <p>This highlights the notion of mentoring dynamics or the quality of mentoring interactions</p>	(16)

	<p>A more robust and stronger relationship can withstand and adapt to difficulties faced. The relationship can be strengthened as mentors and mentees are reciprocally empowered with skills, knowledge and confidence.</p> <p>For this to occur, mentors and mentees must “[remain] motivated and invested in the shared goals of the mentoring process”.</p> <p>The host organisation also has a role to play in facilitating the strengthening of the mentoring relationship.</p>	<p>(16)</p> <p>(6)</p> <p>(6)</p>
Environment-dependent	Guidelines, such as those set by the host organisation, influence how mentoring is carried out by mentors and mentees.	(6)
Program-dependent	<p>Oversight of the programme such as through the matching process or mentee-mentor interactions, and support rendered also affects how mentoring is carried out.</p> <p>In addition, the specific culture, support and structure of the particular mentoring program affects the mentoring relationships</p>	(6, 16)
Entwined	<p>As mentioned, mentoring is dependent on the factors listed above. Change in any part of the mentoring relationship mentoring structure, and or environment will affect the stakeholders, their relationships and all aspects of the mentoring process.</p> <p>Some mentoring programs have failed as a result of neglecting these factors.</p>	(6, 16)

Each of these features bear some consideration. To begin, mentoring’s stakeholder dependent nature highlights the impact of each stakeholder’s personal, professional, academic, research, familial, psychosocial and clinical situations and particular values, beliefs, principles, goals, roles, responsibilities, availabilities, motivations, skills and experience upon the manner that stakeholders interact with one another (6, 17, 37). These features also reveal mentoring’s relational dependent nature with stakeholders enjoying reciprocal relationships with one another (6, 17, 37). The fact that mentoring

exhibits relational dependent features and is shaped by each stakeholders personal, professional, academic, research, familial, psychosocial and clinical situations also reaffirm the notion that mentoring is a sociocultural construct (2). Mentoring's relational- and stakeholder-dependent nature also underlines the importance of the quality of mentoring relationships.

To contend with the changing circumstances mentoring relationships must adapt (32, 57) and show an environmental, context and setting dependent nature (5, 6, 20). In so doing, mentoring reveals its reliance upon several critical considerations. Perhaps the most relevant is the mentoring framework which determines the mentoring approach. The mentoring framework is guided by the mentor and the host organisation who must ascertain its likelihood of achieving mentoring success, establish if the proposed adaptations will be better than the current approach, gauge the ability of the proposed adaptation to the mentoring approach to achieve effective balance between consistency and personalisation of the mentoring process, estimate if this adaptation to the mentoring approach will lead to breaches in the CoPs and judge if the proposed approach is sustainable (21-23). Here estimations of success of the mentoring process are informed by the goals of the mentoring program, its setting and the mentoring approach employed; underlining mentoring's goal sensitive, context, and program dependent nature (2, 17, 18). Overall, these considerations underline the mentor-, host organisation- and mentoring approach-dependent nature of the mentoring relationship. These considerations introduce the concept of *mentoring dynamics*.

3.1.2.2.1 *Mentoring Dynamics*

The concept of mentoring dynamics highlights the ‘relational-sensitive’ facet of mentoring’s nature and spotlights the processes influencing these interactions and the impact of the mentoring environment (6, 16, 37). Building upon data from my prospective studies and reviews, I posit that mentoring dynamics pivots on the mentoring approach, the mentoring framework, the mentoring structure and the stakeholders. Whilst I have discussed the mentoring approach, framework and environment, it is useful to consider different perspectives to the mentoring structure and to the stakeholders involved and consider the three stages to mentoring dynamics. I discuss each of these insights in turn.

3.1.2.2.1.1 *A structured program*

A structured program facilitates effective training, assessment and guidance of the program, though missing thus far is delineation of the impact of an organised program on the motivation of mentees and mentors (2). Being part of a structured program that supports stakeholders, aligns expectations and strives to achieve agreement on the overall goals, CoPs, outcome measures, assessment methods, timelines, roles and responsibilities expectations, will motivate stakeholders to invest their time and effort to developing an enduring mentoring relationship (2).

3.1.2.2.1.2 *Stakeholders*

Whilst data has focused upon the mentor-mentee mentoring relationship, there is little by way of data on other mentoring relationships particularly those involving the host organisation (19). This gap is worrying when interactions between stakeholders may be direct or indirect, complex and evolving given the changing conditions brought on

by progression through mentoring's various stages and common and personalised competencies set out at each stage (1, 37). This gap in knowledge also highlights the need to better understand the three phases of mentoring dynamics.

3.1.2.2.1.3 *The three phases of the mentoring dynamics*

The first phase of mentoring dynamics concerns efforts to initiate mentoring relationships and revolve around the recruitment stage; the pre-mentoring meeting; alignment of expectations; and acceptance of CoPs, roles and responsibility, timelines and outcome measures (1, 14). Here the 'fit for purpose' mentoring approach used by the mentoring framework introduces 'vetted' mentees and mentors approved by the program to one another and shapes the mentoring environment to draw stakeholders with complementary working styles, preferences, timelines, availabilities, needs, motivations, abilities, experience, skills and goals, together (15). Part of this process is careful considerations as to whether the potential mentee and mentor pairing will be able to achieve the mentoring objectives and develop an enduring and personalised mentoring relationship in the process along the anticipated mentoring trajectory and timelines (18).

The second phase of mentoring dynamics take place once the match has been accepted and the mentor and mentee enter into a formal mentoring relationship (18). Guided by the particular clinical, academic, personal, research, professional, ethical, psychosocial, emotional, cultural, societal, legal and educational factors affecting each stakeholder and their goals, motivations timelines, availabilities, needs, abilities, experience and skills, the mentoring framework shapes the mentoring environment (2). Communication platforms, support mechanisms, mentoring guidance and CoPs

supplement this process of building ‘fit for purpose’ mentoring relationships and improving the quality of mentoring interactions (2). Better mentoring interactions will allow frank discussions and provide mentors with the ability to support the mentee holistically (2). Such support strengthens ties and creates enduring mentoring relationships (2).

The third phase of mentoring dynamics occurs after the mentoring program is completed. There is scant data on these aspects however the third phase is generally seen as an informal process where friendships may form (5). Whilst I will discuss these phases in more detail, it may be said that each phase is designed to enhance the quality of the mentoring relationships.

3.1.2.2.1.4 *Quality of mentoring relationships*

The willingness of stakeholders to invest and develop the mentoring relationship, the calibre and content of communications and the durability of the mentoring relationship in evolving conditions determines the quality of mentoring relationships, shapes a ‘fit for purpose’ mentoring relationship (5) and forms the basis for enduring or robust mentoring relationships that can adapt to changing mentoring demands (5, 10, 11).

There must also be due consideration of the mentoring culture and the mentoring approach employed; the quality of communications between stakeholders; and the support available for the stakeholders (2, 14, 15). With little means of effectively evaluating these effects much is dependent upon the experience and skills of the mentor and the host organisation (5, 6, 16).

3.1.2.3 **‘Fit for purpose’ mentoring relationships**

Mentoring dynamics relates to efforts to nurture personalised and enduring mentoring interactions that will achieve the mentoring goals of the specific project (6, 16, 37). It must consider the 'health' of the mentoring relationship, the needs of individual stakeholders and the influences upon the mentoring process (5, 10, 11). Adaptations to the mentoring approach must thus be judged to maximise mentoring dynamics and must account for the changing mentoring environment (2). These actions guided by feedback and assessment data of the mentoring relationship and progress give rise to 'fit for purpose' mentoring relationships (6, 16, 37). There are eight elements of the 'fit for purpose' mentoring relationship.

One, the 'fit for purpose' mentoring relationship depends on the 'fit for purpose' matching (6, 16, 17). A 'fit for purpose' matching process depends on the compatibility of the stakeholder's abilities, preferences, motivations, availabilities, goals, timelines and experience to successfully complete the mentoring objectives (6, 16, 17). In addition to a 'goodness of fit' match, the 'fit for purpose' matching process also considers whether a mentoring relationship can be sustained over the projected trajectory of the mentoring relationship and if it can successfully meet its overarching goals. Inherent to this process is whether the mentee's preferences, availabilities, needs, motivations, abilities, experience, skills, and goals and academic, organisational, clinical, contextual, ethical, administrative, research and practical spheres complement the mentor's availability, experience, skills, willingness and ability to support the mentoring relationship (6, 16, 17). This posit challenges the notion that the impact of the matching process is confined to the start of the mentoring process (6, 16, 17). Rather the 'fit for purpose' matching process has an influence long beyond the establishment of the mentoring relationship (6, 16, 17).

Two, the 'fit for purpose' mentoring relationship seeks to establish balance between flexibility and consistency in the mentoring process (2). Balancing occurs through each stage of the mentoring process. Mentoring relationships and the mentoring process cannot flourish without balance between both these aspects (37). Flexibility to individualise the mentoring relationships is key to developing personalised and enduring mentoring relationships that sit at the heart of the mentoring success (6). However, a lack of consistency in the mentoring approach will result in ineffective assessments of the mentoring progress (6) and predisposing to ethical issues in mentoring (21-23). Inconsistency within the mentoring approach and structure also compromise coordination of interactions between the stakeholders and impair support and feedback (21-23). These gaps result in breaches in the mentoring standards, program guidelines, institutional policies, educational policy and professional codes of conduct which will bring the mentoring relationship into disrepute and leave it open to ethical issues in mentoring (21-23).

Three, sustaining a 'fit for purpose' mentoring relationship, is the bailiwick of the host organisation and the mentor (19). It is the mentor and the host organisation who must determine if changes to the mentoring approach are to be enacted following due consideration of the trajectory of the mentoring process and if the new course will achieve balance without breaching the CoPs (19).

Four, adaptation to the mentoring process to preserve or develop a 'fit for purpose' mentoring relationship underlines the critical importance of regular appraisals and frequent reviews of the process and its progress (33). In the absence of effective tools,

the mentor's assessments of the mentee's progress and attainment of common and personalised competencies within each mentoring stage is key (33). (I will discuss these two forms of competencies a little later).

Five, a 'fit for purpose' mentoring relationship also requires the mentor and the host organisation to estimate the likelihood of mentoring success (19). This estimation must consider both the course and likelihood of success of the current mentoring approach, risks of breaches to the CoP and the continued effects of the developments that triggered the re-evaluation (33). This reiterates the importance of mentoring training, effective alignment of expectations, clarity of mentoring goals, timelines, roles and responsibilities, CoPs and outcomes and the need for effective communication platforms (20).

Six, the host and the mentor must also consider the impact upon the mentoring culture, the hidden and the informal curriculum, the values and goals of the program and reputation of the program and determine their influence upon the mentoring process, trajectory and the likelihood of success (15). This underlines the need for due consideration of external influences upon the mentoring process (15).

Seven, adaptations to the mentoring approach must be reviewed regularly and shaped according to the latest evaluations of stakeholder needs, changing mentoring conditions and mentoring goals (2, 4).

Eight, all adaptations must then be agreed upon with the mentee and expectations set. This underlines the need for robust and consistent communications (2, 4).

3.1.2.4 **The mentoring framework**

The mentoring framework helps map the course of the ‘fit for purpose’ mentoring relationship across the mentoring stages and contends with the wider environmental factors affecting the clinical, academic, personal, research, professional, ethical, psychosocial, emotional, cultural, societal, legal and educational spheres of each stakeholder (15). To do so, the mentoring framework considers each stakeholder’s micro-environments within the mentoring ecosystem (2, 17). (Each mentoring micro-environment within the mentoring ecosystem contains the personal, professional, academic, societal, cultural, research and clinical influences that impact the ability and willingness of individual stakeholders to participate in the mentoring relationship (2, 17)). The mentoring framework is also influenced by the competency based mentoring stages, the mentoring culture and the wider influences upon the mentoring relationship within the mentoring ecosystem (1, 4). To determine if a mentoring relationship is ‘fit for purpose’ demands due consideration to all facets of the mentoring ecosystem as well as the mentoring dynamics *within* the mentoring relationship as much as those outside the mentoring relationship (4, 50). As a result, mentoring frameworks are heavily reliant upon assessments of the various influences upon the mentoring relationship (1, 4). These considerations underline the notion of the mentoring framework being a responsive structure that is also focused upon achieving balance within the mentoring relationship (19). The mentoring framework is thus dependent upon the host organisation and the mentor to guide the adaptations to the mentoring approach (2, 19) and consider the needs, goals, availabilities, and practical considerations impacting the stakeholders along the course of the mentoring program (1, 2, 4).

3.1.2.4.1 *Continuous assessments*

Continuous assessments of the mentoring process, relationship, environment, framework, and ecosystem are critical to the effective shaping of the mentoring approach (19). However, my PMI-led reviews suggest that current assessment processes and tools are lacking (33). Critically they are neither carried out in a continuous and individualised manner nor effectively consider common and personalised competencies present at each stage of the mentoring process.

Common competencies refer to competencies that must be met by all mentees as they progress through a specific mentoring stage (1, 4).

Personalised competencies refer to specific targets that are set for each mentee depending on their mentoring project and its particular objectives, setting, support systems and schedules as well as the mentee's own working styles, preferences, timelines, availabilities, needs, motivations, abilities, experience, skills and goals (1, 4). These personalised competencies also consider the academic, organisational, clinical, personal, contextual, ethical, administrative, research and practical factors impacting the mentee's ability to participate effectively in the mentoring process (1, 4).

The presence of common and personalised competencies helps set out milestones that mentees must meet in order to progress through each stage (1, 4). These milestones allow the stakeholders to assess the mentoring relationship, the mentee's progress, the support provided and also ensures the incorporation of regular evaluations (33). With progress along the mentoring stages dependent upon the successful completion of each

stage, assessments from one stage feed into and inform the assessments of the stage that follows (1, 4). It thus, in effect, provides longitudinal assessments of the mentoring process.

Use of milestones will also help to inform the mentor of the mentee's situation, needs and progress as well as the 'health' of the mentoring relationship (1, 4), direct prompt, accessible, individualised, necessary, continuing and comprehensive support for the mentee and the mentoring relationship and guide timely and appropriate adaptations to the mentoring approach to ensure it remains 'fit for purpose' (33).

3.1.2.4.2 *Regular communications*

Regular communications between the stakeholders is key to the 'fit for purpose' mentoring relationship (32, 43). Consistent and timely communications help build trust and personability between mentee and mentor and aid assessments of mentoring dynamics, common and personalised competencies and ensures continued engagement and oversight of the mentoring process (32, 43). Two PMI-led reviews found that a communications platform must be built around clear codes of conduct (17) and employ a combination of synchronous communication platforms such as FaceTime, Skype, Zoom and or telephone calls and asynchronous communication methods such as email and text messaging and WhatsApp messaging (32), to be effective.

3.1.2.4.3 *Mentor training*

The mentor and the host organisation must be trained to assess and respond to the needs of the mentee in an opportune and appropriate manner and provide personalised, appropriate, specific, timely, holistic, accessible and longitudinal support and

feedback (19) given a lack of effective assessment tools (33) to guide the mentoring framework. Unsurprisingly, Sheri *et al.* (20) emphasise the importance of mentor training in equipping mentors with the skills required.

3.1.2.5 Mentoring Approach

The mentoring approach which refers to the type of mentoring adopted by a program is informed by the mentoring framework. The mentoring approach is shaped by mentoring goals, setting and context determines the mentoring approach (6, 16, 206, 220, 228, 229, 256, 259-263). Mentoring approaches can be formal, informal or even semi-formal (37). Most mentoring programs use either a formal or informal mentoring approach. A formal mentoring approach offers structure to the matching process (18) which is invariably set by a host organisation (15, 16). In most cases, the matching process in a formal approach employs a criterion based approach carried out by the host (I will discuss criterion based matching later) (264). The host also specifies the mentoring goals, learning objectives, roles and responsibilities, codes of conduct, standards of practice and the type and duration of interactions (15). Within the formal program is often protected time dedicated to mentoring (15, 16) as well as funding and administrative support (15, 16). The benefits of a formal mentoring program include an increase in faculty participation, a boost in mentor numbers, matching, better support, oversight as well as training for the mentors (16).

Informal mentoring “*revolves around the idea of apprenticeship in medicine*” (16), page 5). Interactions are more “ad-hoc” (16) and influenced by the “institution, mentee and mentor” (15). Informal mentoring offers a more collegial environment that facilitates open communication that can develop relationships between mentors and

mentees (16). However, a lack of protected time, support from the host organisation (16) and poor oversight and transparency (16) threaten the viability of informal mentoring processes.

Aside from a formal, informal or a mixed approach and the type of matching process that will be used, the mentoring framework also determines the duration of the mentorship. This is shaped by and varies with the needs, motivations, availabilities of the stakeholders (16, 265), and the level of academic, research, clinical, social and personal support required to achieve the mentoring goals, and on the mentoring setting and goals (6, 16, 206, 220, 228, 229, 256, 259-263).

Mentoring approaches also differs when considering skills training and the training context. Burlew (266) described use of the Halstedian training model of “*see one, do one, teach one*” (266), page 986) as part of their mentoring process in surgery. This approach begins with the mentor briefing the mentee on the procedure (266-268). This is followed by the mentee observing as the mentor demonstrates the procedure and then performing the procedure under their guidance (266). Like coaching, the mentee repeats the procedure under supervision and with timely, appropriate, personalised, specific, holistic and sometimes longitudinal feedback until the mentee has mastered the procedure (266). Neither Burlew (266) nor Birch *et al.* (269) explain how this aspect of surgical mentoring differs from traditional coaching or supervision. There are also no accounts of the Halstedian training model in mentoring in medicine.

3.1.2.6 **Mentoring stages**

I forwarded the concept that mentoring relationships evolve in stages, underlining the unique nature of Novice Mentoring. This concept posits that mentoring relationships evolve in stages built around research based Novice Mentoring processes.

The pre-mentoring phase relates to recruiting and training mentors and mentees (18). Matching relates to pairing like-minded mentees and mentors with common interests and goals and focused upon building 'fit for purpose' mentoring relationships (18). Preliminary meetings relate to activities leading up from the matching process to confirmation that a mentoring relationship has been established (18). The mentoring process relates to nurturing the mentoring relationship and the mentoring approach.

Each mentoring stage contains specific goals and with that particular competencies that must be met for progress from one mentoring stage to the next. Each stage builds on the success of the last and follows a chronological order underscoring the importance of structure. Within each mentoring stage are personalised and common competencies that help align expectations, set timelines, roles and responsibilities, establish clear end points, guide mentees towards their goals and act as milestones (1). Critically, the competencies facilitate longitudinal and holistic assessments across the course of the mentoring program (33) that allow the host organisation and the mentor to appraise adaptations, approve and enact further adjustments to achieve 'fit for purpose' mentoring relationships (19).

The stages of mentoring are outlined in Figure 3.3.

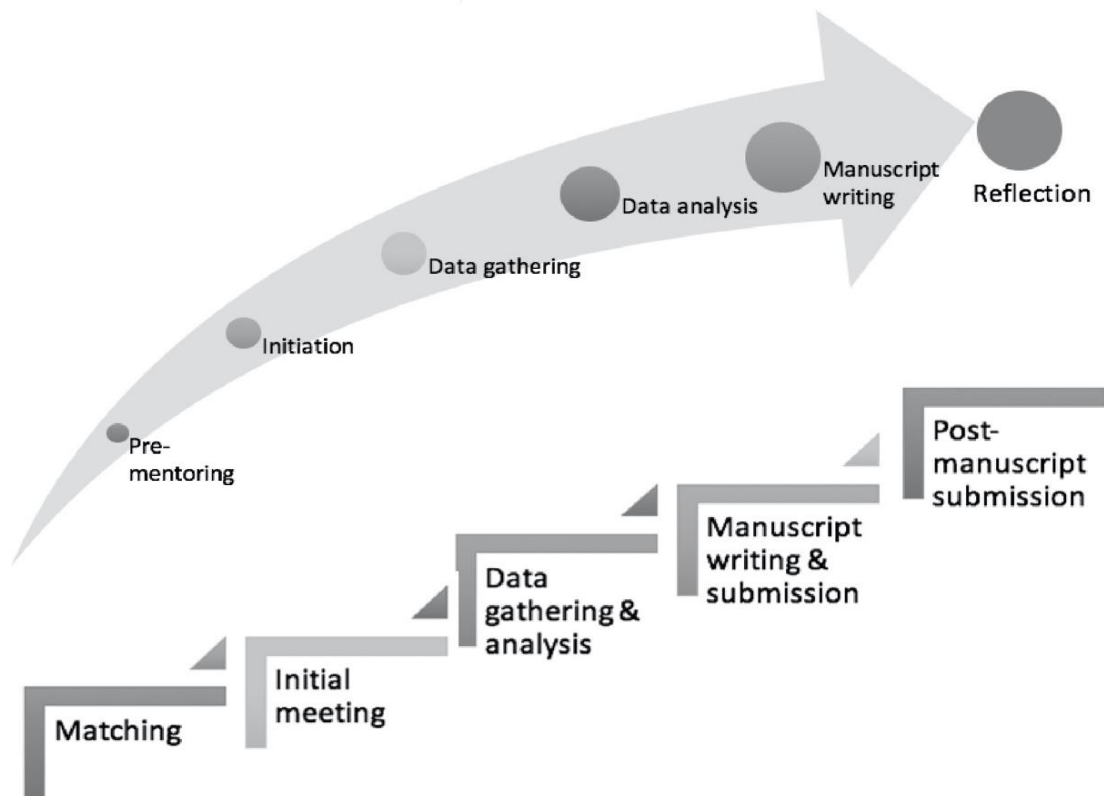


Figure 3.3: The stages of mentoring by Krishna *et al.* (1) from “Mentoring stages: A study of undergraduate mentoring in palliative medicine in Singapore”

3.1.2.6.1 *Pre-mentoring*

3.1.2.6.1.1 *Recruitment*

The pre-mentoring process introduces prospective mentees and mentors to the mentoring program and provides them with information on the mentoring approach, the various stages of the mentoring program, the mentoring culture, the codes of conduct and the roles and responsibilities of mentees, mentors and the host organisation over the course of the mentoring process (223, 270). It is also an opportunity to introduce potential mentees and mentors to the critical role of the host organisation within the mentoring program and as part of their mentoring relationship (19, 228, 242, 259, 260, 265, 271-275). Awareness of the roles and responsibilities of

stakeholders, the course of the mentoring program and support mechanisms is a pivotal aspect of recruiting and aligning expectations of mentees and mentors (1, 2, 256, 266, 276, 277).

3.1.2.6.1.2 *Training*

Sheri *et al.* (20) found that training was often structured and ran longitudinally and parallel to the evolving mentoring relationship, providing opportunities for timely and appropriate support throughout the course of the mentoring process. Training often occurs in the form of workshops that also offer participants a chance to experience and imbibe the culture of the mentoring program which include core beliefs, values and principles that will guide the stakeholders in their decision making and conduct over the course of the mentoring program (20). The training process begins with equipping the mentees and mentors with basic communication and negotiation skills required, methods of providing timely, appropriate, specific, personalised, accessible, holistic, and longitudinal feedback and approaches to assessing mentee progress and the health and needs of their mentoring relationship (20, 33). Training prepares mentees and mentors for the matching process, equipping them with the skills needed to evaluate their individual needs, skills, goals and motivations as well as their particular micro-environments and determine what they can commit to in the mentoring relationship such as timelines and the duration of projects (2, 18, 20). It also teaches mentees and mentors to be reflective and evaluate their own characteristics and determine the traits, knowledge, interests, goals, experience and working style they hope to find in their mentee/mentor (20).

Another element of training is equipping mentors with the knowledge and skills to make adaptations to the mentoring approach in order to ensure balance between consistency in the mentoring process and the need for personalisation to meet the individual needs of the mentees, their mentoring relationships and their changing circumstances (20). Understanding the sometimes competing requirements for personalisation and consistency may help mentees and mentors better accept the rationale for changes to the mentoring approach and structure, align expectations and maintain their motivation and willingness to actively participate in the mentoring process (3).

3.1.2.6.2 *Matching Process*

In a significant break from accepted knowledge that see matching as a ‘one-off’ or introductory event to bring prospective mentees and mentors together, matching now revolves around the concept of ‘fit for purpose’ (18). The host organisation overseeing the curriculum employed is responsible for determining the type of matching to be employed to achieve ‘fit for purpose’ matching within a program (18, 19). Hee *et al.* (18) suggest that there are several types of matching. The three most common forms used in Novice Mentoring are formal, informal, and mixed matching.

3.1.2.6.2.1 *Formal matching*

Formal matching sees mentors assigned to mentees by the host organisation. Hee *et al.* (18) note that most formal mentoring programs adopt criterion based matching which “*sees mentors paired with mentees based upon specific criteria and shared interests and goals*” (18), page 3). Aside from being more sustainable for large mentoring programs, Gazza and Shellenbarger (278), Sawatzky and Enns (279),

Bozeman and Feeney (280) suggest that criterion based matching processes in medicine pivots upon the notion that effective mentoring relationships depend upon the 'goodness of fit'. These authors (280-286) also suggest the success of criterion based matching processes depends on the degree to which mentor and mentee preferences are met. The authors appear to be informed by three theories of matching which dominate thinking in medicine. Bozeman and Feeney (280) and Eddy *et al.* (287) employ the Social Identity Theory to suggest that successful matching involves pairing mentees with mentors with common backgrounds, demographics, goals, values and beliefs to foster shared understandings and how they perceive one another. Byrne (288) employs the Similarity-Attraction Paradigm to pair individuals with similar attitudes whilst Bozeman and Feeney (280), Byrne (288), Ferrier-Kerr (289) match mentees to mentors based on common preferences. Ensher and Murphy (290) similarly believe that matching based on similar values and beliefs would facilitate a deeper connection and result in less misunderstandings and misconceptions. Bozeman and Feeney (280), Ensher and Murphy (290) also posit that a pairing of like-minded individuals from similar backgrounds will help remove social barriers such as social stereotyping, enhance participation in the professional relationship, and motivate mentees and mentors to learn from each other and be more receptive to feedback.

Hee *et al.* (18) found that the criteria employed in current criterion based approaches in matching in mentoring tended to include the mentor's clinical and professional characteristics, experience, standing and reputation, the mentee's level of education and experience and personal characteristics, working style and demographic features such as age, gender and race. It should be noted that Kumar *et al.* (283), Koopman and Thiedke (285), Clark *et al.* (291), Sangole *et al.* (292), Cullison (293), Harden *et al.*

(294) found no data that demographic matching improved outcomes. The success of formal matching is not known though it has been suggested that formal matching results in successful mentoring outcomes (6, 257, 295-297).

3.1.2.6.2.2 *Informal or Mentee initiated mentoring relationships*

Informal matching sees either mentees approach potential mentors to initiate a mentoring relationship (6, 17, 244, 249) or mentor initiated matching. Here we consider mentee-initiated mentoring on the back of data from Welch *et al.* (298) which suggests that mentor-initiated mentoring is rarely adopted. Mentee-initiated mentoring relationships are often based upon the mentee's previous clinical, research and or academic interactions with the mentor (257, 259, 299, 300). Some programs require the program director to approve mentee-initiated mentoring relationships (262). Some studies suggest that informal mentoring results in better mentoring experiences (6, 16).

3.1.2.6.2.3 *Mixed matching*

With Bland *et al.* (301) suggesting criterion based matching results in higher research activity and Shollen *et al.* (302) identifying that mentee-initiated matching increases career satisfaction, there is increasing belief that a combination of these approaches may enhance matching outcomes (6, 125, 240, 257, 295-297, 303, 304). In mixed matching criterion based matching based upon personality (16, 258, 305), gender (16, 249, 306, 307) and goals (5, 6, 16, 257-261, 265, 275, 305, 306, 308, 309) is used to match mentors to mentee with complementary professional and recreational interests, personalities and work styles (6, 125, 240, 257, 295-297, 303, 304). Following this, mentees are provided with a list of mentors who are matched to them, thus allowing mentees the opportunity to meet the various mentors on the list and initiate a mentoring relationship with the mentor of their choice (6). Loo *et al.* (37), in forwarding

Krishna's Mentoring Pyramid, suggest that a mixed mentoring approach would bring forth the best of both formal and informal matching. No data compares the impact of the three approaches.

3.1.2.6.3 *Preliminary meeting*

Following the matching process and prior to the commencement of the mentoring relationship, preliminary meetings allow mentors and mentees to meet in person and determine if they would like to pursue a mentoring relationship (16, 239, 261). During these preliminary meetings, mentees and mentors discuss and agree upon individual goals, timelines and schedules, roles, and responsibilities, mentoring styles and approaches and also align expectations (6, 16, 206, 229, 238, 239, 258-260, 263, 265, 271, 295, 306, 307, 309-311). Preliminary meetings help nurture personalised relationships (6, 16, 229) and determine the frequency of mentoring meetings (16, 206, 220, 221, 227, 230, 232, 239, 256, 259, 260, 262, 295, 312, 313). Four papers (206, 262, 307, 314) reported use of signed agreements between the mentor and the mentee as a statement of their undertaking, though the benefit of this approach is not reported. However, it does highlight the importance of aligning expectations with Kow *et al.* (23) suggesting that poor alignment of expectations is a common source of failed mentoring relationships.

If the mentee or the mentor does not wish to pursue a mentoring relationship, then the host organisation will match the mentee to other potential mentors (16, 239, 261).

Hee *et al.* (18)'s review of matching suggests that the matching process includes the preliminary meeting stage and accepting the match stage where there is agreement to

pursue a mentoring relationship (18, 298). This perspective casts matching as a longitudinal mentoring process with influence upon mentoring outcomes. Hee *et al.* (18) suggests a shift towards a longitudinal concept of matching in mentoring where matching has far reaching effects upon the mentoring process and outcomes moves thinking away from the *goodness of fit* concept of matching between mentee and mentor and towards the *fit for purpose* concept of matching. Hee *et al.* (18) posit that a match is *fit for purpose* when the mentor's general skills, experience, characteristics, and training which are key to supporting the evolving needs of the mentee and the mentoring relationship are deemed to be complementary and appropriate for the specific mentoring project and timelines. This highlights four features of matching.

One, as discussed, the impact of matching is not confined to the start of the mentoring process (1). Two, the mentor's ability to provide specific support is critical to nurturing the mentoring relationship and thus the success of the mentoring process (4, 20). Three, the map of the proposed mentoring program will highlight the support and training required for mentee and the mentor alike (2). This ought to allow the host organisation and latterly the mentor and the mentee to determine if the mentor will be able to support them and aid the mentor in determining if, based on their knowledge of the mentee's skills, attitudes, knowledge, abilities, experience and availabilities could successfully complete the mentoring project (19). Having the mentoring trajectory established will also help align expectations (1). Four, whilst criterion based matching dominates the matching process, it is clear that a personalised element is also a part of the matching process (18). Personalisation is apparent in the individualised mapping of the mentoring process, the structures that are put in place to guide the process, train the stakeholders and assess and support the stakeholders (18). Indeed,

the matching process, too, occurs in stages which includes the process of recruitment where potential candidates self-identify following exposure to the program and appreciation of the mentoring structure and culture (15, 18). In addition, criterion based matching is also supplemented by the pre-mentoring stage or the initial meetings (18). Perhaps also important to consider is that many programs offer a two-week trial period before a match is confirmed (18).

3.1.2.7 **Mentoring Environment**

Hee *et al.* (15) suggest that the mentoring environment is composed of two interwoven elements: the mentoring structure and culture. The mentoring environment is defined as “*shaped by the nature, culture and structure of evolving mentoring relationships between the mentor, the mentee, the host organisation and the curriculum*” (15), page 2196). How the mentoring culture and structure impacts the mentoring relationship and mentoring process is influenced by a number of factors not least whether the mentoring program is formal or informal (15).

3.1.2.7.1 *Culture*

Culture refers to “*the norms, values, beliefs, practices and support moulding the socioemotional environment in which learning occurs*” (15), page 2194). There are five aspects to mentoring culture that include the informal and hidden curriculum, the stakeholders and their mentoring relationships. Given that the stakeholders and mentoring relationships have been discussed, I will focus upon the role of the formal, informal and hidden curriculum.

3.1.2.7.1.1 *The formal curriculum*

The formal curriculum is defined as “*the actual course of study, the planned content, teaching, evaluation methods, syllabi, and other materials used in any educational setting from lecture halls to labs to seminar rooms. Also included are formal policy statements, regulations, expectations, and competencies for every educational cohort conceivable*” (15), page 2193). The formal curriculum maps out the goals, learning objectives, assessment methods and the educational approach employed (315-317). It also specifies the roles and responsibilities of the tutor and learner (318), the codes of conduct (319) and standards of practice that will be employed (320). The formal curriculum stipulates the frequency, duration and timings of meetings, online interactions, tutorials, teaching sessions and feedback sessions and the provision of protected time for mentee and mentors (247, 321). The formal curriculum is thus responsible for structuring the learning process and formal interactions within the mentoring environment (322-324).

Design and content of the formal curriculum is influenced by the host organisation and external factors such as the healthcare and education systems as well as the setting, funding, support and sustainability of the programme, highlighting a reciprocal relationship between the mentoring structure (325) and the formal curriculum (148, 326).

3.1.2.7.1.2 *The informal and hidden curriculum.*

The informal curriculum denotes “*much of what occurs in clinical settings—the opportunistic, idiosyncratic, pop-up, and often unplanned instruction that takes place between mentor and mentee. The informal curriculum also takes place in nonclinical settings such as faculty offices, hallway interactions, or the countless other settings in*

which teachers and other health care providers interact with trainees” (327), page 452).

The hidden curriculum *“includes the ideological and subliminal messages of both the formal and informal curricula. The hidden curriculum can be both human and structural; that is, it can be transmitted through human behaviours and through the structures and practices of institutions” (327), page 452).* It is the hidden and informal curricula’s largely opportunistic, idiosyncratic instruction that includes the transmission of values and beliefs that underlie one’s actions and the practices of institutions that impacts the mentoring culture (15).

Like the mentoring structure, the mentoring culture has a reciprocal relationship with the stakeholders. For instance, the host organisation’s visions, values and goals shape the mentoring culture (15). Likewise, mentors in their roles as role models (5, 15) *“heavily influence students’ emotions and behaviour” (15), page 2195)* and shape the mentoring culture (15). How the mentees view and how they respond to these interactions shapes the mentoring culture (15, 16). In the face of such individualisation, and changing conditions and perspectives, it comes as no surprise that there is a lack of validated, evidence based, robust mentoring assessment tools (6, 17) that are capable of (15) *“delineating the dynamics of mentoring interactions and the facets that facilitate quality interactions” (6), page 872).*

3.1.2.7.1.3 Structure

The mentoring structure is tasked with attending to the diverse influences within the mentoring culture. Structure in mentoring is traditionally seen as *“the framework that*

shapes the learning approach and ensures consistent professional and personal support for mentees and mentors within the programme” (15), page 2193) which includes the “frequency, duration and timings of meetings, online interactions, tutorials, teaching sessions and feedback sessions and the provision of “protected” time” (15), page 2193). Yet this concept of structure is ambiguous, conflating the mentoring structure with the mentoring framework (16).

My findings suggest that the mentoring structure is made up of the mentoring framework and the CoPs. The overall principles that guide the mentoring structure are ensuring a safe environment for mentoring relationships to develop, to bring together and coordinate interactions between stakeholders, to train and support the stakeholders longitudinally and holistically, to foster an effective and nurturing mentoring culture and to assess and oversee the mentoring process (2). The mentoring structure is built around the mentoring stages, confined by the CoPs of the program (2) and guided by prevailing assessment data and a needs analysis of the program. The needs analysis and subsequent reviews of the program will also highlight available manpower, financial, administrative and physical resources available to the program, the prevailing culture and needs as well as the support for the program (6). Along with the assessment data, it reveals the mentoring structure as an evolving structure exhibiting a mix of flexibility and consistency.

Flexibility within the mentoring structure is needed to contend not only with the personalisation of individual mentoring relationships within the program but also to changes to the wider influences of clinical, academic, research, professional, ethical, cultural, societal, legal and educational programs and factors encompassing the

mentoring program itself (4, 15). Thus, there are wider and individual influences upon the mentoring structure (15). Indeed, this flexibility has allowed the PMI to contend with the impact of the COVID-19 pandemic on mentoring relationships (328). This is seen in the adoption of peer and e-mentoring in the midst of a mentor shortage (32, 50). This adaptation serves to highlight the mentoring structure's role in actualising the host organisation's goals for the mentoring program in determining the matching process and mentee and mentor training (15, 16, 38), the mentoring culture, the mentoring content and design (6, 15, 17), the type of oversight and support to be provided (15) and aligning the program with external factors like "*departmental policies and broader curricular concerns*" (15), page 2193).

3.1.2.7.2 *Development of the mentoring environment*

The mentoring environment develops in five stages. The *first stage* occurs as early as the initiation process beginning with recruitment, vetting and training mentees and mentors (14, 15). Here, the mentees are exposed to the culture and structure and the prevailing informal, hidden, and formal curricula of the program.

The *second stage* contains the matching, pre-mentoring stage and the mentoring relationship (6, 18) where the mentee and the mentor bring to the fore their particular "*norms, values, beliefs, practices*" (15), page 2193) moulded by their historical and sociocultural backgrounds and their clinical, academic, personal, research, professional, ethical, psychosocial, societal, legal and educational spheres (15). This fusion of micro-environments forms the rudimentary mentoring environment (15).

The *third stage* is the developmental stage which sees mentoring interactions mature into mentoring relationships influenced by the mentoring dynamics between the stakeholders and their changing micro-environments (14, 15).

The *fourth stage* sees the refinement of the mentoring relationship informed by the evaluation and feedback stages throughout the length of the mentoring process and that guide the provision of timely, appropriate, specific, personalised, adaptable, responsive, holistic mentoring support (14, 33). It is at this stage that the ‘fit for purpose’ mentoring relationship comes to the fore (14, 33).

The *fifth stage* highlights the importance of a nurturing mentoring environment that maintains privacy and one that facilitates frank and personalised discussions that motivate mentees to maintain and invest in their mentoring relationship (15, 17).

3.1.2.8 **The mentoring ecosystem**

It could be said that the five stages in the development of the mentoring environment validate Hee *et al.* (15)’s characterisation of the mentoring environment as being “*shaped by the nature, culture and structure of evolving mentoring relationships between the mentor, the mentee, the host organisation and the curriculum*” (15), page 2195). It does suggest that in truth the mentoring environment is the fusion of the individual stakeholder’s “*norms, values, beliefs, practices*” (15), page 2193) which is moulded by the mentoring structure to suit the mentoring setting, practice and clinical, academic, personal, research, professional, ethical, psychosocial, societal, legal and educational spheres affecting the stakeholders and the program (15). The notion that each stakeholder influences the mentoring environment, process and dynamic and

drawing from the posit that the mentoring process revolves around ubiquitous competency based mentoring stages gives rise to the idea of a mentoring ecosystem (2) where each stakeholder possesses an individual 'micro-environment' (2, 15). For mentees and mentors, their micro-environment consists of internal and external factors. Internal factors account for individual characteristics, availabilities, abilities, motivations and goals. These are impacted by external factors such as particular sociocultural, curricular, personal, academic, clinical, professional, ethical and research factors; prevailing geopolitical, care and educational financing as well as healthcare and educational systems (2, 15). Changes in these factors affect their micro-environment and influences their ability to participate productively in the mentoring process (2, 15).

With various stakeholders being continuously affected by the changes in the clinical, academic, personal, research, professional, ethical, psychosocial, emotional, cultural, societal, legal and educational spheres, building relationships between stakeholders requires a dynamic, entwined, evolving, adaptable, context specific, goals sensitive, stakeholder-, mentoring approach-, mentoring dynamic-dependent relationship (2, 15). Mentoring's nature underscores three considerations. One, the notion that all mentoring relationships are not the same. Indeed, with unique micro-environments interacting with one another in distinctive settings, each mentoring interaction requires personalised consideration and support (2, 15). Two, as a result of their personalised nature mentoring processes and relationships should be continuously assessed and supported (2, 4). Three based on assessments of the mentoring progress, health of the mentoring relationship and the needs and development of mentoring stakeholders, the

mentoring approach will likely require frequent adaptations to contend with the effects upon individuals (2, 33).

Understanding the development of mentoring relationships between stakeholders is made harder by the complex nature of the host organisation's micro-environment (2, 19). Despite nurturing the program's mentoring environment, the host organisation's micro-environment is informed by internal and external factors including the mentoring structure, the nature, and dynamics of interactions between stakeholders and the informal, formal and hidden curricula help to shape the program's own mentoring environment (2, 19). The host organisation's micro-environment thus deserves the same consideration and support as provided to mentees and mentors (2, 19). It also underlines the importance of assessment processes being sensitive to the mentoring environment and the host organisation (2, 19).

3.1.2.9 The course of micro-environments

The mentee's micro-environment is influenced by the program's mentoring environment as early as the recruitment stage where participation is contemplated (1, 2). At the matching stage where mentees are introduced to potential mentors, their micro-environment begin to intermingle (18). Within this 'meso-environment', elements within the mentee's micro-environment affect the mentor's ability to function within the mentoring program and vice versa (2). The mentoring relationship begins with the mentee's and mentor's formal agreement to enter into a mentoring relationship with each other under the aegis of the mentoring program (6, 18). This meso-environment bears some closer scrutiny. The meso-environment opens discussions about the concept of mentoring dynamics discussed in Section 3.1.2.2.1.

Here, mentoring dynamics is contained within the area of overlap between the mentee's and mentor's micro-environments (6, 18).

With this, the mentee's and mentor's meso-environment fuse with the host's micro-environment as well as the program's mentoring environment to form the macro-environment (2, 19). This macro-environment sees the mentor and mentee influenced by wider factors affecting the mentoring program and host organisation (19). The macro-environment will change as the stakeholders' micro-environment interact with one another and as the mentoring relationship moves through the mentoring stages (1, 4). Thus, the evolution of the mentoring micro-, meso- and macro-environments is directed by the mentoring framework which coordinates interactions and determines the course of the relationship through the various mentoring stages (2, 17). Limiting variations and informing stakeholders of the confines of acceptable practice are CoPs. Further confining practice are the curricula, practical, clinical, academic, personal, research, professional, ethical, psychosocial, emotional, cultural, societal, legal and educational factors within the system (15). Visualising the mentoring relationship as it courses through the various mentoring stages, highlights the idea of the mentoring ecosystem as a map (2).

3.1.2.10 Mapping the mentoring ecosystem

This theoretical framework suggests that each stage within the mentoring process is informed by common and personalised competencies, making it is possible to assess the mentoring relationship longitudinally and potentially holistically accurately, appropriately and effectively (1, 2, 4). In this ideal but still untested concept not only does the competency based mentoring stages shed light as to how micro-, meso- and

macro-environments interact but it also highlights the impact of sociocultural factors have upon the mentoring process, relationship, and trajectory (1, 2, 15). The mentoring ecosystem is also explicate the need for balance between consistency and demands for flexibility, and to determine the trajectory of mentoring relationships (1, 4).

Figure 3.4 highlights the dynamic elements and interactions within the mentoring ecosystem (2). Here, mentoring stages are delineated as boxes linked by arrows, suggesting that progression along the mentoring stages is usually fixed and unidirectional. The borders of these boxes represent codes of practice, education and professional standards, roles, responsibilities and milestones which collectively delineate the ‘competencies’ required at the specific stage. Having the competencies as part of the box underlines the inherent variability that is present within each mentoring relationship. The boxes are also delineated as broken lines to suggest that the developing mentoring relationship may be influenced by the wider mentoring environment and its constituent micro-, meso- and macro-environments and mentoring structure. Yet these borders do not allow for adaptations to accommodate to stakeholder needs, goals and practices to breach the confines of the specific stage’s acceptable practice parameters.

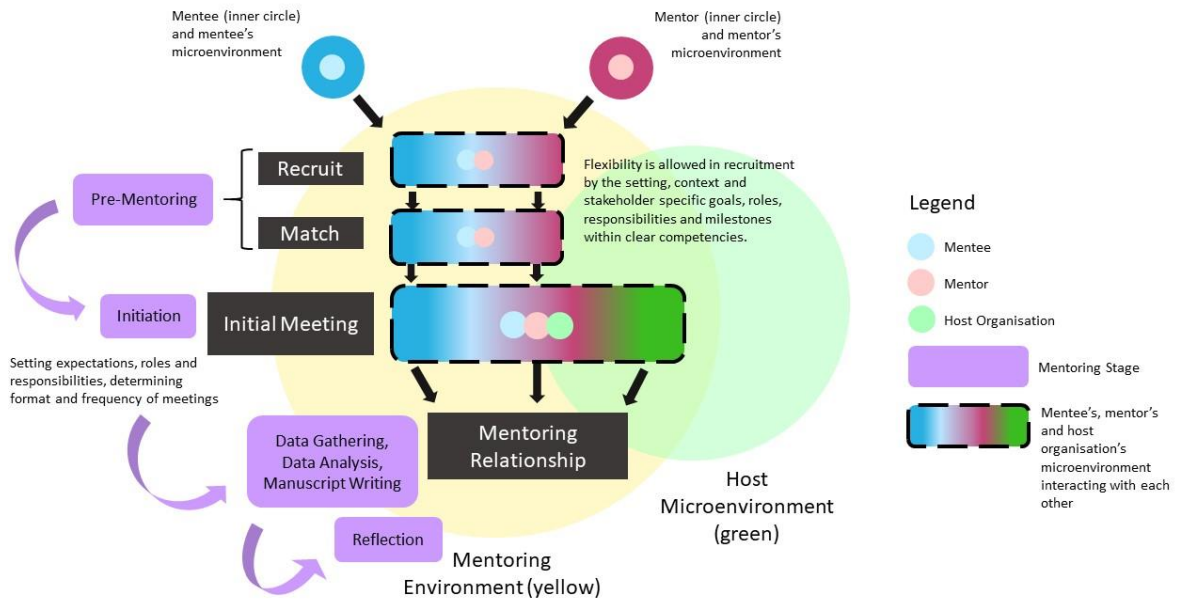


Figure 3.4: The Mentoring Ecosystem

The circles within the boxed stages represent different considerations that make up the overall competencies of the stage as set by the stakeholders and the factors within the stakeholders' micro-environments. How the circles within the box interact with one another is variable and highlight the flexibility within each stage and in the mentoring relationship as a whole. This would account for realistic variations and idiosyncrasies within each mentoring relationship as a result of differing mentoring dynamics as well as stakeholder capabilities, capacities, motivations, goals and circumstances (2).

3.1.2.11 Benefits of mentoring

The benefits of mentoring to the mentees are rarely delineated though they may be described as personal and professional. I have compiled the tables and illustrations on the subject in Table 3.6.

Table 3.6. Benefits to Mentees

Benefits	References
Personal	
Character <ul style="list-style-type: none"> • Increased Sense of Self-efficacy and Self-confidence • Increased Psychological and Behavioural Competence Personal Abilities <ul style="list-style-type: none"> • Improved Communication Skills • Expansion and Consolidation of Social Skills • Emotional and Psychological Support Satisfaction <ul style="list-style-type: none"> • Career/fellowship • Mentoring program • Career Mentoring Advice • Elective Advice • Residency Application Process 	(5, 16, 38)
Professional	
Career <ul style="list-style-type: none"> • Developing Professional Identities • Career Guidance, Support and Advice • Opportunities for Career Advancement • Enhanced Job Satisfaction • Influence on Career Path Clinical <ul style="list-style-type: none"> • Improving Clinical and Interpersonal Skills • Improved Patient Care Academic (research) <ul style="list-style-type: none"> • Increased Research Productivity • Improved Research Skills • Better Research Opportunities • Improved Support and Resources for Research • Improved Research Time Allocation Academic (non-research) <ul style="list-style-type: none"> • Becoming a Self-Directed Learner • Improved Teaching Skills • Increased Professional Society and Committee Nominations Others <ul style="list-style-type: none"> • Receives guidance in time management allowing for Better Quality of Life • Improved Medical School Performance • Improved Institutional Support and Backing 	(5, 16, 38)

Personal benefits to the mentor include “*the opportunity to share knowledge and experience*” (16), page 7), satisfaction (16), joy, fulfilment (38) and taking “*pride in a mentee’s success*” (16), page 7). Mentoring also allows mentors a “*chance to pay it forward*” (16), page 7) and find new friendships (5).

The professional benefits of mentoring to the mentor include “*exposure to new ideas, gaining new collaborators, improved job performance, professional growth and accelerated research productivity and promotions*” (16), page 7). New collaborative avenues also allow the host organisation to nurture healthy mentoring relationships.

3.1.2.12 Barriers to effective mentoring

The key obstacles to effective mentoring are a lack of time, difficulties with faculty recruitment, and maintaining balance which hinder the fostering of mentor-mentee relationships (17) and result in breakdowns of mentoring relationships and predispose to ethical issues in mentoring relationships (16).

3.1.2.13 Mentoring theories

Whilst there have been many theories of mentoring forwarded, all mentoring theories associated with Novice Mentoring fail to consider mentoring’s nature, the role of the host organisation, the importance of the balancing process and the impact of the mentoring ecosystem and the competency based mentoring stages compromising their applicability (329, 330).

3.1.2.14 Defining Novice Mentoring

I have left defining Novice Mentoring to facilitate better appreciation of its various elements. Here I define Novice Mentoring as

“a multifaced relationship between an experienced clinician, junior clinicians and or students and the host organisation (henceforth stakeholders) that is focused upon creating personalised and enduring mutually beneficial mentoring relationships within the confines of a mentoring ecosystem. The mentoring ecosystem establishes the mentoring framework that establishes a consistent mentoring approach and guides the mentoring relationship through Novice Mentoring’s competency based research stages; nurtures a dynamic, entwined, adaptable, context-specific, goal-sensitive, mentee-, mentor-, host organisation-, mentoring approach- and mentoring relationship-dependent mentoring relationship that can contend with the diverse influences upon the stakeholders, their mentoring relationships and the mentoring program; and ensures that there is effective assessment, oversight and support of the mentoring relationship and process”

This is characterised by

- a. Developmental: novice mentoring is seen as an evolving relationship between an experienced clinician, junior clinicians and or students and the host organisation that is focused upon creating personalised and enduring mutually beneficial mentoring relationships (37),
- b. Relational: to sustain these personalised mentoring relationships over time, in changing conditions, different settings and over the course of the mentoring process, novice mentoring relationships exhibit a dynamic, entwined, evolving,

adaptable, context-specific, goal-sensitive, mentee-, mentor-, host organisation-, mentoring approach- and mentoring relationship-dependent nature (mentoring's nature) (2),

- c. Structural: to ensure a consistent mentoring structure that can facilitate/enable balance between a flexible novice mentoring approach which can accommodate to the evolving mentoring needs, goals and circumstances of stakeholders and yet still sustain a structured mentoring framework that can maintain a consistent novice mentoring approach and confine practice to prevailing educational, professional, clinical and organisations standards and COPs; novice mentoring requires an effective mentoring structure and consistent support from the host organisation (1),
- d. Stages: mentoring relationships in novice mentoring proceed along clearly delineated mentoring stages that begin with the recruitment, training, matching, pre-mentoring, and the mentoring relationship stages (1),
- e. Competencies: each mentoring stage in novice mentoring contains common and personalised competencies that must be met before a mentee can proceed to the next mentoring stage. Common competencies are applicable to all mentees. Personalised competencies are mentee dependent and are determined and agreed upon by the stakeholders. Personalised competencies are based upon the mentee's working styles, preferences, timelines, availabilities, needs, motivations, abilities, experience, skills, and goals as well as the evolving considerations in the clinical, academic, personal, research, professional, ethical, psychosocial, emotional, cultural, societal, legal, and educational spheres affecting the mentee and mentor (2),

- f. Balance: there must be balance between meeting the individual needs of the mentee and ensuring consistency within the mentoring process that will facilitate assessments and oversight of the stakeholders and their relationships, the mentoring process, the mentee's progress, and the mentoring support (2),
- g. Fit: a 'fit for purpose' of mentoring relationship involves due consideration of the anticipated trajectories of the mentoring relationships as adaptations are made to maintain balance. A 'fit for purpose' of mentoring relationship considers its potential effects upon the mentoring relationship and the mentoring outcomes if it proceeds along a specific trajectory. It also considers the impact of the new trajectory on CoPs and the mentoring framework further along the anticipated trajectory and the potential impact upon the hidden, informal, and formal mentoring curriculum, mentoring culture and the reputation of the mentoring program. (2),
- h. Ecosystem: encapsulating the centrality of mentoring relationships to the success of the novice mentoring process, its course through the various stages of the mentoring stages, the concepts of balance between flexibility to attend to the personalisation of the mentoring relationship and consistency built around the mentoring stages and the impact of personal and common competencies upon this balancing process is the mentoring ecosystem. The mentoring ecosystem is a theoretical framework that sees the influence of internal and external factors on the micro-environments of each stakeholder and the quality and nature of their interactions within the meso- and macro-environments providing a holistic perspective of the mentoring process and relationships (2).

3.1.2.15 The Iterative Process of SEBA

Scrutiny of the concept of the mentoring ecosystem suggests its role as an education tool to explicate the mentoring process to stakeholders and to help readers appreciate its complex nature (2, 33).

3.1.2.15.1 Mentoring ecosystem as an education map and tool

The mentoring ecosystem can plot the trajectory of particular mentoring relationships and thus serve as a “worksheet” for stakeholders to fill in after training (Figure 3.5, Figure 3.6, and Figure 3.7 as shown below) (2, 33).

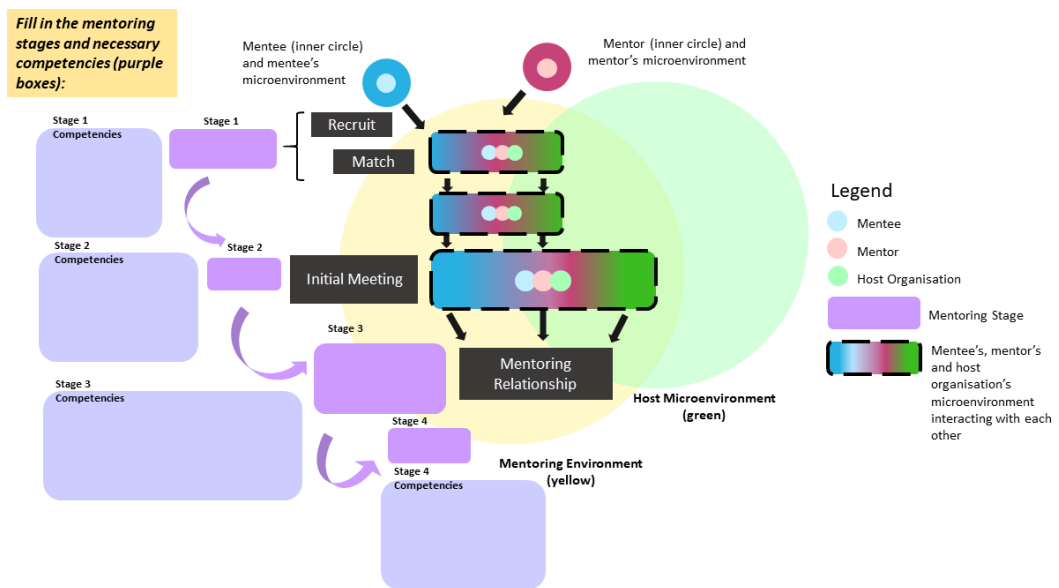


Figure 3.5: Mentoring Ecosystem as an Educational Map

This worksheet to be completed by each stakeholder within the mentoring ecosystem is seen as a means of reviewing individual goals, motivations, skills, attitudes, fears, experiences, knowledge and weaknesses (2, 15, 33). In addition in requiring individual stakeholders to consider their availabilities and evaluate their clinical, academic,

personal, research, professional, ethical, psychosocial, emotional, cultural, societal, legal and educational spheres and determine potential conflicts of interests, requirements and roles responsibilities and expectations that may impact their ability to participate in the mentoring relationship over the course of the mentoring relationship, it helps maps expectations and consider the support that may be required (2, 15, 33).

When shared amongst the other stakeholders this tool allows each stakeholder to appreciate the goals, motivations, availabilities, skills, attitudes, fears, experiences, knowledge and weaknesses and other considerations of other stakeholders (1, 4). This will thus help align expectations, establish general and specific/personalised competencies, expectations, roles and responsibilities (1, 4). It also allows stakeholders to set personal and common competencies and determine how best to assess these goals (1, 4).

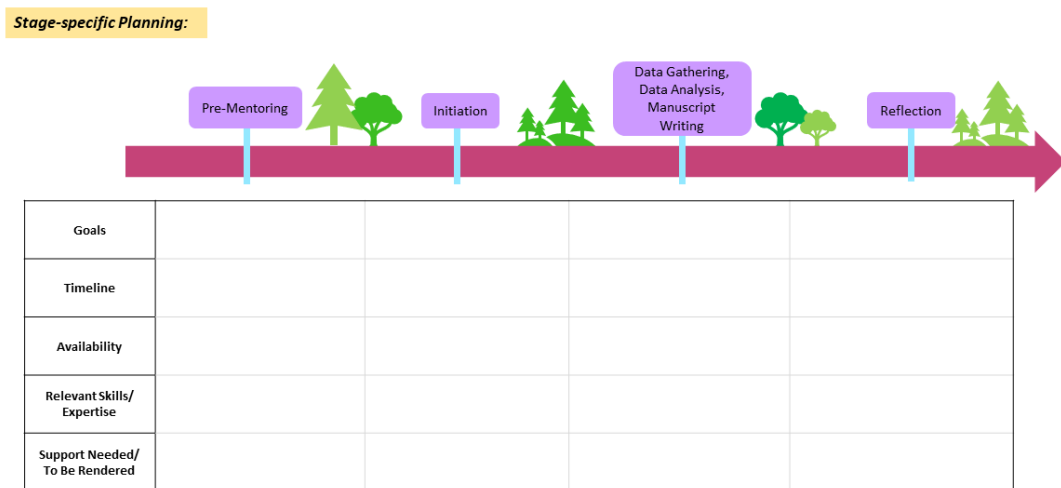


Figure 3.6: Mentoring Ecosystem as an Educational Tool

The worksheet featured in Figure 3.6 provides an opportunity to review and update individual circumstances and shared online so that the other stakeholders can act accordingly. It also provides a means of regular contact and assessment (2, 33). This aspect of the worksheet is updated before and after each meeting and underlines the makings of an online portfolio (2, 33).

The final part of the worksheet featured in Figure 3.7 allows the stakeholders to reflect upon each meeting or interaction and update their progress and considerations.

Reflection:
Points of Discussion

Figure 3.7 Mentoring Ecosystem as a Reflective tool

Overall, the worksheet allows stakeholders to consider general and specific issues relating to the mentoring process and alert them to potential breaches in CoPs such as (21-23)

- Lapses in the mentoring framework,
- Poor assessment and support of the mentoring environment,
- Inadequate support of the mentoring process such as insufficient time for mentoring and inadequate assessments,
- Ineffective alignment of expectations in the recruitment, matching and at changes in mentoring stages.

- Ineffective mentoring training, and or a lack of an accessible personalised longitudinal training and support program
- Inadequate matching
- Inadequate access to the program for women and mentees from minority groups
- Over-emphasis on clinical duties of the mentors and inadequate recognition for participation in the mentoring process
- Inadequate support from the host organisation and lapses in its ability to support and meet its various roles and responsibilities
- Failure to agree upon a cop and or a lack of or an inadequate set of COPs
- Poor policing of compliance of COPs
- Influence of the hidden and informal curriculum

Specific issues affecting the mentoring ecosystem include (21-23)

- Conflicts of interest
- Failure to meet milestones and competencies and the need for remediation
- Power differentials

I believe that awareness of general and specific issues will alert and better prepare stakeholders to address issues that may arise or even threaten the mentoring process (21-23). This could motivate stakeholders to redouble their efforts to hone a ‘mentoring friendly’ attitude (2, 17).

3.1.2.15.1.1 *The PMI as an educational framework*

In keeping with the desire to increase awareness and better account for potential sources of ethical issues in mentoring, experiences within the PMI itself can be seen as an educational tool. As a result, evolutions in practice within the PMI have been studied and published. Whilst the peer reviewed process provides a semblance of independent oversight of the PMI processes and having these accounts published helps provide some external validation of the methods and approaches used; I believe publishing my reviews also increased awareness of the concept of the Novice Mentoring and the PMI approach and gives some oversight to the changes instituted by the PMI's improvement program.

3.1.3 Conclusion

In addressing its research question, **“what is known of Novice Mentoring in Internal Medicine?”** and in identifying the key characteristics and the processes underpinning of Novice Mentoring in IM, this NR in SEBA sets forth several key findings that will alter the way Novice Mentoring is conceived and practiced.

These include the ‘fit for purpose’ matching aimed at building ‘fit for purpose’ mentoring relationships that proffer balance between flexibility and consistency (2). Other practice changing concepts include unravelling of mentoring’s nature and its implication upon mentoring research, the pivotal role of personalised and enduring mentoring relationships in mentoring success, competency based mentoring stages and the employ of these stages to provide holistic and longitudinal assessments of the mentoring process (1, 4). These facets lay the foundation for the proffering of the concept of the mentoring ecosystem that will pave the way to better appreciation of Novice Mentoring, its processes, the variety of influences upon it and better

appreciation of those facets within the mentoring ecosystem that predispose to ethical issues in mentoring that are relevant to Novice Mentoring (22).

In addition, this *sequential approach* via secondary/follow up study of mentoring in IM revealed similar themes and categories as those seen in the initial scoping review of accounts of Novice Mentoring in PM (50). These similarities add weight to my posit that it is possible to extrapolate data from Novice Mentoring in IM to Novice Mentoring in PM (50).

Finally, acknowledging that many of the accounts within the catch-all concept of ethical issues in mentoring are not relevant to the practice of Novice Mentoring but may in fact be concerns of specific forms of mentoring, I propose a review of prevailing accounts of ethical issues in mentoring. I believe armed with a better understanding of Novice Mentoring, I will be better placed to identify the specific ethical issues that impact Novice Mentoring. These insights will allow me to devise a means of addressing them.

Section 3.2: NR in SEBA on ethical issues in mentoring in Medicine and Surgery

3.2 Introduction

Straus *et al.* (125)'s, Soklaridis *et al.* (45)'s, Byerley (46)'s, Singh and Singh (44)'s, Straus *et al.* (223)'s, and Mistry and Latoo (215)'s accounts of ethical issues in mentoring, are agnostic to the specific mentoring setting. There is thus the need to study accounts of ethical issues in medicine and surgery to garner an effective understanding of ethical issues in mentoring. As a result, this NR in SEBA is guided by the research question, “**what is known about ethical issues in mentoring in surgery and medicine?**”. The PICOS is featured in Table 3.7.

Table 3.7: PICOS, inclusion criteria and exclusion criteria

PICOS	Inclusion criteria	Exclusion criteria
Population	Physicians, junior and senior clinicians Residents Adult Medicine/ Adult Surgery	Allied health specialties such as dietetics, nursing, psychology, chiropractic, midwifery, social work
Intervention	Mentoring by senior clinicians for junior clinicians	Non-medical specialties such as Clinical and Translational Science, Veterinary, Dentistry
Comparisons	None	N.A.
Outcomes	Attitude of Health Personnel Interprofessional Relations Ethical behaviour Professionalism Problems/ barriers of mentoring	N.A.
Study design	All study designs are included Descriptive papers Qualitative, quantitative, and mixed study methods	Role modelling, coaching, supervision and advising

	Perspectives, opinion, commentary pieces and editorials	
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From the independent searches 4006 titles were reviewed, and 151 articles were included and analysed using the Split Approach as shown in Figure 3.8.

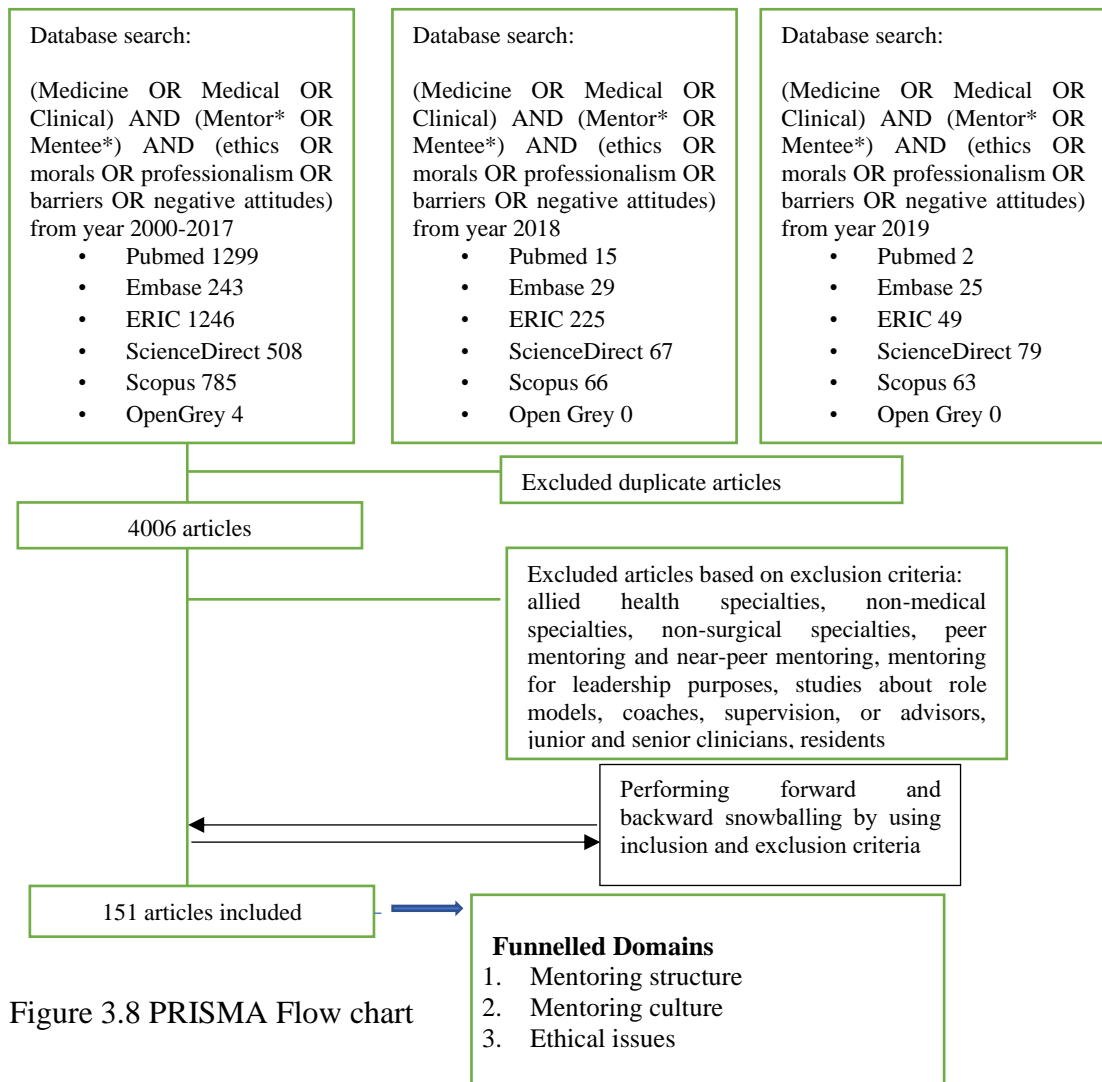


Figure 3.8 PRISMA Flow chart

3.2.1 Funnelled Domains and Sub-domains

The three funnelled domains found here are similar to those discussed in Section 3.1. Building on these, I will highlight new findings and gaps found in this NR in SEBA.

3.2.1.1 Issues with the Mentoring Framework

Lapses in the mentoring framework predispose to problems with both flexibility and structure (270, 341, 342). These lapses compromise progress through the various stages of the mentoring process (270, 341, 342), stifles mentee development (343), curtails trust and hinders the development of enduring and personalised mentoring relationships (270, 341, 342). Sachdeva *et al.* (265) report that poor matching in the surgical mentoring setting pits mentee against mentor for little available funding opportunities. Thapa *et al.* (344) and Srinivasan *et al.* (345) suggest that a lack of protected time also predisposes to competing interests with mentors balancing their clinical, academic, research and personal needs with their mentoring commitments. DeCastro *et al.* (342) report that a lack of ‘protected’ time hinders the provision of timely and personalised support for mentees. Kibbe *et al.* (313), Nguyen and Divino (346), and Thoma *et al.* (347) suggest that competition between mentee and mentor is not helped by a hierarchical environment especially evident within the surgical setting (250-252). The impact of these gaps in the mentoring framework impacts the mentoring environment and compromises the mentoring program as a whole.

3.2.1.2 Recruitment of mentees and mentors

There is little description of recruitment methods, with most accounts not delineating their practices nor the terms used in association with the recruitment process (37, 38,

52, 66, 221, 224-226, 233, 237, 243, 245, 329, 330). However poor recruitment (37, 38, 52, 66, 221, 224-226, 233, 237, 243, 245, 329, 330) and a failure to account for the mentee's working styles, preferences, timelines, availabilities, needs, motivations, abilities, experience, skills and goals (257, 266, 275, 303, 308, 313, 342, 348-351) precipitate a misalignment of expectations (277), a failure to agree upon common CoPs, failure to acknowledge the mentee's contributions to a project, illegitimate appropriation of the mentee's work and promotion of the mentors' work at the cost of the mentee (125, 242, 257, 272, 341, 352). These occurrences predispose to failed mentoring relationships and the exploitation of mentees (125, 242, 257, 272, 341, 352).

3.2.1.3 Assessment of recruits

Poor assessments of recruits exacerbate cultural, age and gender differences between mentee and mentor that could precipitate poor matches and strained mentoring relationships (257, 275, 353-355). Similarly, poor assessments of the recruit's needs, knowledge, skills, needs and goals as well as their motivations, collaborative abilities and willingness to accept feedback also weaken the alignment of expectations, training and preparation for the mentoring process (21, 22), create prejudices and biases that will negatively impact the mentoring relationship and culture (141, 199).

3.2.1.4 Mentee and mentor Training

Poor mentor and mentee training exacerbate gender based obstacles in mentoring (356-358) and predispose to sexist and racist beliefs (249, 359, 360), cause encroachments of personal (348) and professional boundaries (352), limit the development of mentoring relationships (223, 228, 274) and precipitate competition between mentee and mentor (125, 223, 228, 249, 272, 274).

3.2.1.5 **Matching**

There were no descriptions of the matching approaches though most accounts suggest the employ of criterion based formal matching processes. Inadequate matching processes precipitate personality conflicts (257, 265, 297, 299, 362-367), exacerbate of cultural, age and gender differences (257, 275, 353-355), misalign expectations (331, 334, 335, 368-372) and predispose to misunderstandings, prejudice and biases (331, 334, 335, 368-372). Lebowhl and Green (348), Larkin and Mello (352), and Jackson *et al.* (311) report that poor matching also precipitates power differentials. Straus *et al.* (223) and Sakushima *et al.* (274) report poor matching as a direct source of breaches in professional conduct whilst Ramanan *et al.* (207) and Sheikh *et al.* (229) suggest that poor matching leaves women and mentees from minority groups prone to abuse and bias.

3.2.1.6 **Poor longitudinal support**

Poor longitudinal support of the mentoring relationship, process and program predispose to a lack of protected time and failure to acknowledge mentoring roles and contributions (6, 17, 300, 373). A lack of protected time for mentoring (6, 17, 300, 373), over-emphasis on clinical duties of the mentors (257, 259, 275, 308, 333-335, 341, 354, 363, 365, 371, 374-390), prioritising clinical and research work in considerations for promotions (259, 355), poor appreciation of the mentor's contributions to the program (242, 391) and ineffective delineation of mentoring responsibilities (335, 339, 389) will result in competing interests (6, 335) and precipitate conflicting commitments amongst mentors (242, 334, 361, 384, 385, 389, 390, 392-394). These lapses, either on their own or in combination, will lead to unsustainable mentoring relationships (6, 265, 333-335, 344, 371, 372, 383, 385, 388, 389, 392, 394). Bhatia *et*

al. (329), Kashiwagi *et al.* (66), Gotterer *et al.* (226), Buddeberg-Fischer and Herta (52), and Miedzinski *et al.* (245) link these gaps to a failure on the part of the host.

3.2.1.7 **Codes of Practice**

There is no characterisation of CoPs (257, 352) however the data suggests that poorly delineated CoPs lead to conflicts of interest (303, 355, 365), exploitation of mentees, unethical behaviour (257, 352), lapses in professionalism (125, 242, 272), failure to acknowledge the mentee's contributions to a project, illegitimate appropriation of credit for the mentee's work (125, 249, 341), mentor use of mentoring relationships to promote their own agenda at the expense of the mentee's needs and goals (249, 270, 272) and increased competition with mentees (257, 265, 355, 365). Poor compliance of CoPs also predispose to breaches in professional boundaries (125, 249, 272, 352), compromise in communications, misalignment of expectations (331, 334, 335, 368-372), stifling of mentee development (343) and curtailment of trusting relationships (270, 341, 342) and predispose to power imbalances (356-358).

3.2.1.8 **Assessment methods**

There are no clear descriptions of the tools and or assessment methods employed. However frequent use of 'program specific' surveys (258, 277, 395) have contributed to prevailing gaps in the understanding of the mentoring process (52, 235, 244) and inadequate nurturing of the mentoring environment (237, 247, 277). Assessment gaps also precipitate a failure to address breaches or concerns within the informal and hidden curricula, the mentoring structure and the mentoring culture and direct appropriate and timely support to mentees, mentors and the mentoring program (14,

15, 33). Rothberg *et al.* (277) and Thomas-MacLean *et al.* (258) note that lacunae in assessment processes also compromise the balancing process.

3.2.1.9 Policing and oversight

Poor policing of compliance of the CoPs and the framework itself (256, 352) result in failure to meet the individualised needs of stakeholders and or failure to address breaches of the CoPs.

3.2.2 Role of the host organisation

The host organisation is charged with operationalising the mentoring structure and is thus involved in supporting the recruitment, vetting, training, matching and supporting mentors, mentees and their mentoring relationships and in setting the direction and tone of the mentoring approach and environment, establishing and policing compliance of CoPs and employing effective assessment processes (16, 52, 66, 226, 233, 245, 329). There is however no clear description of what the roles and constituents of the host organisation are though it is generally held to include the administrators, designers and the support team that design, structure and provide administrative, financial, creative and IT support for the mentoring program (6). Other roles are set out in Table 3.8.

The failure of the host to meet its roles and responsibilities is seen to result in mentoring failure (6, 265, 333-335, 344, 371, 372, 383, 385, 388, 389, 392, 394). These failures take a variety of forms. Failure to structure the mentoring process threatens the mentoring approach and limits the support of the mentoring relationship (38, 208, 224, 330, 345, 373). Inadequate access to the mentoring programs for

minority groups, women and less accomplished mentees, lead to conflicts of interest (303, 355, 365), exploitation of mentees, unethical behaviour (257, 352) and lapses in professionalism (125, 242, 272). Poor support of the mentoring program threatens the sustainability of the program and jeopardises the time, effort and money invested (38, 208, 224, 330, 345, 373) as do gaps in the oversight, assessment and feedback on the mentoring processes (38, 208, 224, 330, 345, 373). Overall, these lapses predispose to ethical issues in mentoring (331, 334, 335, 368-372) and raise concerns over the sustainability of a mentoring program (331, 334, 335, 368-372).

Table 3.8 outlines the role of the host organisation in the mentoring structure and culture.

Table 3.8. The role of the host organisation in the mentoring structure and culture

Mentoring structure	Purpose of action	Concrete actions to be taken by host organisation
Initiation	<ul style="list-style-type: none"> • Encourage collaborative efforts and foster a mutually beneficial mentoring relationship through matching of mentors and mentees • Align expectations and goals between mentor and mentee 	<ul style="list-style-type: none"> • Establish clear evidence based matching criteria (42, 258, 285, 332, 334, 335, 338, 339, 385, 387, 394) • Establish clear expectations, roles and goals of mentor and mentee (335, 336, 389, 396)
Support	<ul style="list-style-type: none"> • Provide holistic, longitudinal and financial support for mentorship, addressing competing priorities of mentors 	<ul style="list-style-type: none"> • Mentees: <ul style="list-style-type: none"> ○ Training for mentees prior to mentoring relationships (349, 397) • Mentors <ul style="list-style-type: none"> ○ Training for mentors prior to mentoring relationship (249, 398, 399) ○ Provide recognition for mentors in the form of formal evaluations, awards (242, 249, 385, 397, 400), financial incentives (334, 369, 383, 385, 397, 401) ○ Provide infrastructure and resources to support mentoring (285, 333, 337-339, 369, 372, 385, 389, 393, 396, 397, 401, 402) • Institution platforms for mentees and mentors to interact (403) • Offer longitudinal support throughout mentoring process (333, 368, 371) for both mentors and mentees • Support and funding for women in medicine programs (331)
Assessment	<ul style="list-style-type: none"> • To assess the quality of mentoring relationships 	<ul style="list-style-type: none"> • Ensure consistent, clear oversight of mentoring process (256, 352)

	<ul style="list-style-type: none"> To provide a platform to report ethical issues, in the face of power differentials and hierarchical work environment To enable timely interventions for lapses in professionalism 	<ul style="list-style-type: none"> Routine evaluation of mentor-mentee relationship to check for potential conflicts and a failing relationship (313) Special channels for the communication of gender-cultural prejudice issues (336)
Mentoring culture	Purpose of action	Concrete actions to be taken by host organisation
Guidelines	<ul style="list-style-type: none"> Provide clear direction and guidelines for a sustainable, ethical mentoring processes 	<ul style="list-style-type: none"> Establish clear practice guidelines and codes of conduct (249, 336, 352, 404), as well as clearly stipulated measures for breaches of code of conduct (352) Increased representation of minorities in leadership positions (334) Increased need for faculty leadership to recognize and support mentoring (260) Promote a culture of shared values regarding academic productivity contributions (276) Formal program to foster a culture of mentoring (405) Making mentoring a norm in every workplace (406)
Workplace policies	<ul style="list-style-type: none"> Increase priority and recognition for mentoring Address competing priorities to re-prioritise mentoring 	<ul style="list-style-type: none"> Incentivize teaching and mentoring (260) Provide protected time within work schedule for mentoring responsibilities (249, 272, 354, 374-376, 378, 397, 407, 408) Offer group mentoring (46, 285, 332, 334, 335, 339, 368, 369, 371, 385-387, 389, 390, 394, 404, 409) with interdisciplinary education (335-337, 339, 368, 369) Attention to mentoring in the evaluation of faculty and chairs (401) Provide awards that recognize mentorship to show that the institution values mentorship (397)

3.2.3 Mentoring culture

The impact of an ineffective mentoring culture has similarly concerning effects upon the mentoring program and its stakeholders. Yet these effects have not been described.

3.2.3.1 Issues with the formal curriculum

With no consistent definition, much is inferred about the formal curriculum. These include a failure to abide by declared working hours that result in intrusions of personal boundaries (334, 336, 398, 404) which exacerbates power differentials between senior and junior physicians (249, 270, 346, 410). This leads to poor compliance to agreed roles, responsibilities and mentoring commitments (223, 257, 299, 300, 367, 411), predisposes to the exploitation of mentees (388, 390, 393, 398) and threatens the mentee's professional development, goals and interests (338, 387, 390, 392, 394, 400, 404). The host organisation's failure to instil and police compliance of codes of conducts and standards of practice compound these concerns and lead to unprofessional (125, 242, 272, 336, 388-390, 392, 393, 404) and unethical (334, 336, 371, 372, 389, 390, 392, 404) behaviour amongst mentees and mentors (270, 334, 341, 342, 387, 389, 392) whilst its failure to inculcate practice principles and values lead to poor appreciation of the mentor's contributions (199, 249, 270, 412), discouraging mentor engagement (223, 257, 299, 300, 367, 411).

Similarly, a poor mentoring culture will also precipitate conflicts of interests as mentors place their personal and professional interests over their mentoring responsibilities (242, 334, 361, 384, 385, 389, 390, 392-394). This leads to competition for research resources (125, 249, 272) and authorship of publications (257, 265, 355,

365, 389, 398). Singh *et al.* (78), Soklaridis *et al.* (45) and Byerley (46) suggest that issues with the formal curriculum and culture may lead to physical and sexual bullying.

3.2.3.2 Issues with the informal and hidden curriculum

Whilst not defined, poor oversight and support of the informal and hidden curricula, negatively shape mentees' and mentors' practice, values and beliefs and may propagate ethical issues in mentoring (6, 265, 333-335, 344, 371, 372, 383, 385, 388, 389, 392, 394). Minority groups and women are especially susceptible to these issues (207, 229, 257, 275, 331, 334, 335, 363, 368, 370-372, 384, 390, 392, 398, 404, 408, 409, 413) as psychosocial and race-related issues (249, 331, 334, 335, 340, 359, 360, 368, 372, 390, 402, 409, 413), efforts to balance family (331, 340, 372, 385, 387, 402, 413) and career priorities (331, 334, 335, 340, 394, 402, 404, 409, 413, 414) are neglected.

3.2.4 Synthesis of the NR in SEBA

In keeping with the sequential approach adopted by this thesis and drawing upon insights and common definitions of various aspects of Novice Mentoring drawn from the NR in SEBA in Section 3.1, this NR in SEBA suggests that ethical issues in mentoring arise from lapses in the mentoring structure at the level of the host organisation, the mentoring culture and the mentoring framework (2, 15, 19) and is primarily the result of poor support of the mentoring ecosystem (15).

3.2.5 Ethical issues in mentoring from the lens of the mentoring ecosystem

Building on descriptions of key elements of the mentoring process drawn from the NR in SEBA of Novice Mentoring in Section 3.1, I will explain the presence of ethical issues in mentoring using a rudimentary concept of the mentoring ecosystem drawn exclusively from data from this NR in SEBA (Figure 3.9). I will delineate this theoretical concept below.

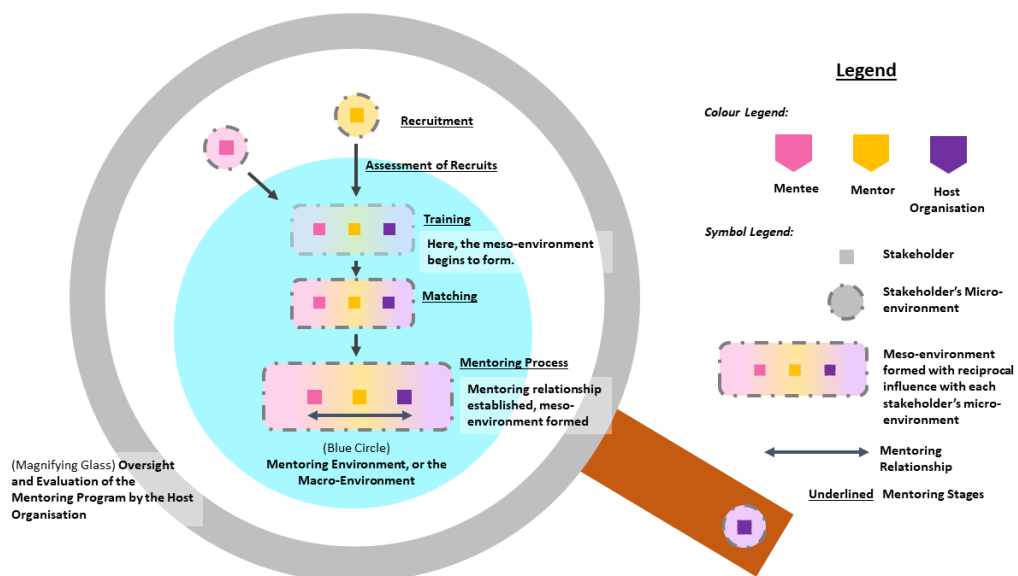


Figure 3.9: Micro-, Meso- and Macro-environments

In answering its research question, “**what is known about ethical issues in mentoring in surgery and medicine?**”, this NR in SEBA suggests that ethical issues in mentoring are the result of poor structuring, support, and oversight by the host organisation which predispose to breaches in the CoPs, mentoring culture and the mentoring framework (2, 15, 19). At the heart of the host organisation’s lapses is a failure to consider mentoring as a sociocultural construct and its wider ramifications

upon stakeholder micro-environments and the mentoring ecosystem (4, 43). Poor structuring (15) and ineffective mapping of the micro-, meso and macro-environments leads to inadequate longitudinal support and oversight of the mentoring ecosystem (2).

These gaps may manifest at any stage of the mentoring ecosystem. Inadequate assessment of individual microenvironments and a recruit's motivation, experience, skills, biases, prejudices, attitudes, goals, perspectives, preferences, principles, objectives, and values at the micro-environment level may result in a failure to identify traits that are not consistent with the overall goals of the mentoring program and raise the risk of breaching professional boundaries (125, 249, 272, 352). Poor consideration of the mentoring micro-environments at recruitment also compromise communications, misalign expectations (277), stifle mentee development (343), curtail the development of trusting relationships (270, 341, 342) and predispose to power imbalances (356-358).

Similarly failure to instil the mentoring program's values, principles and practices, institute a consistent CoP and training program for stakeholders (20, 266, 313, 354, 363, 365, 381-383, 408, 415) predisposes to breaches in personal and professional boundaries (125, 249, 272, 352), gives rise to inappropriate competition (6, 335) and conflicts of interest (242, 334, 361, 384, 385, 389, 390, 392-394) between mentee and mentor (125, 249, 272), and potentiates culture-, age-, gender- and race-related mentoring issues (356-358) in the meso-environment. Underlining the importance of effective assessments at recruitment and the implications of poor selections further into the mentoring process, these findings underscore the interconnectedness of the micro and meso-environment (33).

Building on a rudimental concept of a ‘fit for purpose’ matching process and the impact of ineffective assessments of the mentoring program, environment and stakeholders and their mentoring relationships reaffirms the notion of a ‘fit for purpose’ mentoring relationship and underpins the forwarding of a rudimentary concept of mentoring ecosystem (18) (Figure 3.9). Here the CoPs that confine and guide assessment of the mentoring ecosystem are depicted as dotted lines representing the borders of micro, meso and macro-environments underlining their co-dependent nature set (42, 256, 258, 270, 285, 332, 334, 335, 338, 339, 352, 385, 387, 393, 394, 416). The magnifying glass underlines the host organisation’s role and failures in establishing a consistent mentoring approach; shaping the mentoring stages; policing CoPs; supporting the matching, the mentoring processes and the mentoring framework; and nurturing the mentoring environment within the ecosystem (417-419) which may jeopardize mentoring relationships and result in ethical issues in mentoring. These may include intrusions of personal and professional boundaries, bullying, discrimination, misappropriation of mentee’s work and even accounts of physical and verbal abuse (21-23).

3.2.5.1 Broadening Dolan and Johnson’s concept of ethical issues in mentoring

In this light, I believe a re-evaluation of Dolan and Johnson (49) concept of ‘ethical issues in mentoring’ which presupposes that all forms of mentoring ‘misuse’ (23), ‘misapplication of mentoring’, ‘mentoring abuse’ and irregularities in mentoring can be traced to five ‘tensions’; is required (47, 48, 77). These include maintaining some hierarchy within the mentoring relationship without hindering the building of open relationships between mentees; balancing research productivity with a commitment to

training; maintaining equilibrium between the needs of the mentee and the mentor; ensuring equity in recognizing the efforts of mentees and mentors; and assessing the motivations of mentees and mentors.

PMI-led review of ethical issues in mentoring in surgery, IM and medical schools suggest that ethical issues in mentoring extend beyond Dolan and Johnson (49)'s 5 'tensions'. However, whilst Lee *et al.* (21) found that ethical issues in mentoring in surgery arise due to a poor mentoring environment and insufficient mentor training; Cheong *et al.* (22) found ethical issues in mentoring in the IM setting arose from poor recruitment and preparation of stakeholders, misalignment of expectations and ineffective support of the mentoring program and Kow *et al.* (23)'s review of ethical issues in medical schools revealed issues in the structuring, assessing and support of the programs there are some similarities with Dolan and Johnson (49)'s five 'tensions'.

To begin, inadequate 'protected time' for mentoring and ineffective safeguards against competing interests do heighten concerns over efforts to balance productivity with commitments to train mentees and mentors. Concurrently evolving mentoring micro-environments (2, 15) challenge efforts to maintain equilibrium between the needs of the mentee and the mentor (49). The data also reaffirms that hierarchy within the mentoring process persists (6) in part given the mentor's continued role as assessors of the mentoring relationship and their mentee's progress (33), in policing CoPs (19), and in providing appropriate, specific, timely feedback and longitudinal and holistic support and feedback (1, 4). This hierarchy is especially evident in research and clinical mentoring where it is the mentor who must ultimately appraise mentee contributions and compliance to ethical and professional codes of conduct (20). Data

in mentoring in clinical research also suggests research deadlines and competing clinical work frequently impact balance between research productivity and training commitments and equity in recognizing mentee and mentor contributions and needs (1, 4).

However, Lee *et al.* (21)'s, Cheong *et al.* (22)'s and Kow *et al.* (23)'s PMI-led reviews also reveal other sources of ethical issues in mentoring not considered within Dolan and Johnson (49) concept of 'ethical issues in mentoring'. These include evidence of poor structuring of the mentoring approach including poor matching and training processes, ineffective provision of prompt, accessible, individualised, and comprehensive feedback to stakeholders and inadequate support of their mentoring relationships and the mentoring processes that guide them which predispose mentoring relationships to potential breaches in the codes of practice, the possibility of a misalignment of expectations and the likelihood of an inevitable compromise of the mentoring relationship. These factors suggest that Dolan and Johnson (49)'s concept requires re-evaluation. To begin, it fails to appreciate the presence of a variety of distinct mentoring approaches (such as youth, patient, family, adolescent, leadership, group, mosaic, interprofessional, peer, near peer, novice, and e-mentoring) (47, 48, 77) and the mistaken intermixing of mentoring approaches with discrete practices such as supervision, coaching, role modelling, networking, advising and supervision (6, 50) that cloud understanding of the concerns particularly when each form of mentoring may be prone to different forms of ethical issues (6, 23, 50).

For example, peer mentoring such as that discussed in Dolan and Johnson (49)'s study, often lacks a formal structure, oversight and is reliant on a shared understanding of the

goals, roles, responsibilities, expectations, and codes of conduct (50) and thus prone to competing interests, difficulties in recognizing the contributions of mentees and mentors and maintaining equilibrium between the needs of mentees and mentors. E-mentoring on the other hand comes with clear codes of conduct, established roles, responsibilities and timelines and oversight by third parties (32, 57) yet is prone to impinging on off duty hours and weekends (32). These considerations suggest that efforts to understand ethical issues in mentoring should be context and setting sensitive and should be confined to a specific form of mentoring (22, 50).

3.2.6 Solutions to ethical issues in mentoring

Current reports of ethical issues in mentoring suggest that most ethical issues in mentoring may be traced back to lapses in the mentoring framework and the CoPs (21-23). In the interest of time and space, I summarise proposed solutions to the ethical issues in mentoring in Table 3.9.

Table 3.9: Recommendations to addressing ethical issues in mentoring

	Problem	Recommendation
Mentor	Inadequate mentorship training	1. Program for mentor development/ official training for mentors (313, 381-383)
	Surgical training emphasizes on achieving clinical competencies	1. Dedicated mentoring programs to help mentees deal with challenges apart from clinical competencies e.g. flexibility to adapt to constantly changing health delivery models and workplaces and societal demands for greater accountability (383)
	Unable to cater to all needs of mentee	1. Paradigm for online mentoring to have a network of mentors to meet mentee's varied needs (381) 2. Multiple mentors for mentee (257, 275, 303, 313, 350)
	Lack of experience	1. More programmatic structure and enhanced mentor training/ workshops (259, 365)

	Common personality traits antithetical to that of a good mentor	<ol style="list-style-type: none"> 1. Better matching 2. Better training of mentors
Mentee	Perception that seeking mentors is a sign of weakness	<ol style="list-style-type: none"> 1. Institutions should work to dissuade this misconception and provide resources to bring mentors and mentees together. The relationship can be initiated either by the person or through a mentoring program. (355)
	Have little professional contact	<ol style="list-style-type: none"> 1. Provide formal training to mentees to teach them how to choose a mentor (313) 2. In the process of seeking mentors, potential mentees to research departmental websites, talk to other students and evaluate a potential mentor's interactions with peers and medical students during teaching conferences or on rounds (257) 3. Mentor facilitates invitations to social functions and assist in forming professional relationships in the institution and at the national level. (257) 4. Senior mentoring to broaden mentee's network (303) 5. Formal mentoring programs which facilitate exposure between students and potential mentors. (299, 300, 355) 6. Speed-mentoring program (423) 7. Providing students with chances to assist in the operating room and shadowing opportunities to potentially developing a mentoring relationship (367)
Host organisation	Lack of mentors	<ol style="list-style-type: none"> 1. web based system for "pairing" of appropriate mentors and mentees and virtual telementoring system (381, 424) 2. Identify a number of people with the skills and motivation to be mentors, personality and enthusiasm for the process thereby creating a pool from which to draw upon. (383) 3. Co-mentoring, "mosaic mentoring," a "collaborative" framework of mentoring (also called peer-group mentoring), and long-distance mentoring can be successful when clear roles and goals are established for each mentor relationship. (257, 367)
	Lack of same sex mentors	<ol style="list-style-type: none"> 1. Important for both mentor and mentee to reconcile their differences to avoid problems between the 2 parties; Understanding all of these differences will allow a surgeon to mentor any surgical trainee that they are approached by, independent of gender, age, or race. (354)

		2. Recruit additional experienced female surgeons for the mentor pool; several other programs have been specifically designed to address the needs for this growing demographic (365)
	Lack of institutional support	<ol style="list-style-type: none"> 1. Design a dedicated mentoring program (381) (300, 313, 383, 423) 2. Define a set of standardised criteria for mentoring schemes (265, 303, 383) 3. Pairing of mentors and mentee (303, 313, 383, 423) 4. Training of mentors (259, 265, 303, 313, 365, 383, 423) 5. Training of mentee (303) 6. Clarification of goals and roles e.g., mentor-mentee contract (259, 303, 313, 365, 383, 423) 7. Monitoring and evaluation (259, 265, 303, 383) 8. Give financial incentives to mentors (313, 383) 9. Reward mentors academically e.g., awards for excellence in mentoring, consideration in the promotion application e.g., in University of California, San Francisco where mentoring is recognized as equivalent to teaching in the promotion process, and faculty are required to describe their mentoring activities in their curriculum vitae (313) 10. Provide incentives such as recognition for mentors (299, 313, 355, 423) 11. Institution to provide economic support for mentorship program (313, 423) 12. Protected time for mentoring ... Protected time may allow for mentor development activities e.g., lack of skills in mentoring (299, 300, 308)
	Self-identification against formal assignment of mentors	<p>To improve mentorship experience regarding self-identification of mentors:</p> <ol style="list-style-type: none"> 1. Structuring the mentoring relationship with contracts, planned meetings, and anticipated benchmarks together with aligning mentor and mentee expectations (381) <p>To improve mentorship experience regarding assignment of mentors:</p> <ol style="list-style-type: none"> 1. Department chair helps the mentee to identify a mentor, supporting a natural, unforced process. (313) 2. Allowing residents to choose their own mentors could improve the mentoring experience (297) <p>Mixture of both:</p>

		1. Mentorship relationships that encompass both a formal program with additional informal relationship building. (259, 275, 299, 303, 382)
Relational	Difference in culture and gender of mentor and mentee	<ol style="list-style-type: none"> 1. Miscommunications due to differences between mentor and mentee can be avoided by establishing and clearly defining goals and objectives of the relationship. (382) 2. Mentors must maintain cultural and gender sensitivity toward mentees (257, 355) 3. Good communication and being perceptive to the possibility of misinterpretation, or misunderstanding, (275) 4. Matching cross-cultural mentor partnerships can be circumvented through modern communication technology, enabling a mentee to communicate with a compatible mentor regardless of distance, at a mutually acceptable time. (275) 5. Match mentees with mentors based on certain attributes e.g., racial, ethnic, religious, and gender differences (355)
	Generational gap	1. Important for both mentor and mentee to reconcile their differences to avoid problems between the 2 parties; Understanding all of these differences will allow a surgeon to mentor any surgical trainee that they are approached by, independent of gender, age, or race. (354)
	Power differential	<ol style="list-style-type: none"> 1. Proper oversight to avoid abusive situations. (313) 2. Mentors should support mentees through a collaborative partnership where neither party has power over each other. (303)
	Personality conflict	<ol style="list-style-type: none"> 1. Speed-dating to match interests of mentors and mentees (308, 423) <ol style="list-style-type: none"> a. Event participants were much more satisfied with their mentorship pairing than those who did not attend. We examined which characteristics were important to residents in choosing a mentor. The most important characteristic was found to be similar interests. (308) b. Our data demonstrate that speed mentoring has the potential to facilitate mentor-mentee pairing among practicing surgeons and trainees.(423) 2. Self-selection of mentors by mentees <ol style="list-style-type: none"> a. 65% of the respondents who selected their own mentors reported that an element in their selection of a mentor was finding one with similar interests. Importantly, those who selected their mentors were more satisfied with their mentoring experience. (259) 3. Point out strengths and weaknesses of resident in a positive manner, give early and definitive feedback,

		ask residents their short- and long-term career plans, to establish a stronger rapport with residents and build on their strengths. (362)
		4. Personality assessment can enhance the mentoring relationship by evaluating the protégé or trainee in terms of both positive and negative traits, drivers, and potential pitfalls, helping the mentor focus his or her efforts on specific areas. It can provide a guide for addressing problems and become an additional tool in the training process. (366)
	Lack of time	<ol style="list-style-type: none"> 1. Greater emphasis and support at the institutional level are needed to address the issues of time (382) 2. Give financial incentives to encourage mentors to make time (383) 3. Formally adding time to meet with mentees to the mentor's schedule (and reducing obligations elsewhere). (354) 4. Challenges of time constraints can be circumvented through modern communication technology, enabling a mentee to communicate with a compatible mentor regardless of distance, at a mutually acceptable time. (275)

The various solutions proffered reaffirm my posit that focusing suggestions upon ensuring a consistent mentoring approach, framework, support and oversight is vital (21-23). It is also here that the critical role of the host organisation in supporting and overseeing the mentoring process becomes clear.

3.2.7 Comparing the Narratives – Discussions with key stakeholders and the expert team

Highlighting an oft ignored aspect of the SEBA methodology, the findings of the NR in SEBA on ethical issues in mentoring were discussed with the research and expert teams. This underlines having Stage 6 of the SEBA methodology linked to Stage 1. This process was particularly enlightening highlighting similarities between the NRs

in SEBA in Novice Mentoring and ethical issues in mentoring and verifying the concept of the mentoring ecosystem. It was also clear that most accounts of ethical issues in mentoring were focused upon specific issues and were often lacking details on the mentoring processes and approach employed (21-23). As a result, I reviewed the key publications categorised under the aegis of the ethical issues in mentoring. These include Soklaridis *et al.* (45)'s and Byerley (46)'s accounts of mentoring in the #MeToo Era; Singh and Singh (44)'s and Mistry and Lato (215)'s general review of ethical issues in mentoring; and Straus *et al.* (223)'s and Straus *et al.* (125)'s evidence based accounts of ethical issues in mentoring.

**3.2.7.1 Soklaridis, Zahn's Men's Fear of Mentoring in the #MeToo Era—
What's at Stake for Academic Medicine? And Byerley's Mentoring in
the Era of #MeToo.**

Perhaps one of the most significant articles on the topic of ethical issues in mentoring is Soklaridis *et al.* (45)'s article on the fear of "*false allegations of sexual misconduct that could compromise their reputations and end their careers, even if they were found to be innocent*" (45), page 1) amongst male mentors. This theme is echoed in several other articles but stands out as the article that has drawn the most attention to these concerns (425-427). The authors who are women at the pinnacle of their professions and specialities lament the withdrawal of mentoring support by male mentors over fears of potential accusations of improprieties (45, 425-427). On the surface, the authors acknowledge the undoubted loss of support but also underline the fact that these actions deflect attention from bigger issues in the medical profession (45, 425-427). The authors emphasise that a failure to acknowledge that it was the presence of 'institutional' sexism that birthed this social justice and empowerment movement

against sexual abuse and sexual harassment in medicine (45, 425-427). The authors also suggest that much more needs to be done to enhance efforts for gender equality in the field, underlining the need for more mentoring support (45, 425-427). In doing so, the authors provide a general discussion of the mentoring culture in American medical scene.

Providing a similar account, Byerley (46) reflected upon her male mentors whom she felt supported her own development. She suggests that her male mentors had five characteristics in common – they displayed professional behaviour and a sense of decorum, acted with integrity and propriety, did not engage in physical contact nor discussions of appearance, maintained contact only with regards to work, and stood up for women. These insights were useful in reviewing and updating prevailing CoPs and clarifying the roles and responsibilities of stakeholders.

However, whilst thought-provoking and eye opening in landscaping the potential for ethical issues in mentoring and helping to focus attention upon Novice Mentoring practice, both accounts were vague. There was no description of the mentoring approach employed nor the goals, setting and duration of the mentoring interactions (45, 46). Whilst both accounts seem to refer to use of informal mentoring focused upon general professional development rather than then structured research based mentoring, the generalisations to mentoring as a whole are concerning and lack details on the support, training and oversight of the mentors and mentees (45, 46). They are also silent on the role of the host organisation and on the stages of their respective mentoring processes (45, 46). Rather what was proffered were opinions about mentoring in general.

The ambiguity of the program descriptions and the concerns raised are critical as to how these issues may be better understood and addressed. Awareness of the relevance of these issues to various forms of mentoring is also important even as there is growing use of e-mentoring and peer mentoring in tandem with Novice Mentoring and recognition of the impact of different mentoring goals and structures have upon the mentoring approach and upon the mentoring ecosystem (43).

3.2.7.2 Mistry and Lattoo's Bullying: a growing workplace menace and Singh and Singh's Abusive culture in medical education. Mentors must mend their ways.

In their commentaries, Singh and Singh (44) and Mistry and Lattoo (215) discuss various forms of harassment and bullying in medicine and the professional workplace with no delineation of mentoring approach, structure nor the mentoring environment. The specific setting and specialities are also not established and overall, both accounts could be taken as an effort to raise awareness of the need for oversight, clarity of roles and expectations and the need for a structured approach as potential sources for ethical issues in mentoring.

3.2.7.3 Straus, Johnson's Characteristics of successful and failed mentoring relationships: a qualitative study across two academic health centers and Straus, Chatur's Issues in the Mentor-mentee relationship in academic medicine: a qualitative study

In discussing the characteristics of a failed mentoring relationship, Straus *et al.* (223) conducted individual, audiotaped semi structured interviews with faculty members from different career streams and ranks and analysed transcripts of 54 interviews,

using the grounded theory. The authors identified “*poor communication, lack of commitment, personality differences, perceived (or real) competition, conflicts of interest, and the mentor’s lack of experience*” (223), page 7). These factors precipitated “*failure to obtain a grant, failure to retain a promising junior faculty member, and inability to maintain a relationship with the mentor leading to lack of collegiality in the department*” (223), page 7). Alluding to a formal and structured Novice Mentoring program, the precise details of the program were lacking.

In another qualitative study of clinician investigators in Canada, Straus *et al.* (125) carried out semi structured interviews with 21 mentees and the seven senior mentors the mentees identified. All seven mentors were male. This study revealed that time constraints, a lack of academic and professional recognition for mentoring efforts and a lack of training were key barriers to effective mentoring. These factors predisposed to “*blurred lines between the intellectual property of the mentor and mentee*” (125), page 137). Perhaps more telling was the fact that there was a lack of recognition on the part of the mentees and mentors of the full gamut of roles and responsibilities of the latter. Focus was instead upon the mentor as a ‘protector’ or ‘advocate’ which left the authors suggesting that this may be the result of poor role modelling (125).

3.2.8 Iterative discussions with local experts

Overall, the paradigm papers reviewed relay growing concern for the potential for ethical issues in mentoring, yet reveal a scarcity of details on the exact nature of mentoring adopted, the contextual factors, goals, support structures and assessment methods employed (4, 125). These findings reaffirm my fear that in many cases, these fears arise because of incomplete understanding of the mentoring process and

approach employed (4). This situation is further complicated when details about the mentoring issues are missing or glossed over (4).

Following consultations with local clinical and education experts and tutors, I compared these paradigm articles with those identified by the local experts as ‘practice influencing’ publications and found that there was general concurrence in the identified articles and in their conclusions. Yet this also highlighted several features to be considered. One, most accounts did reveal a lack of descriptions of the type of mentoring approach, structure, framework and mentoring setting being discussed (22, 23). Two, many accounts of ethical issues in mentoring appear to be opinion based pieces lacking reproducible evidence for the positions taken by the authors (44, 46). Three, the Funnelling Process re-emphasises the fact that the findings of this SEBA represents an amalgam of many different accounts which when considered individually lack evidence and context (23). Four most accounts drew on poor primary mentoring data (1, 4).

3.2.9 Conclusion

In answering its research question, which was “**what is known about ethical issues in mentoring in surgery and medicine?**”, this NR in SEBA of ethical issues in mentoring suggests that the primary threat to mentoring arises from gaps in the mentoring framework and the CoPs, though the impact of stakeholder training and the mentoring culture cannot be discounted (15). Furthermore, it is suggested that these issues and their impact may be better understood through the lens of the mentoring ecosystem (2, 20).

3.3 Section 3.3: SSR in SEBA of Mentoring Structures

3.3.1 Introduction

With Sections 3.1 suggesting that the biggest threats to Novice Mentoring in medical education is the need to address the threat of ethical issues in mentoring and to address the concerns that have stemmed from them and Section 3.2 identifying the mentoring framework and CoPs as a primary source of ethical issues in mentoring, this section will look to scrutinise accounts of these elements of the mentoring structure in keeping with the sequential and reiterative processes within the SEBA methodology.

Here, I will carry out an SSR in SEBA of CoPs and an SSR in SEBA of mentoring frameworks. However rather than combine these findings to create a NR in SEBA of mentoring structures, I will for the sake of time, space, and the desire to minimise repetition combine them directly with the NRs in SEBA in Section 3.1 and 3.2 in Chapter 4.

3.4 Review of Codes of Practice in Novice Mentoring

This SSR in SEBA is guided by the research question, **“what CoPs exist to guide roles and responsibilities, conduct and practice standards in Novice Mentoring programs?”** and further question, **“what characteristics, values and behaviours of mentors, mentees and host organisations are highlighted within prevailing CoPs?”**. The PICOS adopted is featured in Table 3.10.

Table 3.10: PICOS, inclusion criteria and exclusion criteria

PICOS	Inclusion Criteria	Exclusion Criteria
Population	<ul style="list-style-type: none"> • Medical students • Junior clinicians • Residents • Senior clinicians 	<ul style="list-style-type: none"> • Allied health specialties such as dietetics, nursing, psychology, chiropractic, midwifery, social work • Non-medical specialties such as Clinical and Translational Science, Veterinary, Dentistry
Intervention	<ul style="list-style-type: none"> • Novice Mentoring by senior clinicians for junior clinicians and or medical students 	<ul style="list-style-type: none"> • Peer mentoring, near-peer mentoring, mentoring for leadership, mentoring patients or mentoring by patients • Role modelling, coaching, supervision and advising
Comparison	<ul style="list-style-type: none"> • None 	
Outcome	<ul style="list-style-type: none"> • Attitude of Health Personnel • Interprofessional Relations • Ethical behaviour • Professionalism • Problems/ barriers of mentoring 	
Study design	<p>All study designs are included:</p> <ul style="list-style-type: none"> • Descriptive papers • Qualitative, quantitative, and mixed study methods • Perspectives, opinion, commentary pieces and editorials 	

There were 128 articles included in this review. Of those, 29 were quantitative, 23 qualitative and 19 were mixed methods studies. There were also 24 descriptive accounts, 32 opinion pieces and 1 conference report. 17 involved the mentee's accounts only, 18 involved the mentor's perspective only and 93 had input from mentees and mentors. This is illustrated in the SEBA adapted PRISMA featured in

Figure 3.10.

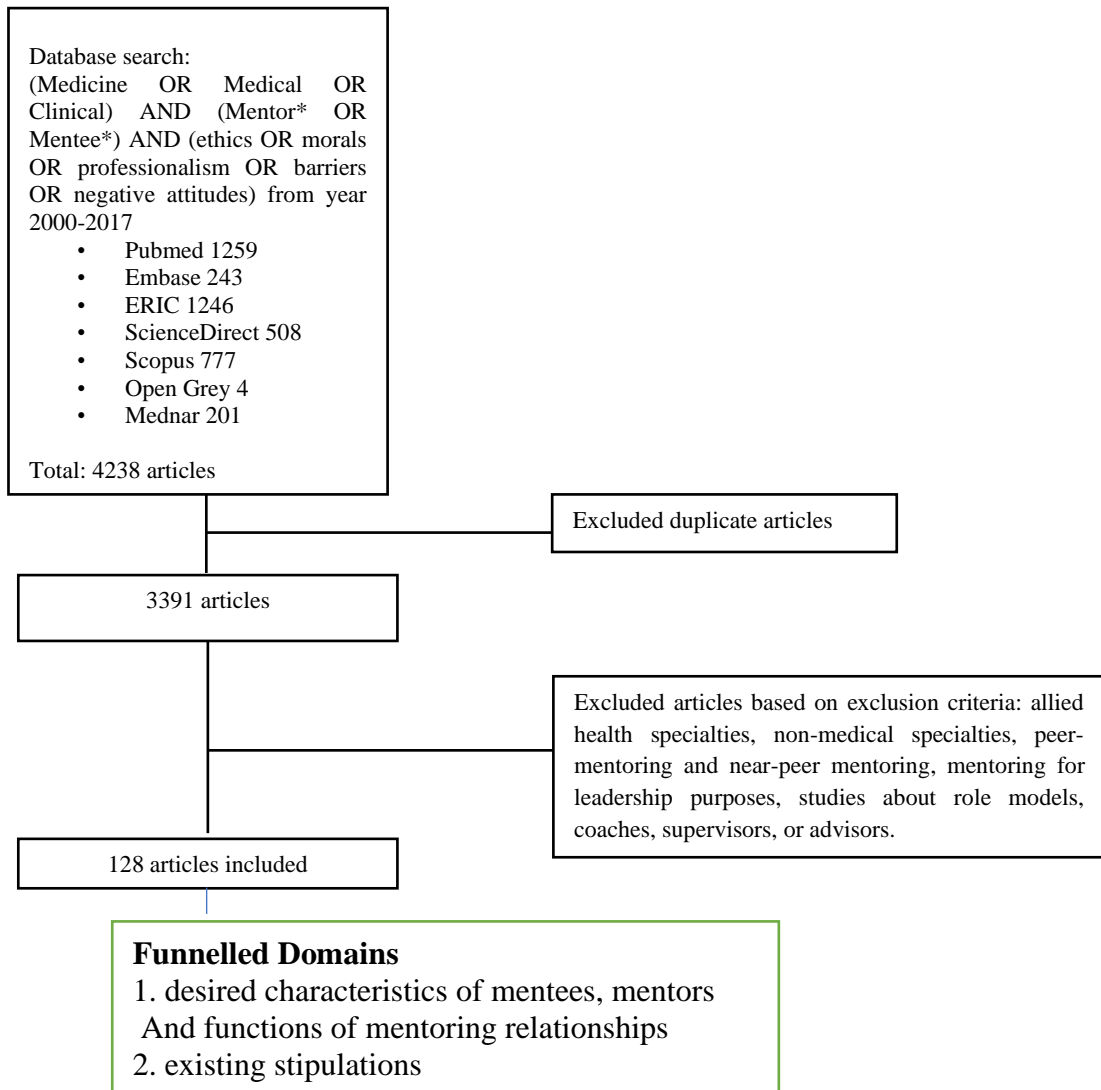


Figure 3.10: PRISMA Flow chart

3.4.1.1 Desired characteristics

All 128 articles listed and did not discuss the desired characteristics of mentees, mentors and the functions of mentoring relationships. In the interests of time and easy review I have compiled these findings in Table 3.11.

Table 3.11: Desired Characteristics of mentors, mentees, host organisations and mentoring relationships

Mentor	Mentee	Relationship	Host organisation
<ul style="list-style-type: none"> • Humble • Well-rounded • Open to learning • Open to self-improvement • Gain mentee’s trust • Generous • altruistic • Genuine interest in mentee • Competent • Approachable • accessible • Compassionate • Belief in mentee’s abilities • Honesty • Good communication skills • Active listener • Respectful • Understanding • Emotionally intelligent • High moral standards • High professional standard • Patient • Flexible 	<ul style="list-style-type: none"> • Honest • Good communication skills • Respectful • Understanding • Reliable • Courage to take risks • Accepts challenges • Passion • Drive to succeed • Confidence • Responsible • Committed • Diligent 	<ul style="list-style-type: none"> • Complementary personalities • Personal connection • Trust • Accountability • Compatible career goals, lifestyle, values • Learner-centred • Commitment • Dynamic • Familiarity • Proximity • Minimal hierarchy • Open and honest dialogue • Early identification of goals, expectations • Confidentiality • Mutual respect • Reciprocity 	<ul style="list-style-type: none"> • Supportive

3.4.1.2 Existing Stipulations and Ethical requirements

Existing stipulations may be divided into three subthemes – mentor, mentee, and host organisation. These aspects which are only briefly discussed in prevailing studies and have thus been compiled in Table 3.12.

Table 3.12: Existing Stipulations of mentors, mentees, and host organisations

Mentor	Mentee	Host organisation
<p>Set up and align expectations to prevent mismatch of interests and goals.</p> <p>Foster open communication and exchange of ideas by ensuring a polite, respectful and confidential environment.</p> <p>Assess and identify mentee's strength and weaknesses and adjusted their approaches to best suit their needs.</p> <p>Be a source of clinical, academic, emotional, career, professional and personal support, and a role model.</p> <p>Must make themselves available to their mentees and establish clear instructions on communication approaches, the frequency of meetings, and timelines for a response.</p> <p>Give confidential and constructive feedback to maximise mentee growth and facilitate effective remediation of unprofessional behaviour.</p>	<p>Articulate their goals, values and needs when establishing their roles and responsibilities, and their expectation of mentors to aid their alignment of expectations.</p> <p>Take feedback and advise positively, reassess strengths and weaknesses, and learn from their mistakes.</p> <p>Take the initiative in driving their relationships, be adaptive, be active in setting meeting agendas, and in meeting roles and responsibilities.</p>	<p>Support mentor training programs and workshops to improve mentoring skills.</p> <p>Monitor the progress of mentoring.</p> <p>Set out protected time for mentoring, within a structured mentoring programme and incentivise mentoring through monetary compensations or promotions for faculty.</p>

3.4.1.3 Core aspirations

In most cases mentoring guidelines are limited to a list of desirable behaviours and characteristics amongst stakeholders and mentoring relationships. I refer to these lists as 'core' aspirations. These 'core' aspirations appear focused upon informing stakeholders and program designers and administrators of the basic requirements for

an effective mentoring program. These general features would also be applicable in any healthcare setting and system.

Thus 'core' aspirations play a number of critical roles informing the

1. Recruitment and vetting of mentees and mentors (1, 2)
2. Selection and often design of vetting and selection tools for mentees and mentors (18)
3. Minimum standards of practice (21-23).
4. Minimum competency levels for mentors in communication, supporting, mentoring and assessment processes (20)
5. Core elements that must be included in the design, expectations, curriculum and assessment of mentor training programs (20, 428, 429) and mentee preparation (1, 2)
6. Selection of the mentoring approach to be employed, the guiding principles to be applied (2), and the processes to be evaluated and supported to achieve the desired level of functioning (19, 33)
7. Synchronisation of the mentoring process with continuing professional development curriculum and the professional development of mentees and mentors (2)
8. Longitudinal support and oversight of the mentoring relationships (5, 6)

'Core' aspirations also serve to highlight several considerations

- i. Having desirable behaviours and characteristics listed out suggest that there is acknowledgement of the significant variations that exist in mentoring

approaches, goals, context and stakeholders that necessitate the need for generalisable guidance (6)

- ii. Listing the right ‘ingredients’ and conditions for mentoring success increases awareness of what is to be desired (6)
- iii. Echo the findings of recent systematic reviews, systematic scoping reviews and/or scoping reviews of mentoring relationships, mentoring structure, mentoring assessment, matching, mentor training programs and the mentoring environment underscoring the significance and role of ‘core’ aspirations (6)

Perhaps the most significant conclusion that can be drawn is that these ‘core’ aspirations inform the host organisation of its roles and responsibilities in recruitment, matching, training and evaluating mentees and mentors, in structuring and assessing the mentoring process and in nurturing mentoring environments (15). Concurrently, it is the host organisation that polices compliance of the CoPs and updates it (14).

3.4.1.4 Stipulations

Stipulations refer to those elements of the mentoring approach that are critical to the success of the mentoring program and thus required of all programs (2, 17). These include fostering a conducive mentoring environment that will nurture the development of trusting and enduring mentoring relationships (15). Yet, perhaps more significant is the finding that it is the host organisation that must operationalise these requirements, assessing and supporting stakeholders, their mentoring relationship and the program as a whole (19). Here the stipulations flesh out the skeletal framework forwarded by the core aspirations. Much of these roles and responsibilities have been discussed in Section 3.1.

3.5 Review of Mentoring Frameworks

A SSR in SEBA of mentoring frameworks is proposed guided by the research question **“what is known about mentoring frameworks in Novice Mentoring for medical students and physicians in medicine and surgery postings?”** and the further research question **“what are the characteristics of mentoring frameworks in Novice Mentoring for medical students and physicians in medicine and surgery?”**

I enclose the PICOS below in Table 3.13 and the SEBA-adapted PRISMA Flow Chart in Figure 3.11.

Table 3.13: PICOS, inclusion criteria and exclusion criteria

PICOS	Inclusion Criteria	Exclusion Criteria
Population	<ul style="list-style-type: none"> • Medical students • Junior clinicians • Residents • Senior clinicians • Attendings • Consultants 	<ul style="list-style-type: none"> • Allied health specialties such as dietetics, nursing, psychology, chiropractic, midwifery, social work
Intervention	<ul style="list-style-type: none"> • Mentoring by senior clinicians for junior clinicians • Mentoring by junior clinicians or residents for medical students • All medical and surgical specialties 	<ul style="list-style-type: none"> • Non-medical specialties such as Clinical and Translational Science, Veterinary, Dentistry
Comparison	<ul style="list-style-type: none"> • Novice Mentoring approaches • Novice Mentoring frameworks • Novice Mentoring guidelines • Practices in Novice Mentoring 	<ul style="list-style-type: none"> • Peer mentoring, near-peer mentoring, mentoring for leadership, mentoring patients or mentoring by patients. • Role modelling, coaching, supervision and advising
Outcome	<ul style="list-style-type: none"> • Attitude of mentors and mentees • Interprofessional Relations • Ethical behaviour • Professionalism • Problems/ barriers of mentoring • Mentoring programs 	

	<ul style="list-style-type: none"> • Solutions to current mentoring programs 	
Study design	<ul style="list-style-type: none"> • All qualitative methodologies and quantitative designs (observation studies, randomized controlled trials, cohort studies, cross sectional studies, longitudinal studies and case studies) 	

4450 articles were retrieved from the seven databases. 3395 abstracts were reviewed, 416 full text articles were identified, and 71 articles were included in this review (

Figure 3.11).

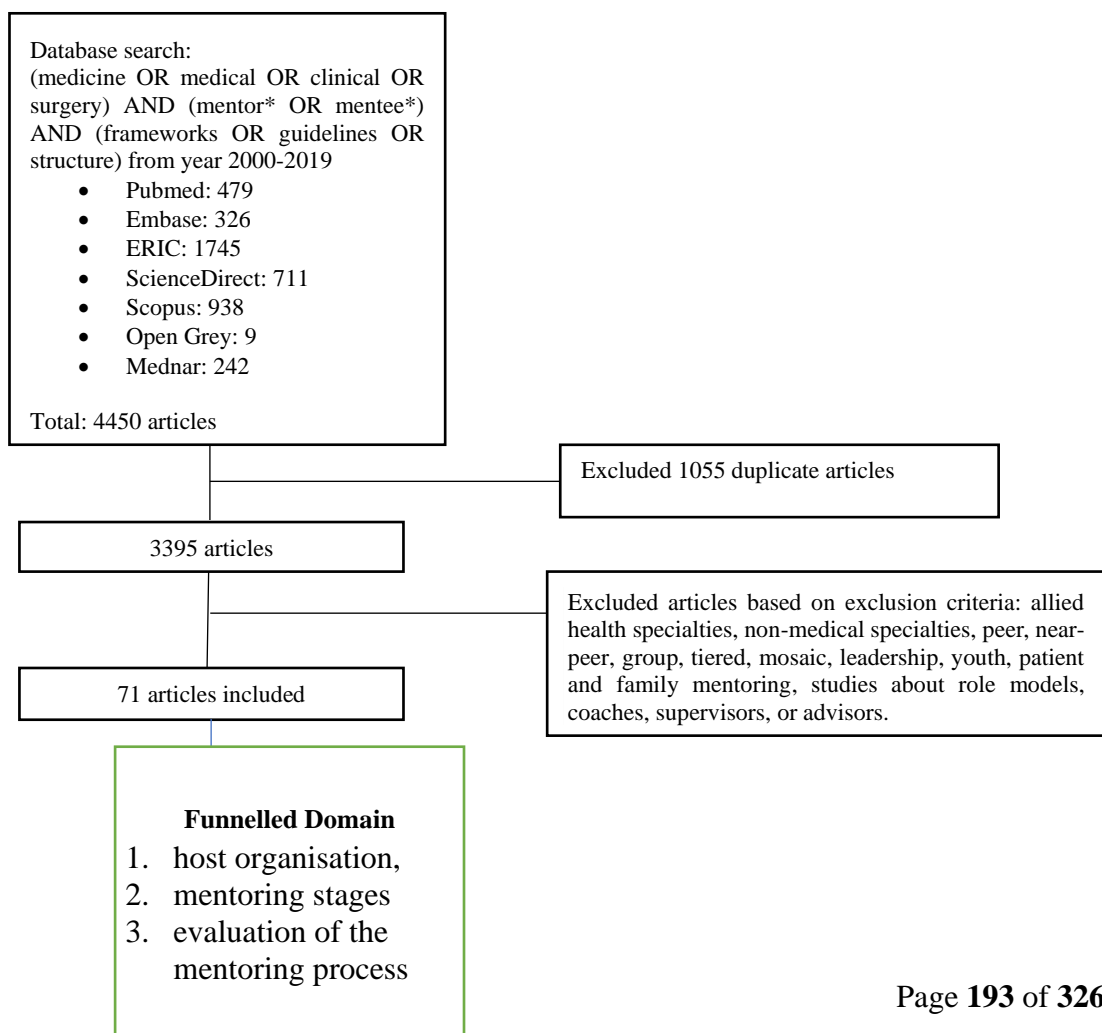


Figure 3.11: SEBA adapted PRISMA Flow chart

In keeping with the SEBA methodology, I will only present new data that is relevant to this discussion given that much has already been presented in Section 3.1. Such focus will facilitate effective review of the data and avoid repetition of information. I will therefore discuss new elements with regards to the mentoring stages and not discuss the funnelled domain of the host that was discussed in Section 3.1.

3.5.1.1.1 *The mentoring stages*

Briefly, mentoring relationships progress through pre-determined mentoring stages (*See Figure 3.3: Mentoring stages*). These elements have been presented in Section 3.1, but new insights are discussed below.

3.5.1.1.1.1 *Pre-mentoring*

3.5.1.1.1.1.1 Promoting a Culture of Mentoring

A unique aspect of the pre-mentoring stage that has not previously been discussed is efforts required to get ‘buy in’ and build traction and political support for the mentoring program. Pinilla *et al.* (248) reported that lunch conferences and lectures promoted awareness of mentoring, garnered ‘political support’ and promoted collaboration between departments and personnel. These processes served to increase awareness of the mentoring program, its role in the education program and highlight potential collaborations between departments (248). The presence of dedicated or formal mentoring programs also helped to develop an acceptance of the program and a culture for mentoring that enhanced mentee and mentor recruitment (234, 430, 431).

3.5.1.1.1.2 Structured program

Most structured mentoring programs were part of the formal curriculum (221, 227, 230, 432). Structured mentoring programs span the preparatory and initiation phases of the mentoring process providing orientation programs, skills training, mentor training, preparation of mentees for their mentoring experiences and the provision of administrative and financial support of the program (235, 244, 255, 430). The structured programs do facilitate flexibility in order to facilitate personalisation of the mentoring process (233, 234) through the inculcation of mentee's individual goals and timelines into the mentoring process (208, 433), personalising the mentoring process (208, 433) that help cultivate professional identities and personalised mentoring culture (233, 234) that enhance autonomy and connectivity amongst mentees (208, 433).

Structured mentoring programs also confine personalisation of the mentoring process to within acceptable standards (208, 433) by establishing the roles and responsibilities expected of mentees and mentors and stipulating the frequency, duration and form of mentoring meetings to prevent breaches in mentoring practice (221, 227, 230, 233, 234). In so doing, mentoring structures instils consistency to mentoring interactions and enhances assessments and oversight of mentoring programs (221, 227, 230, 233, 234).

3.5.1.1.1.3 Recruitment and Training

Other aspects of the pre-mentoring stage pertain to recruitment (discussed in Section 3.1) and training. Mentoring outcomes are enhanced by preparing mentors for their

roles and responsibilities (219, 233, 235, 248, 251, 373, 411, 432, 434, 435). Mentors in nearly 32% of mentoring programs in Germany (244) and 63% of new US medical schools received formal training (235). Mentor training ranged from providing mentors with information packs describing the mentorship programme (436, 437) to participation in workshops and seminars on mentoring, leadership and team building (219, 233, 235, 248, 251, 373, 411, 432, 434, 435).

Oelschlager *et al.* (435) described a longitudinal mentor training program that ran parallel to the mentoring relationship. In their program, there were monthly faculty development activities including sessions on mentoring, teaching clinical skills and professionalism, and giving feedback to keep mentors up-to-date and supported. Critically, this program also highlighted increasing adoption of an ongoing longitudinal support mechanism as part of the mentor training program.

Mentee training includes training in establishing clear mentoring goals with mentors and agreement upon the form and frequency of communication and support that will be provided. Mentee preparation is also enhanced through briefing and/or mentee training. Fornari *et al.* (235) reported that 13 of the 14 US medical schools surveyed required mentees to be trained for participation in mentoring. The authors, amongst others, reported that mentee training ranged from use of information packs (233, 436) to participation in intensive foundation courses carried out by the host organisation (438).

Generally, mentee and mentor training included training on their roles and responsibilities, and on mentoring, communication, conflict management and

feedback skills (259, 313, 355, 363, 365, 381-383). Training often occurs in the form of workshops that also offer participants a chance to experience and imbibe the culture of the mentoring program (206, 224, 259, 265, 439) which include the core beliefs, values and principles that will guide stakeholder in their decision making and conduct over the course of the mentoring program (206, 224, 259, 265, 439).

I will not discuss the other stages of the mentoring process such as the matching process, preliminary meeting and the mentoring process itself, given that there are no new insights to be added to the details discussed in Section 3.1. However, the issue of mentoring ratios is unique and deserves consideration.

3.5.1.1.2 *Mentoring ratios*

There were 25 articles which discussed mentor to mentee ratios. These ranged from 1:1 to 1:34. Fifteen papers described one-to-one mentoring relationships. In some accounts, mentors had multiple one-to-one relationships. Meinel *et al.* (244) reported that on average mentors had 5.9 one-to-one mentoring relationships and Fornari *et al.* (235) reported mentors having up to 20 relationships.

Here I will also discuss other new data on the support of the mentoring structure.

3.5.1.1.3 *Supporting the mentoring structure*

There are three aspects to support of the mentoring structure.

3.5.1.1.3.1 *Administrative support*

Mentoring structure provides administrative support in the form of student assistants, secretaries, non-scientific members of staff (244) and hospital assistants who run the mentoring programme (219) and support mentees and mentors (248).

3.5.1.1.3.2 *Financial support*

Financial support for the programme is critical. Meinel *et al.* (244) reported that 50% of mentoring programs surveyed received funding from the university, 36% of programs are funded by tuition fees and 23% programs used third party funds (244). Pinilla *et al.* (248) employed ‘event-specific sponsors’ to fund their mentoring programme whilst Pololi *et al.* (440) required department chairs and section heads to allocate formal mentoring time for newly appointed mentors.

3.5.1.1.3.3 *Incentives*

Whilst Usmani *et al.* (227) believed that “*mentoring is an altruistic act not undertaken for incentives or any other self-benefit*” (227), page 794) and Kalen *et al.* (230) reported that mentors at the University of California-Los Angeles gave their time “without meaningful compensation”, Lin *et al.* (219) and von der Borch *et al.* (236) found that financial remuneration, academic promotion and formal recognition for mentoring efforts enhanced mentoring efforts, increased personal satisfaction and advanced the careers of mentors (230, 373).

Fornari *et al.* (235) found 25% of programs compensated mentors for their mentoring efforts while some mentoring programs provided access to institutional facilities and library resources as incentives to mentors. Areephanthu *et al.* (441) reported use of flexible organisational research funding that provide mentors with the freedom to pursue their individual research interests whilst Oelschlager *et al.* (435) reported that 25% of the salary of college mentors were funded by the dean’s office as incentive.

3.5.1.1.4 *Evaluation of the mentorship process*

Only 30 of the 71 included articles proffered an evaluation of the mentoring program, mentoring approach, mentoring relationships or mentoring progress (6, 199, 206, 219-221, 228, 230, 232, 239, 242, 261-263, 271, 274, 295, 305-307, 313, 314, 329, 346, 365, 412, 442-445). Only one article considered the input of all three stakeholders (442).

3.5.1.1.5 *Evaluation of mentees by mentors*

Assessments of mentees by mentors were often included in the mentee's annual activity reports and feedback (206). Assessments of the mentee were also accrued through case reports (221) and 'holistic' evaluations (442) to facilitate mentee development (6, 206, 221, 271, 306, 313, 442, 445).

3.5.1.1.6 *Evaluation of mentors by mentees*

Two papers (239, 262) used the Mentorship Effectiveness Scale to evaluate the support provided by the mentor and the characteristics of the mentor. Fish (442) employed a general review of the effectiveness of mentoring. Six other papers (232, 274, 295, 314, 346, 444) did not specify the assessment approach employed.

3.5.1.1.7 *Evaluation of the mentorship program*

Programme evaluations take the form of face-to-face interviews, mentor and mentee journals, reflection sheets, questionnaires, workshops, focus groups to discuss mentoring experiences (199, 219, 220, 228, 230, 239, 242, 261-263, 295, 305-307, 313, 329, 365, 412, 442, 443). A combination of Likert-scales, open-ended questions and feedback on the level of satisfaction in the program, potential negative aspects and

suggestions for future mentoring programs have been employed (305). There were no validated assessment tools found.

3.5.1.2 Stage 6 of SEBA: Synthesis of SSR in SEBA

The narrative produced from consolidating the themes/categories/tabulated summaries was guided by the Best Evidence Medical Education (BEME) Collaboration guide (198) and the STORIES (Structured approach to the Reporting In healthcare education of Evidence Synthesis) statement (446).

3.5.2 Discussion

In answering its primary and secondary research questions, this SSR in SEBA of mentoring frameworks highlights several novel findings. It also provides validation of some of the findings raised by the NRs in SEBA in Sections 3.1 and 3.2. In keeping with the SEBA methodology and in the interest of time and to reduce duplication, I will focus on the new findings forwarded by the reviews of mentoring frameworks. Here synthesis of this discussion will, like the previous results be drawn solely from the findings of this review and will be agnostic of the previous findings save the removal of duplicated topics and definitions such as ‘fit for purpose’ mentoring relationships, equipoise, balance and the mentoring ecosystem.

3.5.2.1 Features of the mentoring framework

To begin, the mentoring framework clearly highlights efforts to build a ‘fit for purpose’ mentoring relationship within the mentoring ecosystem (2, 6).

The posit for the concept of the mentoring ecosystem is inferred from the presence of the mentoring stages, efforts to build an effective mentoring culture, introduction of a structured course to the mentoring relationship (1, 15, 43). A ‘fit for purpose’ mentoring relationship is also deduced from efforts to ensure ‘balance’ between consistency and flexibility within the confines of the CoPs (1, 4) and structured mentoring process (33). The data also suggests that this process of ensuring ‘balance’ within the mentoring relationship is an active process guided by longitudinal, holistic and timely assessments of stakeholders and their mentoring relationships (20, 33) and overseen by the host organisation (2).

The mentoring framework also attempts to bring equipoise to the mentoring program by ensuring that the mentoring program can achieve what it seeks to accomplish and yet ensure its sustainability (2).

3.5.2.1.1 Consistency in the mentoring framework

Consistency is evident in the mentoring framework through the structured approach built around the mentoring stages, the presence of clear criteria for recruitment and the presence of a structured training program that seeks to inculcate consistent values, beliefs and principles of practice which will guide conduct, goal setting, align expectations and establish CoPs and to introduce consistency in the mentoring approach and assessments (2).

3.5.2.1.2 *Flexibility in the mentoring framework*

Flexibility within the mentoring framework is evident in the presence of variations in the mentoring ratios, the personalisation of the mentoring assessments and in the provision of mentoring support to the stakeholders (2).

3.5.2.1.3 *Equipoise within the mentoring framework*

The mentoring framework attempts to meet the overall goals of the mentoring program through administrative and financial support, the provision of incentives to mentors and in providing effective and longitudinal training to mentees and mentors (2). Yet, to do so, the mentoring framework must act within the political and culture clime of its setting and must consider the progress and needs of all the mentoring relationships within the program and the needs of the program as a whole (15). Equipoise seeks to ensure that efforts to support changes to the mentoring program or approach does not overstretch its available resources. At its heart, equipoise seeks to create a sustainable program that can develop effectively over time.

3.5.2.2 **The concept of ‘equipoise’**

The concept of ‘equipoise’ sees the host organisation counterbalancing the need for adaptability, oversight and support of the mentoring approach within the mentoring program with the need to sustain the program and ensure comprehensive and continuous appraisals the mentoring program (19). There is also a need to consider the absence of effective means of assessing the impact of political factors in the local setting, sociocultural influences influencing mentoring relationships and processes and the hidden, informal and formal curricula given their impact upon the ability of the host organisation to support adaptations to the mentoring program (206, 262, 307,

314). These considerations bring to the fore the importance of appreciating the gaps in assessing mentoring.

3.5.2.3 Appreciating gaps in assessing mentoring

The complexities posed by mentoring's nature has meant that mentoring continues to be studied in 'bite-size chunks' characterised by focused reviews or 'deep dives' into specific aspects of the mentoring process, satisfaction surveys and/or targeted assessments of different aspects of the mentoring process usually from the perspective of one stakeholder (1, 4). Indeed only 8 articles provide focused data on assessments of mentees by mentors, (6, 206, 221, 271, 306, 313, 442, 445), nine detailed evaluations of the mentor by the mentee (232, 239, 262, 274, 295, 314, 346, 442, 444) and 20 focused upon evaluation of the mentoring program (199, 219, 220, 228, 230, 239, 242, 261-263, 295, 305-307, 313, 329, 365, 412, 442, 443). Only one article considered the input of the three main stakeholders (442). There is no attempt to evaluate the efficacy of balance and equipoise nor the diverse factors affecting it (1, 4, 33).

3.5.3 Conclusion

Whilst the NR in SEBAs of Novice Mentoring and ethical issues in mentoring and the two SSRs in SEBA of the CoPs and mentoring framework will be consolidated in the next chapter, the key findings in the results section should be recognised. These include the CoPs, the mentoring framework, and the mentoring culture; and the key sources of ethical issues in mentoring originating at the stakeholder, relational, structural, environmental and assessment levels.

Chapter 4. Developing an Evidence Based Framework for Novice Mentoring

4.1 Introduction

As in the results section of this thesis, the two NRs in SEBA on Novice Mentoring in Internal Medicine (IM) and ethical issues in mentoring, as well as two SSRs in SEBA on CoPs and mentoring frameworks contained in Chapter 3 will be brought together as per the Systematic Evidence Based Approach (SEBA). It is my intention that Chapter 4, the discussion section of this thesis, provides a holistic picture of Novice Mentoring with efforts to address ethical issues in mentoring relayed in an accountable, reproducible and evidence based manner (2, 23, 79-83).

In this chapter, I will bring together my published data from various aspects of my thesis. I had sought to publish my work as I worked on this thesis to forward both an evidence based approach that would gain traction amongst program designers and curriculum administrators and inject some external academic oversight to my concepts. These include the concept Novice Mentoring and its nature, ‘fit for purpose’ matching and mentoring relationships, balance, equipoise, the competency based mentoring stages, mentoring framework and the mentoring ecosystems. It has been my belief that this approach would best secure continued support for the PMI.

As a result, this chapter will

1. Characterise the Novice Mentoring process around its developmental, relational, structural features and its stage-, competency-, ‘balance’, ‘fit for purpose’ mentoring relationship- and ecosystem based nature to provide an up-to-date clinically relevant, context specific, perspective of this approach and promote more consistent understanding, employ, assessment, support, and oversight of this unique mentoring approach (2).
2. Bring together the concepts of ‘fit for purpose’ matching and mentoring relationships, balance, equipoise, the competency based mentoring stages, mentoring framework and the mentoring ecosystem to provide a picture of how these elements interact in practice within the mentoring ecosystem (4, 43).
3. I will then forward a better understanding of the mentoring ecosystem’s role in addressing ethical issues in mentoring.

4.2 Synthesis of the Narrative

To synthesise a holistic picture of Novice Mentoring, I will employ the Jigsaw Perspective and the Funnelling Process to bring together data from the reviews in Chapter 3 (2, 23, 79-83) in a cohesive manner. To bring data from two NRs in SEBA and the two SSRs in SEBA, I adapt Phase 5 of France *et al.* (194)’s and France *et al.* (196)’s approach, and adopt reciprocal translation to juxtapose the funnelled domains from the NRs and SSRs in SEBA.

The first step involves careful examination of the current data on Novice Mentoring. Effective appreciation and oversight of the available data will help guide decisions on combining the data later. Particularly informative are reviews by Krishna *et al.* (2),

Chia *et al.* (19), Hee *et al.* (15), Chua *et al.* (14), Hee *et al.* (18) and Krishna *et al.* (1)'s prospective review of the PMI that helped to delineate the concept of mentoring stages.

The second step is to list all the themes and categories within the two NRs in SEBA and two SSRs in SEBA. Like pieces of a jigsaw puzzle, it is important at this stage to carefully scrutinise the contents of each piece. This calls for the decoupling of the funnelled themes/categories and scrutiny of the original themes and categories gathered from each review.

After this close examination, the third step calls for comparisons and recombination of overlapping themes and categories across the review. This facilitates the emergence of a rich assortment of themes/categories.

The fourth step requires senior members of the research team to independently review these new themes/categories.

The fifth step sees the independent findings shared online and a consensus decision made on how the data should be best combined.

The sixth step sees the consensus findings of the reviewers discussed with the expert team.

The seventh step sees the themes/categories compared with the tabulated summaries of all the included articles to create further funnelled themes/categories.

Finally, the eighth step sees the synthesis of the narrative based on these funnelled themes/categories.

In acknowledging the huge amount of data available, I will focus on proffering a better understanding of the ‘fit for purpose’ Novice Mentoring relationship, the Novice Mentoring Framework and the mentoring ecosystem; that represent the unique contributions of this thesis to Novice Mentoring practice (2). This will also reduce repetition and help streamline efforts to consolidate my key findings.

4.3 Characterising the Novice Mentoring process

The findings of the SSR in SEBA of ethical issues in mentoring highlight the impact of an absence of clarity in the terminology used to describe mentoring processes and approaches to efforts to address current issues facing mentoring. I believe characterisation of Novice Mentoring as a distinct mentoring approach will reduce the risk of conflation with other mentoring approaches such as near peer, peer, group, interdisciplinary, combined, mosaic and e-mentoring and the continued intermixing of Novice Mentoring with practices such as supervision, coaching, role modelling and tutoring and circumvent many of the threats to the PMI (15, 35, 43).

To be clear data, from this thesis has advanced thinking on Novice Mentoring. Gone are concepts that the primary goal of the Novice Mentoring process is solely to nurture enduring and personalised mentoring relationships and in its place is a more nuanced perspective rooted in nurturing ‘fit for purpose’ mentoring relationship (6, 50). So central is this concept of ‘fit for purpose’ mentoring relationships that it has been

afforded pride of place amongst the eight key features of Novice Mentoring that I have forwarded in Chapter 3. These adaptations to the definition of Novice Mentoring bear closer scrutiny. To frame this discussion, I begin by reviewing the central role of the mentoring relationship.

4.4 Mentoring relationships

Mentoring relationships are key to mentoring's success and rely upon a few vital ingredients. For quick reference given previous detailed discussions, these include:

- A clear set of goals, objectives and approaches to be expected of the program (17),
- Recruitment of would-be stakeholders with the desired characteristics required by the program (18),
- Stakeholder training (20),
- Personalised matching of stakeholders (18),
- A nurturing mentoring environment that will create a safe, individualised space for frank discussions and exchange of ideas that is conducive to the provision of targeted personal, professional, academic, research and clinical support – this will build trust amongst stakeholders and motivate them to invest further, thus leading to more enduring and personalised mentoring relationships (15),
- Effective coordination of mentoring interactions between the stakeholders (43),
- Alignment of expectations, setting of goals, roles and responsibilities and motivation to effectively realise individual mentoring goals (50),

- Building purposeful mentoring relationships that provide personalised interactions within a consistent mentoring structure – this lays the foundation for effective mentoring dynamics amidst adaptations and evolutions over the course of the mentoring process (1, 4)
- Understanding of the mentoring process (1, 4),
- Consensus decisions between the stakeholders on the scope and type, nature, and frequency of mentoring interactions (2, 17),
- Agreement on timelines, milestones, and end points of the mentoring process (2, 17),
- Agreement upon the assessment process (33),
- Presence of a flexible communication process that will facilitate personalised, appropriate, specific, timely, holistic, accessible and longitudinal support and feedback through accessible, robust synchronous and asynchronous communication platforms (32),
- Presence of a flexible yet structured mentoring framework built around the mentoring stages (2),
- An adaptable mentoring approach guided by longitudinal assessments of these competency based stages (1, 4), and
- A mentoring ecosystem that considers the diverse influences upon the mentoring process and captures the sometimes-competing pressures in balancing flexibility and consistency (2)

The concept of mentoring relationships and these ‘ingredients’ form the basis of the more nuanced concept of a ‘fit for purpose’ mentoring relationship. It is the concept

of ‘fit for purpose’ mentoring relationships that help achieve the overall goal of developing personalised and enduring mentoring relationships that in turn underpin a successful mentoring process (2). Awareness of these factors change the manner that mentoring relationships are supported and assessed.

4.4.1 ‘Fit for purpose’ mentoring relationships

To reiterate, creating a ‘fit for purpose’ mentoring relationship pivots on achieving balance between the sometimes-competing need for consistency and flexibility (15), along the anticipated trajectory of a Novice Mentoring relationship and whether potential changes to the mentoring approach are justified, sustainable, lead to better outcomes and or in breach of CoPs (19). Awareness of this complex counterbalancing process underscores importance of how mentoring relationships are supported and assessed and their wider implications upon ‘equipoise’.

4.4.2 Equipoise in mentoring programs

Whilst balancing within the ‘fit for purpose’ concept of mentoring relationship considers factors within a particular mentoring relationship (15), the concept of equipoise extends to weighing up threats, risks and benefits at a program level. These complex computations consider the impact of the mentoring culture, the hidden and the informal curriculum and the values and goals of the program, estimate how changes made may reverberate across the wider curricula, be mindful of the reputation and sustainability of the program, ensure compliance with local codes of conduct and be sensitive of prevailing sociocultural considerations (15, 17). Thus, equipoise

considers the processes of adaptability to attend to the needs of the program and ensuring effective coordination and oversight (19). I will consider these aspects in turn.

4.4.2.1 Adaptability

The program must be able to adapt to the demands of the mentoring relationships, the program and evolving contextual factors (43) if it is to remain sufficiently flexible to meet the needs of individual mentoring relationships (50). Such adaptability resides within the mentoring framework and structure and the ability of the host organisation to orchestrate an appropriate and timely response to assessment data and or feedback from the stakeholders (43, 50). This has been highlighted during the COVID-19 pandemic (32) where mentoring programs have adapted to the employ of accessible, synchronous and asynchronous, face-to-face online communication platforms (2, 5, 10).

4.4.2.2 Sustainability

Sustaining the changes brought upon by the COVID-19 pandemic underscore the importance of maintaining the sustainability of these programs (43). Even with such regular support from the host organisation and the formal curriculum the resources within most mentoring programs require careful management so as not to endanger the program's longer term viability (43, 50).

4.4.2.3 Coordination

Coordination of the process of equipoise balancing process is complex (2). It must consider the meso- and macro-environment, the impact on other practices and relationships downstream from the change (15) given the intertwined nature of

mentoring processes (1, 4), ensure effective and timely communication and support of the stakeholders and the mentoring program (9, 17, 50) and due consideration of the mentoring ecosystem as a whole (32).

Coordination is overseen by the host organisation and guided by assessments and estimations of mentoring trajectories (33) potential breaches to CoPs and the interests, resources and reputation of the program (15).

4.4.2.4 Oversight

Ensuring that the balance that is struck is apt and reflective of the needs of the stakeholders and their mentoring relationships in shifting mentoring conditions underlines the importance of oversight of the stakeholders and their mentoring relationships, the mentoring environment and the mentoring process (14, 15, 33) by the host organisation (2, 14, 19).

I believe understanding the importance of adaptability, sustainability, coordination, and oversight provides essential appreciation of the mentoring ecosystem.

4.5 Mentoring ecosystem

The mentoring ecosystem is more than a means of mapping the mentoring framework's orchestration of interactions across the various mentoring stages (2, 23) and understanding the factors impacting balance within 'fit for purpose' matching (18) and mentoring relationships (2, 14, 19) as well as appreciating mentoring dynamics and the role of the host organisation within the mentoring environment (19). Rather, the NRs in SEBA in Sections 3.1, 3.2 and 3.3 underscore its potential as an education tool to brief new recruits, align expectations, guide the mentor training program, and

enhance appreciation of the mentoring process in order to better prepare, motivate and build resilience amongst the stakeholders (see Section 3.1.2.15.1).

Grossly, the mentoring ecosystem charts the course of a mentoring relationship within a mentoring program as it negotiates competency based mentoring stages guided by the common and personalised competencies of the particular mentee (2, 5, 6). In doing so the mentoring ecosystem also captures the efforts of the stakeholders to nurture enduring and personalised mentoring relationships (17, 129).

Micro-environments consider each stakeholder's interests, values, principles, beliefs and goals and personalities and working styles (2, 15). It also considers their needs, availability, capacity, motivation, and goals and their academic, professional, psychosocial, research and administrative situations and their influences upon the particular stakeholder (2, 15). The micro-environment also recognises the irrefutable impact of environmental factors upon stakeholders and the reciprocal relationships between stakeholders (2, 15). Given that the external influences upon an individual stakeholder in changing conditions, micro-environments are seen as fluid. Fusion of the micro-environments arise with interactions between the stakeholders (2, 15). The creation of meso-environments is captured in Figure 4.1 that is an adaptation of Figure 3.4.

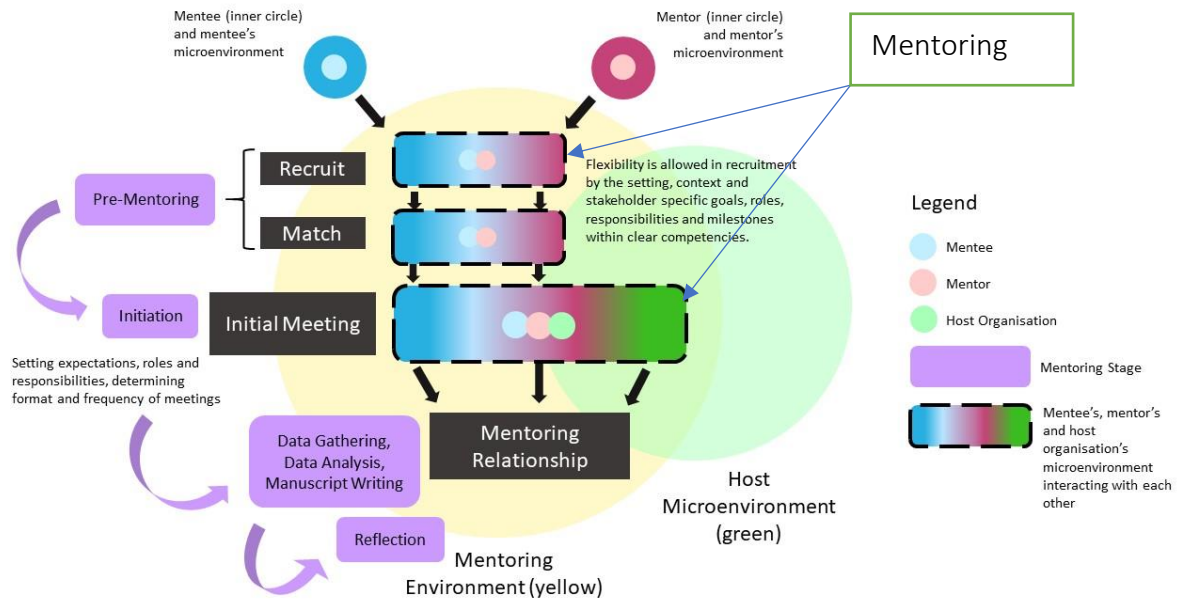


Figure 4.1: The Mentoring Ecosystem (adapted)

The mentoring ecosystem also captures the interactions between the micro-environments. The mentoring dynamics are depicted as the area of overlap between micro-environments. The size of the overlap of individual microsystems represents the quality, durability, nature and alignment of goals that underpin the concept of mentoring dynamics (2). Mentoring dynamics within the mentoring ecosystem emphasises the importance of nurturing personalised interactions and thus the critical role of criterion based recruitment, training, assessment, matching, assessment, and the alignment of expectations (18, 20, 33). In addition, mentoring dynamics reflect the stakeholder's willingness to adapt to one another's micro-environments and contend with the evolving mentoring environment to build and sustain closer, trusting and enduring ties in changing conditions (15).

Guiding balance within mentoring relationships through the integration of competencies is the mentoring framework aided by the CoPs (1). Facilitating these

interactions and forming the basis for continuous assessments are the competency based stages (1). Yet missing from its estimations are considerations about equipoise, indicating a failure of program wide considerations in the balancing of these wider issues pertaining to sustainability (2). A further consideration is the assessments of competency based mentoring stages built on general and personalised competencies which are still lacking and thus compromising the ‘feedback’ loop that guides efforts to establish equipoise (1, 14, 19).

4.5.1 The host organisation

Chia *et al.* (19) suggest that addressing current gaps in the mentoring structure and mentoring ecosystem are the bailiwick of the host organisation which has a variety of critical roles. These include a role in recruiting, aligning expectations and guiding mentee and mentor selection and training, establishing codes of conduct and effective evaluation, directing timely holistic and longitudinal support, and influencing the policing of conduct and progress of stakeholders (19). Meeting these critical roles allow a “*team of educators and administrators with common values, goals and views on education and clearly delineated roles and responsibilities who collaborate through coordinated lines of communication, assessment, and reporting in order to realize their “defining” and secondary roles*” to take on the role of the host organisation (19), page 5).

Here the defining roles of the host organisation include

- “*Establishing and/or complying with overarching goals, clinical standards, and curriculum requirements*” (19), page 3),

- *“Designing, influencing, and overseeing the mentoring program”* (19), page 3),
- Establishing the mentoring approach,
- Designing and establishing balance between flexibility and consistency within the mentoring structure,
- Determining if adaptations to the mentoring approach are acceptable,
- Enacting agreed upon changes to the mentoring approach to realise a ‘fit for purpose’ mentoring relationship,
- Nurturing and overseeing the program and supporting the mentoring environment,
- *“Nurturing the mentoring culture and mentoring relationships”* (19), pages 3).

4.6 The requisites for a consistent and safe mentoring approach

Based upon these narratives, I proffer nine requisites for a consistent and safe mentoring approach to Palliative Medicine. These include

1. A clear definition of Novice Mentoring (2),
2. A consistent mentoring framework to guide the course of the mentoring process, nurture the mentoring environment and develop the mentoring culture (2, 15, 17),
3. Clearly delineated CoPs which must be established to confine practice and the mentoring environment to acceptable practice parameters (14, 21, 23),

4. Effective support of the mentoring ecosystem which take into firm consideration the mentoring culture (2),
5. Well-delineated and aligned expectations, roles, responsibilities and timelines of the three stakeholders (21-23),
6. Effective application of competency based stages that facilitate longitudinal, personalised, appropriate, specific and timely assessments of mentees, their needs, progress and the 'health' of their mentoring relationships through each of the mentoring stages (1, 14, 33),
7. Longitudinal and comprehensive training and support of the mentors and mentees which inherently encompasses much needed education on the function of the mentoring ecosystem to help align and guide expectations (20),
8. Establishing the role of the host organisation in providing practical and consistent oversight of the mentoring ecosystem and concerted efforts to balance flexibility and consistency within the mentoring framework to create 'fit for purpose' mentoring relationships (19), and
9. Lastly, effective and confidential feedback and communication pathways for mentees, mentors and the host organisation (4, 14).

These considerations underpin the forwarding of the Novice Mentoring Framework (NMF) designed to promote a common understanding of mentoring and provide an evidence based guide to the mentoring framework (2, 3, 17).

4.7 Designing the Novice Mentoring Framework

The NMF helps establish a consistent approach to mentoring framework for the various mentoring stages and sets the common competencies within each of them (21-23). It also establishes the roles and responsibilities for the stakeholders, paying special attention to the part of the host organisation at all stages of the mentoring process (19). In addition, the NMF allows for adaptations to the mentoring process and approaches should the need arise and helps bridge current gaps in stakeholder and program assessments.

Design of the NMF pivots on several key considerations.

4.7.1 Formal mentoring program

To begin, I envisage the NMF being part of a formal program. This is to ensure that there is a host organisation that can oversee and steer the mentoring approach, nurture, and tend to the mentoring environment and assess the mentoring program (14, 15, 19). A formal program would also require that the approach, structure, mentoring support and goals are clearly established – providing program designers and the host organisation with an internal checklist for the running of their programs (2, 16, 17) and adequate funding, assessment, and oversight (14, 19).

A formal program replete with clear goals and objectives will also be more able to identify the common and personalised competencies within the mentoring stages and employ them as the basis for longitudinal and multi-sourced training, assessment and support of mentees and mentors (19, 20, 33). This will facilitate a consistent

understanding and approach to mentoring and adaptations to the mentoring approach. Concurrently, a formal program will also demand clear CoPs. The combination of clear mentoring stages, stage based competencies and CoPs provide the program greater ability to pick up mentoring relationships in trouble or, worse, breaches in the mentoring process and facilitate effective mentoring support for remediation should the need arise.

A formal program would also facilitate a mixed matching program (18) where mentees are matched to a number of mentors with similar interests, complementary characteristics and workstyles (14). This approach allows the melding of two apparently successful matching processes that will boost the chances of desirable mentoring outcomes classically associated with formal matching whilst enhance the chances of a personal and enduring mentoring relationship traditionally associated with mentee initiated matching (18).

A formal program will help in the pre-mentoring stage, too – in the establishing of roles, responsibilities, timelines, goals, assessment criteria, CoPs and expectations of the various stakeholders that will align expectations and nurture a trusting mentoring relationship (1, 17). A formal mentoring program can run, sustain, and adapt the longitudinal mentor and mentee training and assessment programs that should run beside and concurrently with the mentoring relationship (6, 17, 19).

A formal program would be part of the wider education curriculum, allowing the mentoring program to be vertically and horizontally integrated. This will help mentors better appreciate their progress and schedule meetings with respect to examinations

and other potentially stressful periods for the mentees. This will ensure that holistic support may be availed in a timely, personalised, and appropriate manner (1-3).

In addition, a formal mentoring program will require structured and regular program appraisals as part of its quality assurance process. These will serve as critical check-ins to ensure that the program is continuously meeting high standards and offers opportunities for remediation and upscaling (14, 15, 33). Assessment data and outcome measures will inform designers and administrators of the larger curriculum, within which the mentoring program is hosted, of the latter's sustainability. These will help justify the program's place in the curriculum and administrative, financial and manpower coordination. It will also assist with mentor recognition, designation of protected time as well as program and staff funding (2, 3, 19).

4.7.1.1 Recruitment

Leveraging upon the success of programs such as the Palliative Medicine Initiative (PMI), the NMF will provide a structured approach to recruitment setting out the desired characteristics of mentees and mentors and guiding the recruitment process in a consistent and transparent manner (1, 14, 15). A consistent approach will help frame expectations of would-be mentees and mentors (21-23) and help shape the informal and hidden curricula (15).

4.7.1.2 Training

The NMF proposes a longitudinal mentor training program allowing mentors to seek timely and personalised assistance on communication, assessment and or ethical issues as they arise (20-22). The training program will equip mentors with the requisite skills

and knowledge (20-22) , prepare them for their roles (1, 4) and facilitate the host organisation assess the mentors and determine their strengths and areas where additional support is needed (15, 19, 33).

For new mentors, the training program will provide with support, mentoring and role modelling by a senior mentor (1, 2). This will help new mentors build their own personalised mentoring relationships, establish clear and open lines of communication to facilitate frank exchanges of ideas and opinions with their mentees (4, 43, 50), assess their mentees and the ‘health’ of their mentoring relationships (20), how to adjust their mentoring approach to meet the needs of their mentees and cultivate and sustain a conducive mentoring environment (4, 15).

4.7.1.3 **Matching**

A criterion based mixed matching approach will allow the mentee the opportunity to meet and discuss their goals, needs, concerns, availabilities and outcomes with potential mentors with the desired characteristics and working style to structure and journey with the mentee along their particular mentoring journey (14, 17, 18). The host organisation also provides mentees and mentors with a two-week ‘trial’ period during which the mentees will determine if they would like to ‘confirm’ the match (1, 19) and proceed to a pre-mentoring meeting.

The pre-mentoring meeting furnishes the mentees and mentors with the program’s overarching CoPs, align and clarify expectations, timelines, roles and responsibilities, communication pathways and the frequency, mode and nature of subsequent meetings and assessments (2, 23). In keeping with the ‘fit for purpose’ matching process, the

pre-mentoring meeting sees mentees and mentors map their objectives, timelines and the course of their mentoring relationship (50) discuss possible issues that they may face and the external factors that may influence their progress (2). Here, I believe use of the mentoring ecosystem as an education tool to align expectations and map the course of the mentoring relationship will reduce the likelihood of failed ‘trial’ matchings (2).

A criterion based mixed matching approach housed within a formal mentoring program will ensure ‘protected time’ for mentees and mentors, a platform for regular meetings, assessment programs and opportunities for anonymous feedback (10, 11, 16) and a buffet of educational and administrative support (15, 19, 37). Perhaps more importantly, having the matching program incorporated into the mentoring ecosystem will better guide the mentoring relationship and shape communication strategies that are critical to the assessment and feedback process (18) and ensure that support structures are targeted, well developed and rigorously maintained (2).

4.7.1.4 Competency based stages

It is here that the true import of a formal program replete with a consistent mentoring approach becomes clear. Built around the mentoring stages, the NMF will set out common and personalised competencies to be achieved at each stage of the mentoring process (1, 4) (Table 4.1). Whilst the common competencies will allow comparisons between the different mentoring relationships in the program and simple appraisal of the overall program, it is in the personalised mentoring competencies that the value of the competency based stages become evident (1, 4).

Personalised competencies ensure an individualised mentoring experience. It is here that alignment of roles, responsibilities, timelines, goals, assessment criteria, CoPs and expectations of the individual stakeholders help structure the mentoring process and address changes in the mentoring process (1, 2, 14).

4.7.1.5 Assessments

The combination of predetermined milestones, outcomes and competencies will allow individualised assessments on terms determined by the stakeholders (33). Critically, it will allow much needed holistic and longitudinal assessments of the mentoring process as well the mentee's progress and their mentoring experiences (1, 4). This has been identified as a key gap in addressing ethical issues in mentoring due to the possibility of unchecked breaches in mentoring standards and guidelines falling under the radar (22, 23). Holistic and longitudinal assessments are critical for rigorous oversight of the mentoring process where the host organisation and or senior mentors act as external or independent reviewers determine if further support should be deployed to mentor-mentee pairs that have not met their milestones and competencies (19).

The presence of personalised competencies at each stage of the mentoring process also shapes mentor training and equips mentors with effective assessment techniques and requisite proficiency needed to provide personalised, appropriate, specific, timely, holistic, accessible, actionable, and longitudinal support and feedback (9, 20, 50). Here external oversight and support mechanisms for these assessments will identify when remediation is required (21-23).

4.8 Realising the Novice Mentoring Framework

The NMF comprises of two sections – expectations upon each stakeholder and common competencies to be met. These two sections need to be considered together with personalised competencies agreed upon by the various stakeholders (1, 4). The presence of personalised competencies reiterates the need for longitudinal and holistic assessments of individual microenvironments (2), effective communication platforms, access to continuous support, and a nurturing mentoring environment (15, 43).

The parallel influences of common and personalised competencies and expectations upon stakeholders requires the NMF be effectively supported and overseen (33). It also underlines the need for effective assessment tools and protocols to shape ‘fit for purpose’ mentoring relationships (33) and for stakeholders to be trained on their use (15). The stakeholders should all be made aware of the NMF, its requirements and the responsibilities it places upon each stakeholder (20) as well as the common competencies expected of mentees underlining the need for effective oversight of the application of the NMF(2).

Table 4.1: Novice Mentoring Framework (NMF)

Stages	Requirements, or Tasks to be Completed, for this Stage	Competencies to be Achieved before Progression to Next Stage
Designing the Mentoring Programme	<p><i>Host Organisation (who play a key role at this stage (233, 235, 436, 438))</i></p> <ul style="list-style-type: none"> • Carries out a needs assessment to inform the role and goals of the mentoring program <ul style="list-style-type: none"> ○ Obtain and analyse data from self-reported surveys and/or focus group discussions to understand the need for a mentoring program, the benefits it brings, roles and responsibilities, challenges associated with mentoring for mentees and mentors as well as how it may be integrated into the wider medical training curricula (219, 230, 449). • Carries out a feasibility study to ensure sustainability of the program keeping in mind the need to provide financial (244, 248), administrative, educational and mentoring (244, 440) oversight. • Establishes the mentoring structure, matching (219, 227, 234, 373, 430, 434), assessment and support mechanism to be employed by the program keeping in mind the context, population and setting (219, 221, 233-235, 244, 248, 373, 430, 434, 435, 450) <ul style="list-style-type: none"> ○ Mentoring structure includes form, frequency, duration and timings of communication (322, 323, 451-457) ○ There should also be creation of flexible and consistent communication channels for mentees and mentors to use subsequently such as email, messaging, Skype, face-to-face meetings (125, 239, 242, 244, 255, 458, 459). 	<p><i>Host Organisation</i></p> <ul style="list-style-type: none"> • Identifies that the mentoring program is needed (219, 230, 449) and feasible (244, 248) • Makes clear goals and concrete plans to support the program and for its execution (219, 221, 233-235, 244, 248, 373, 430, 434, 435, 450) • Balances structure and flexibility to ensure that the mentoring program takes place conforms to ethical standards but is yet able to respond and adapt to mentees' and mentors' characteristics and needs (234).

	<ul style="list-style-type: none"> ○ It also includes: the mentoring and education philosophy, approach, goals, objectives and values, roles and responsibilities of mentors, mentees and host organisation (72, 451, 456, 457, 460-463), mentor and mentee ratio (219, 227, 230) ○ A combination of near peer, peer, group and Novice Mentoring may also be used (219, 227, 230) ○ This is to guide resource planning and allocation (221, 255, 464). ● Delineates codes of practices which may be understood as codes of conduct, standards of practice, professional codes of practice and institutional expectations and guidelines (221, 227, 230, 233, 234) <ul style="list-style-type: none"> ○ Punitive and remediation measures may be designed at this stage to respond to corresponding breaches of codes of practices (352). 	
Recruitment	<p><i>Host Organisation</i></p> <ul style="list-style-type: none"> ● Based on the program goals, recruits interested, motivated, resilient and suitable mentors and mentees keeping in mind optimised mentee to mentor ratios as well as the background of mentors. <ul style="list-style-type: none"> ○ Mentors should be selected from a wide variety of sociocultural backgrounds, and be of a range of genders, interests, preferences, area of expertise/research and traits so that mentees might be more likely to find a suitable match (52, 66, 249, 437, 465, 466) ● Host organisation assesses mentee’s and mentor’s suitability for program <ul style="list-style-type: none"> ○ Mentors may be selected by faculty recommendation, and should also be experienced, willing, capable and competent in the academic and clinical field (248, 373, 411, 434, 441, 467) 	<p><i>Mentees and Mentors</i></p> <ul style="list-style-type: none"> ● Determine if the mentoring goals, outcomes, timelines and mentoring approach and the matching, assessment and support mechanism is suitable for their individual needs (236) ● Align expectations with the program goals and outcomes (236) <p><i>Host Organisation</i></p> <ul style="list-style-type: none"> ● Identify and recruit interested suitable mentors and mentees who are aligned with mentoring program goals (248, 373, 411, 434, 441, 453, 454, 456, 467-472)

	<ul style="list-style-type: none"> ○ Mentors should also have suitable personality traits such as humility, friendliness; be approachable and accessible, generous in giving help, non-judgemental, constructive, and able to tailor feedback to mentees (453, 454, 456, 468-472) ○ They should also be a good role model and be professional, ethical and moral (453, 454, 456, 468-472) ○ Mentees should have suitable skills such as communication skills, should have a positive learning attitude and be professional (453, 454, 456, 468-472) ○ Overall, needs, existing proficiencies, perceived deficiencies, learning styles, personalities may be assessed via a context-dependent, mentor- and mentee- specific assessment method such as informal discussions, interviews, questionnaire or direct observation (6, 10, 11, 16, 37, 125, 223, 231, 271, 276, 342, 355, 359, 405, 410, 429, 439, 473-476). ● Organise briefings for would-be mentors and mentees and align expectations (236) 	
Training	<p><i>Host Organisation</i></p> <ul style="list-style-type: none"> ● Carry out training programs for mentees and mentors (219, 248, 411, 441, 449, 467) to gain desirable characteristics, skill sets, and knowledge as well as provide clarification of the codes of practices that will altogether serve to guide the mentoring approach <ul style="list-style-type: none"> ○ For mentors, this may be through workshops and seminars on mentoring, leadership and team building (219, 233, 235, 248, 251, 373, 411, 432, 434, 435) that may also continue to be held subsequently when mentoring relationships are established (435). 	<p><i>Mentees and Mentors</i></p> <ul style="list-style-type: none"> ● Attain desirable characteristics, skill sets and knowledge from training programs (219, 248, 411, 441, 449, 467) to a minimum competency level (223, 229, 249, 260, 262, 271, 308, 311, 314, 347, 355, 405, 439, 445, 473, 474, 486-491) <p><i>Host Organisation</i></p> <ul style="list-style-type: none"> ● Determine the desirable characteristics, skill sets and levels of knowledge of mentees and mentors (284, 492) ● Design and execute effective training programs for mentees and mentors that should also be flexible to mentee- and mentor-characteristics (235, 244, 255, 430).

	<ul style="list-style-type: none"> ○ For mentees, this may be through briefings, information packs, or intensive foundation courses (233, 436, 438). ● Build a conducive mentoring culture such as by inculcating core values, beliefs and principles (233, 234) so as to enhance autonomy and connectivity (208, 433) and improve recruitment (234, 430, 431). ● Assess the effectiveness of the training programme to improve future iterations (477, 478) through feedback from the mentees and mentors (479-481) and through wider evaluation of the success of the mentoring programs longitudinally such as the mentoring outcomes, effectiveness of mentoring relationship or success in recruitment (51, 478, 482-485) 	<ul style="list-style-type: none"> ● Obtain an accurate assessment of training using suitable tools and domains (51, 477-485)
Matching	<p><i>Host Organisation</i></p> <ul style="list-style-type: none"> ● Evaluate mentors and mentees upon their personal and professional characteristics, goals, abilities, interests and complementary practices and traits (284, 483, 492-498) which may be through self-assessments, CVs later confirmed by the mentee and mentor (483, 495, 496, 499-504) ● Disseminate the mentoring educational tool to mentees and mentors to fill in order to ascertain understanding of competency based stages, projected timeline, goals, skills, competencies in order to better match mentees and mentors. ● Introduce mentees to potential mentors based upon the aforementioned factors, mentees may be provided a list of trained and approved mentors to choose from (244) 	<p><i>Mentees and Mentors</i></p> <ul style="list-style-type: none"> ● Reflect and make an honest assessment of their own personal and professional characteristics, goals, abilities, interests and desired practices and traits in their mentoring partners (483, 495, 496, 500-504) ● Communicate the aforementioned factors to the host organisation for matching (483, 495, 496, 500-504) <p><i>Host Organisation</i></p> <ul style="list-style-type: none"> ● Determine the personal and professional characteristics, goals, abilities, interests and complementary practices and traits required (499) of would be mentees and mentors and infuse these into the ‘criterion based’ (483, 492, 497, 498) matching process ● Identify suitable matches (233, 235, 244, 248, 430)
Pre-mentoring meeting	<p><i>Mentees and Mentors</i></p> <ul style="list-style-type: none"> ● Would-be mentoring pairs meet (36, 343, 499) to discuss their interests and goals, determine the mentoring approach which includes viable timelines, frequency and nature of meetings, responsibilities, roles, codes of conduct, outcome measures, 	<p><i>Mentees and Mentors</i></p> <ul style="list-style-type: none"> ● Align expectations and agreement on mentoring approach to determine if they would like to proceed to the ‘trial period’ (483, 495, 500, 504)

	<p>assessment methods, and support mechanism (keeping in mind guidelines by host organisations) (483, 495, 500, 504)</p>	<ul style="list-style-type: none"> • Mentees should partake in goal-setting to determine own's needs and desired trajectory for development, and communicate this effectively to their mentors (293, 505, 506). <p><i>Host Organisation</i></p> <ul style="list-style-type: none"> • Provide a platform for pre-mentoring meeting (6, 16, 125, 223, 229, 236, 238, 239, 249, 343)
Trial Period	<p><i>Mentees and Mentors</i></p> <ul style="list-style-type: none"> • Mentees and mentors may proceed with a specified and predetermined trial period to determine the suitability of the match. (492, 497, 507-510) <p><i>Host Organisation</i></p> <ul style="list-style-type: none"> • Monitors and assesses suitability of the match throughout the trial period (492, 497, 507-510) • Re-matches mentees to mentors if either the mentee or mentor decides the match was not suitable. 	<p><i>Mentees and Mentors</i></p> <ul style="list-style-type: none"> • Decide if they would like to proceed with the mentoring process and building the mentoring relationship and communicate the decision effectively to the host organisation (492, 497, 507-510) <p><i>Host Organisation</i></p> <ul style="list-style-type: none"> • Identifies mentees and mentors who would like to terminate the mentoring relationship at the 'trial period'
Building the Mentoring Relationship through the Mentoring Process	<p><i>Mentees and Mentors</i></p> <ul style="list-style-type: none"> • Mentors and mentees meet as per guidelines set by the host organisation and at a frequency and location/medium as agreed upon by both parties (237, 428, 487, 511-527). • Provide holistic, accessible, longitudinal, personalised, appropriate, specific and timely support to mentees and mentors to address the changing needs and issues faced by the mentors and mentees (199, 241, 272, 306, 310, 349, 516, 528-539). • Mentors and mentees work towards fulfilment of previously agreed upon goals through a range of methods such as didactic instruction, supervision, coaching, discussion and role-modelling as well as the provision of opportunities for presentation, conferences and networking (453, 454, 456, 468-472, 540) 	<p><i>Mentees and Mentors</i></p> <ul style="list-style-type: none"> • Build the mentoring relationship and meet substages using a balanced approach that is sufficiently flexible to adapt to the stakeholders' characteristics, goals (208, 433) and needs (208, 433) in an iterative process informed by longitudinal assessments and feedback and while remaining within codes of practices (208, 433) to prevent ethical breaches (221, 227, 230, 233, 234). • Be able to provide honest feedback (258). • Mentors should support mentees longitudinally, in an accessible, personalised, timely, appropriate, specific holistic manner (199, 241, 272, 306, 310, 349, 516, 528-539). • Mentors should additionally seek to provide guidance and remediation for mentees when needed (125, 249, 397). • Mentees should undergo self-reflection through the mentoring process, and gain self-awareness on values, goals and needs and be self-motivated (513, 514, 534, 538, 542-546).

	<ul style="list-style-type: none"> • Complete longitudinal assessment in an anonymous manner to the host organisation (330). <p><i>Host Organisation</i></p> <ul style="list-style-type: none"> • Monitoring of mentoring relationships longitudinally such as through both informal feedback and formal assessments (222, 227, 234, 236, 437, 449) to improve transparency and accountability (233, 234) • Provide further longitudinal mentor and mentee training (235, 244, 251, 255, 373, 411, 430, 432, 434, 435) • Continue to adapt the mentoring program in response to feedback (5, 6, 10, 15, 17, 20, 50). • Provide protected time for mentors and mentees (321, 455, 541). 	<ul style="list-style-type: none"> • Mentees should cultivate a positive attitude, accept feedback and continue to be self-motivate to adapt to feedback (513, 514, 534, 538, 542-546). <p><i>Host Organisation</i></p> <ul style="list-style-type: none"> • Be able to accurately and longitudinally assess (233, 234) the mentoring relationship and progress towards reaching goals (222, 227, 234, 236, 437, 449) such as by facilitating/collecting feedback from the various stakeholders in an anonymous, confidential and non-threatening manner matter (258). • Select context-specific assessment tool(s), such as interviews, questionnaires, written reports, documentation of outcomes, validated scales, focus group discussions, include collection of reflections (428-430, 435, 436, 441, 527, 547-553) • Select context-specific assessment domains that may be both objective (e.g. research output, patient outcomes) and subjective (e.g. mentee and mentor experiences, feedback on the mentoring culture) (199, 219, 239, 241, 245, 246, 302, 311, 478, 491, 554-566). • Successfully policing codes of practice, facilitating remediation and prescribing punitive measures as needed. (199, 223, 343, 567) Particular attention should be paid to identifying sexist and racist practices and/or other discriminatory practices. (249, 359, 360). • Provide direct and longitudinal (125, 221, 255, 449, 464, 466, 568) support in a timely and appropriate manner (219, 227, 233, 234, 244, 373, 434, 435, 440, 441)
Post-mentoring	<p><i>Host Organisation</i></p> <ul style="list-style-type: none"> • Formal recognition of mentors for their participation in the program such as through certification, promotions for mentors and/or monetary compensation to promote a culture of mentoring (219, 230, 235, 236, 373, 435, 441). • Facilitate post-mentoring feedback, evaluation and reflection by mentees and mentors which may be 	<p><i>Mentees and Mentors</i></p> <ul style="list-style-type: none"> • Provide feedback and assess the mentoring program in an anonymous manner to the host organisation (237, 428, 487, 511-527) • Reflect on their experience in the mentoring program(13, 235, 548, 569)

	<ul style="list-style-type: none"> ○ Self-assessment of mentee’s personal growth (199, 239, 241, 245, 302, 491, 554-560) ○ Clarity on future career plans (199, 219, 311, 478, 554, 556, 558, 561-563) ○ Improvement in clinical performance (199, 239, 246, 478, 491, 563-565) ○ Research output (199, 554, 556, 566) 	<ul style="list-style-type: none"> ● Graduate from the mentoring program when they have fulfilled the goals previously agreed upon. This is dependent also on the needs of the various parties as well as the level of independence of the mentee. <p><i>Host Organisation</i></p> <ul style="list-style-type: none"> ● Collate feedback and assess outcomes by using suitable context-specific tools and domains ● Provide suitable and sufficient recognition for mentors (219, 230, 235, 236, 373, 435, 441)
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4.9 Conclusion

The Novice Mentoring Framework (NMF) is a pragmatic evidence based approach to structuring the Novice Mentoring process (2, 16, 17). Yet for this theoretical framework to be effectively employed it must be adapted to the setting, environment, culture, goals and resources of the program. This program-relevant, stakeholder-specific and ethically appropriate approach could make the NMF applicable in Novice Mentoring practices in other specialities and settings beyond the research arena. In addition, its principles could help structure other forms of mentoring in nurturing the mentoring relationship and charting the course of their mentoring journey within the confines of the CoPs (19, 22, 23).

Chapter 5. Discussion and Critical Appraisal of key aspects of this thesis

5.1 Overview

Having set out the Novice Mentoring Framework (NMF) in the first part of the discussion section of this thesis, I will critically appraise the primary contributions of this thesis to evaluate its usefulness, assess its benefits and weaknesses, and determine its applicability to mentoring practice in this second part of the discussion section of this thesis (570). I begin with critically analysing the Systematic Evidence Based Approach (SEBA) methodology (2, 23, 79-83) synthesised from my systematic scoping reviews of SRs, SSRs and NRs in Palliative Medicine Education (PME) in Chapter 2. I will then proceed to critically appraise the concept of the ‘fit for purpose’ mentoring relationship and mentoring ecosystem that I similarly derive from my reviews in Chapter 3. Finally, I will critically appraise the NMF forwarded in Chapter 4. The NMF was developed upon scrutiny of the two NRs in SEBA and two SSRs in SEBA featured in Chapter 3 (2, 14, 22).

To ensure a structured approach, I adapt Burls (571)’s approach to critical appraisals which defines the process of critical appraisal as “*carefully and systematically examining a research report to judge its trustworthiness, make sense of the results and assess the relevance of the findings in a particular context*” (571), page 2). To provide structure to this process I also employ the Critical Appraisal Skills Program (CASP) checklist (570) which is framed around Burl’s three key questions which are “*are the*

results valid?”, “*what are the results?*” and “*would the findings help locally?*” (571), page 2). However, as this approach to critical appraisals and the CASP checklist (570) do not effectively deal with systematic scoping reviews, adaptations to both approaches were called for.

5.1.1 An approach to critical analysis for qualitative data

One of the key reasons for necessary adaptations to Burls (571)’s approach to critical appraisals is the acknowledgement that SEBA revolves around qualitative studies that do not lend themselves to determinations of validity (175). Cypress (175) states that validity can be defined as “*as the state of being well grounded or justifiable, relevant, meaningful, logical, confirming to accepted principles or the quality of being sound, just, and well founded*” (175), page 256). Whilst Leung (572) suggests that validity within qualitative research refers to “*whether the research question is valid for the desired outcome, the choice of methodology is appropriate for answering the research question, the design is valid for the methodology, the sampling and data analysis is appropriate, and finally the results and conclusions are valid for the sample and context*” (572), page 325), the employ of the term ‘validity’ in qualitative research remains far from the norm.

Opposition to the use of validity in qualitative research is influenced by the fact that the notion of validity is rooted in positivist thinking (120). Guba and Lincoln (573) state that “*it is not appropriate to judge Constructivist evaluations by positivistic criteria or standards or vice versa. To each its proper and appropriate set*” (573), page 251). Instead, validity in qualitative studies is associated with terms such as “*truth value*” (574), page 34), “*authenticity, goodness, adequacy, trustworthiness, verisimilitude,*

credibility, and plausibility” (574), page 257). In the Oxford Handbook of Qualitative Research, Trent, Cho (575) suggest that validity could be traced to the concept of credibility which they define as the “ elements that allow others to recognise the experiences contained within the study through the interpretation of participants’ experiences; checking for the representativeness of the data as a whole; member checking involving returning to the participants to ensure that the interpretations of the researcher are accurate representations of participants’ experiences; peer debriefing; prolonged engagement” (575), page 5).

Based upon Trent, Cho (575)’s definition, I thus adapted Burls (571)’s approach to critical appraisals and the CASP checklist (570) to foreground credibility of the research as the first question. A structured approach to critical appraisals not only represents another novel contribution forwarded by this thesis but also serves as a reproducible framework to appraise the key contributions drawn almost exclusively from PMI-led reviews and studies.

5.2 Critical Appraisal of the SEBA methodology

5.2.1 Are the results credible?

In keeping with my adapted approach to critical appraisals, the SEBA methodology can be deemed credible due to its employ of clearly stated research questions, a structured, reproducible qualitative research methodology (2, 23, 79-83), clear inclusion and exclusion criteria, appropriate data collection methods and clarification of the role and influence of the researcher on the research process that are in keeping

with published standards (2, 23, 79-83). In addition, the SEBA methodology's use of the Split Approach and the Funnelling Process ensures rigorous, reproducible and transparent data analysis that meet the CASP checklist requirements (570).

However, it can also not be ignored that the SEBA methodology discussed here is designed and employed by me and my team in the PMI which raises questions as to my biases even as I apply the CASP checklist requirements (570). Indeed, it is over these concerns that the SEBA methodology has been published as I synthesised this thesis to provide external and independent oversight of SEBA as it progressed through the peer-review process of publication in reputable journals (2, 23, 79-83). I believe that this does enhance the trustworthiness of SEBA. As a result early versions of the Split Approach featured in Chua *et al.* (14)'s review entitled "*Structuring Mentoring in Medicine and Surgery. A Systematic Scoping Review of Mentoring Programs Between 2000 and 2019*" and Ng *et al.* (33)'s review entitled "*Assessing mentoring: A scoping review of mentoring assessment tools in internal medicine between 1990 and 2019*" were published in the Journal of Continuing Education in the Health Professions and PLOS One.

Similarly, early iterations of the SEBA methodology including Kow *et al.* (23)'s review of ethical issues in mentoring in medical schools, Hong *et al.* (576)'s review of postgraduate ethics education, Zhou *et al.* (577)'s review of teaching and assessing empathy in medicine, Bok *et al.* (80)'s review of interprofessional communications for medical students and Ho *et al.* (578)'s review entitled the "*impact of death and dying on the personhood of medical students*" study of the impact of have been published in BMC Medical Education; Ngiam *et al.* (79)'s review of the effects of

caring for terminally ill children on the personhood of physicians were published in the American Journal of Hospice and Palliative Medicine; Kuek *et al.* (579)'s review of death and dying in the intensive care on the personhood of a physician's personhood that was published in BMC Philosophy, Ethics, Humanities, and my own proffering of an early version of the Novice Mentoring Framework was published in the Journal of Medical Education and Curricular Development (2).

5.2.2 What are the results?

The SEBA methodology (2, 23, 79-83) was set out based upon evidence that prevailing approaches to the review of mentoring practice suffer from significant limitations. In Chapter 2, I show that SRs, SSRs and NRs cannot meet the nine key criteria required of an effective methodological approach for the study of mentoring. These include the need for a Constructivist ontological and a Relativist epistemological approach to collate multisource data at multiple time points along a mentoring journey to sketch a holistic and longitudinal picture of mentoring as a sociocultural construct (15). Use of such diverse multisource, longitudinal, qualitative, quantitative and mixed method data sources underscores the need for a structured approach as personalised, historical, contextual, psychosocial and sociocultural informed views, perspectives and opinions of different stakeholders on their mentoring experiences are employed to facilitate the '*construction of larger narratives*' (184), page 55) underlining SEBA's Relativist credentials (173).

5.2.2.1 Contributions from SRs

The SEBA methodology draws on SR's employ of an expert team to help delineate robust search terms and the inclusion criteria (2, 23, 79-83), employ trained researchers

who use identical search terms and Population, Intervention, Comparison, Outcomes, Study Design (PICOS) formatting (153, 201). Consensus based decision making between the researchers on the abstracts to be reviewed, full-text articles to be included, and those drawn from snowballing references in the included articles introduces accountability, transparency and reproducibility to the review process, reduces the possibility of omitted data (249) and facilitates the screening and selection of grey literature (153, 201) within the SEBA methodology. A further contribution from prevailing SR methods is the requirement for quality appraisals of the included articles which sees SEBA employ MERSQI (580) and COREQ (200) quality appraisals of included articles. This has also inspired efforts to determine the impact that grey literature and other non-evidence based data might have upon the final direction of the narrative through the novel approach of a separate review to compare the themes drawn from thematic analysis of evidence based data and data from non-evidence based articles (165, 166).

SEBA's use of the Split Approach can also be traced back to SR's focus on reproducibility and transparency. Employed in publications spanning medical humanities, personhood and mentoring, and overseen by the expert team the Split Approach's concurrent employ of Braun and Clarke (171)'s approach and Hsieh and Shannon (172)'s approach to directed content analysis, fosters transparency and trustworthiness in the search processes.

5.2.2.2 Contributions from SSRs

A key contributions of SSRs is the inclusion of grey literature to capture personalised accounts of mentoring experiences, particularly from the viewpoint of mentors and

provide a holistic view and insight into the longitudinal mentoring process (129). This is aided by SSR's broad inclusion criteria which allows the SEBA methodology to contend with mentoring's entwined nature (9, 16, 17). The wide inclusion criteria also provides valuable insights into the entwined links between mentoring structure, culture, Codes of Practice (CoP)s and the mentoring framework and approach (14, 15, 19). Here the 'widely cast' inclusion criteria facilitated the research teams' and expert teams' understanding (14, 15, 19). This is critical to the employ of the Jigsaw Perspective where a holistic appreciation is required to piece the jigsaw of data together to create a comprehensive view of the data (14, 33, 185).

It is from use of the Jigsaw Perspective and the need to ensure that there is adequate justification for the combination of different elements of the data that the Funnelling Process was created (14, 33, 185). Here, the tabulated summaries within the Funnelling Process allow comparisons with the conclusions drawn from the Jigsaw Perspective and justification for the conclusions drawn (14, 33, 185) as evidenced when the themes and categories from the narratives in Chapter 3 were reviewed and compared and combined to create a more holistic perspective in Chapter 4 as well as when triangulating data in Section 3.2 from the NR in SEBA of ethical issues in mentoring with the data in Section 3.1 from the NR in SEBA of Novice Mentoring.

Acknowledging the potential bias that may be introduced from grey literature, the SEBA methodology adopts the Funnelling Process to compare the themes drawn from primary data articles and those drawn from secondary data sources (14, 33, 185). This comparison of data sources informs reviewers of the impact that secondary data

sources may have upon the themes used in the synthesis of the narrative which fosters transparency and accountability (14, 33, 185).

5.2.2.3 Contributions from NRs

Whilst SSRs seek to knit together the various parts of the mentoring process described by SRs, NRs attempt to weave a personalised account of the experiences throughout the mentoring process. Yet rather than being simply used for its ontological and epistemological position that aid in drawings links between previously distinct aspects of the mentoring process, NRs also play a critical role in overcoming the limitations posed by the piecemeal nature of regnant studies of mentoring that have for so long ignored mentoring's entwined nature. NRs also have a critical role in scrutinising contextual nuances and allow occurrences, that on first glance might seem unrelated, to be seen in a new light (143). Indeed, the Jigsaw Perspective owes much to this perspective.

NR's use of 'stories' to forward a narrative is also consistent with the notion of mentoring as a sociocultural construct. Here, NRs capture the individual values, beliefs, principles, goals, roles, responsibilities, and motivations of individual stakeholders and their clinical, academic, personal, research, professional, ethical, psychosocial, emotional, cultural, societal, legal, educational, historical, sociocultural, ideological, and contextual factors within the microenvironment to provide a comprehensive view of the mentoring experience in keeping with a Relativist epistemological perspective (173).

There are lessons too to be learnt from the apparent threats posed and criticisms of NRs largely unstructured, opaque and difficult to reproduce approach to search strategies and article selection, analysis, the lack of justification for the weight afforded the data accrued and the direction taken in the synthesis (23). These considerations inspired the structured, expert-led, team based approach to the SEBA approach (23). Similarly, evidence of an unstructured approach underscores the use of a PICOS approach, the employ of independent searches and analysis of the data by a team of researchers and the application of consensus based decisions on the final list of abstracts, articles to be included and themes to be used. It also undergirds the basis for the use of Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA), PICOS and tabulated summaries. Concurrently the expert team and the independent research teams enhance the use of the Split Approach, Jigsaw Perspective and the Funnelling Process injecting accountability, oversight, independent verification of findings and structure into proceedings (14, 33, 185).

5.2.2.4 Inculcating elements of SRs, SSRs and NRs into SEBA

Aside from the facets discussed, perhaps less apparent yet nonetheless drawn from lessons learnt from SR and SSR practice is the SEBA methodology's reiterative process (2, 23, 79-83). The impact of this approach is clear from the general evolution of the SEBA process.

In the beginning, the Split Approach was created after it was found that thematic analysis of the data did not always reveal themes that focused upon areas of research interest highlighted by content analysis (14, 33, 185). Yet it was noted that even with the aid of deductive category application proposed by Hsieh and Shannon (172)'s

approach to directed content analysis, content analysis did not always reveal categories that moved beyond the central focus of the paradigm articles that they were based upon. Indeed, this dissonance is evident in Section 2.2.1 in the SSR of SR use in PME, Section 2.2.2 in the SSR of SSR use in PME, Section 3.1 in the NR in Novice Mentoring and Section 3.2 of the NR of ethical issues in mentoring. In these four sections, it took the combination of themes and categories, carried out by independent researchers and overseen by the expert team, to reveal the overall data. However, with use of the Split Approach being novel, it resulted in some consternation amongst the other authors when I first introduced the idea. When applied, it resulted in significant discussions between the research team and the reviewers at the respective peer reviewed journals. However, with careful delineation of the approach and comparisons of the themes and categories as highlighted in Section 2.5.2.2, the research team, the expert team, the external reviewers we asked for comments and the editors of the two peer reviewed journals reviewing the two articles agreed that a combined Split Approach did add new insights and provided a more complete perspective of the available data (14, 33, 185).

These insights underpinned the use of the Split Approach in two PMI led reviews entitled “*Assessing mentoring: A scoping review of mentoring assessment tools in Internal Medicine between 1990 and 2019*” and “*Structuring Mentoring in Medicine and Surgery. A Systematic Scoping Review of Mentoring Programs Between 2000 and 2019*” (14, 33, 185). The decision by both peer reviewed journals to publish the articles inspired the case for the use of the Split Approach and highlighted the basis of regular engagement with the expert team in the SEBA methodology (23).

The reiterative process was also instrumental in the decision to include my subsequent proposal for the Funnelling Process. Here, the expert team highlighted the need to consider the effects of such resource heavy demands on the program resources and spurred the creation of the concept of 'equipoise'.

5.2.3 Would the findings help locally?

To address this aspect of my adaptation of Burls (571)'s approach to critical appraisal and the CASP checklist (570), draws to attention several aspects of the SEBA.

5.2.3.1 The Expert Team

With the expert team being involved in all aspects of the SEBA methodology, their influence cannot be ignored (2, 23, 79-83). Close interactions between the expert team and the research team may even see the former becoming incorporated into the latter, raising questions as to the expert team's objectivity in evaluating the various stages of the SEBA methodology. In practice, this has not been seen.

Whilst it enhances methodological rigour and is validated in part by recent SEBA methodology guided publications in peer reviewed journals, the sustainability of the expert team's large and intensive presence in all aspects of the SEBA methodology process has raised questions about the feasibility of this approach. The same may also be asked of the significant sized research team needed to actualise the SEBA methodology (153, 201). Overall, these workforce requirements, training, feedback and oversight by the expert team and the use of a large research team raise questions as to the sustainability of the SEBA methodology given the financial backing required to host such a research program. It also underlines the need for an effective

recruitment, vetting and training of the research and expert teams as well as establishing clear expectations and CoPs.

The “*ideological and theoretical positions*” (584), page 6) of the expert team as well as their interests and biases may not be immediately clear at recruitment and even upon training, and these considerations may influence the various stages of the SEBA methodology. Similarly, personal values, beliefs, motivations, interests, and principles of members of the expert team may affect their analyses and interpretation of the data as well as their guidance on the direction of the discussion or narrative. These considerations underline the importance of continuous support and assessment of the expert team.

This has significant ramifications upon local practice where experts in the field may not always be easily accessible.

5.2.3.2 Maintenance of effective communication

Perhaps a less obvious but nonetheless critical issue is the need for an effective robust and accessible communication. This is especially important to support researchers as they proceed through the various stages of the SEBA process (4, 32). This has been possible through synchronous discussions using Zoom and asynchronously through use of WhatsApp, TigerText and emails. Yet, the sustainability and increasing demands on the research and expert teams raise questions on the sustainability of using these platforms as part of the SEBA methodology.

5.2.3.3 Time considerations

Perhaps no less significant is the demands upon the time and availability of the members of the expert and research teams. Here use of synchronous and asynchronous communication platforms have saved time as have coordinated discussions.

5.2.4 Data limitations

Perhaps the most important consideration with regards to the SEBA methodology is the quality of the data drawn from piecemeal study of mentoring focused on a specific ‘stage’ of the mentoring process rather than having viewed the mentoring process and interactions longitudinally. Further restrictions to the quality of data is seen in the poorly defined terms, heterogenous methodologies used in mentoring and the lack of a consistent and effective assessment tool particularly with continued use of “*Cartesian reductionism and Newtonian principles of linearity*” (58), page 21) based tools that significantly impair the quality of the data that researchers have to work with. The tools used to capture mentoring data are also neither multisource nor have they satisfactorily considered the evolving nature of the mentoring process and the mentoring environment (585).

In addition, much of the data accrued is also biased by focus upon articles published in English which leaves much of the conclusions drawn decidedly with a North American and European perspective. This is a concern given that mentoring is a sociocultural construct suggesting that many of these North American and European findings of limited use in other settings where distinct sociocultural factors and clinical, educational, and healthcare financing structures shape practice, expectations and goals (2, 23, 79-83). Bias is also apparent in the use of data drawn from piecemeal

study of mentoring when data from a specific ‘stage’ of the mentoring process is extrapolated to the mentoring process as a whole or to the program in general.

These limitations suggest that whilst SEBA mitigates many of the issues that plague prevailing research methods, it remains hampered by the quality and limitations of regnant tools and the data they capture. However, prospective data using semi-structured interviews of mentors and mentees, which is considered the gold-standard in assessing mentoring and captured in my two recent publications “*Mentoring stages: A study of undergraduate mentoring in palliative medicine in Singapore*” (1) and “*Combined novice, near-peer, e-mentoring palliative medicine program: A mixed method study in Singapore*” (4) is consistent with the findings of the SEBA driven reviews. Here it is suggested that the overlay of data from different stages of the mentoring process drawn from various studies provides a longitudinal perspective of mentoring whilst the introduction of grey literature and use of the Jigsaw Perspective provide a more holistic view of mentoring that has been missing thus far. However, the true impact on local practice will only be evident when SEBA independently is used outside the PMI program by teams not directly affiliated with it.

There are two other issues with regards to SEBA that need to be considered if the impact on local research is to be effectively considered. The first is my role in SEBA and the potential bias that may be introduced. The second is the notion that SEBA represents a conflated attempt to overcompensate for the problems faced by prevailing approaches. Both raise questions as to SEBA’s applicability and sustainability and as well as its overall benefit in terms of the provision of meaningful and practice changing data (2, 23, 79-83).

5.2.5 Critical review of my role in the analysis of data and in the synthesis of Narrative Reviews

Considering the potential use of SEBA beyond the PMI brings into sharp focus my role in the SEBA process. Here, my role cannot be ignored given the subjective nature of much of the data analysed. To aid better appreciation of this aspect, I will detail my interests and the solutions that I propose to overcome the conflicts of interests that may arise to extend the use of SEBA 'locally'.

To reiterate, my primary interest is to maintain the Palliative Medicine Initiative (PMI), the Novice Mentoring program that I initiated (1, 4). As a result, addressing threats to the mentoring process is important to me as is advancing a viable approach to combat concerns about Novice Mentoring (21-23).

For philosophical transparency (189), I hold a mental model (190) that mentoring is sociocultural construct that is best studied through a Constructivist approach. Perhaps unsurprisingly a critical consideration that drove my design of the study of mentoring was my belief that mentoring was an individualised process customised to provide prompt, accessible, individualised, necessary, continuing, and comprehensive support to mentees over the course of a personalised process. This notion and my Constructivist perspective of mentoring as a sociocultural concept influenced my analysis and may have biased my reading of positivist and post positivist perspectives (85, 123). However, to ensure that these biases do not hijack the manner that data is analysed, the synthesis of the narratives and conclusions drawn requires the inputs of a team of clinical, academic, research and educational experts to evaluate the findings

of each stage of the SEBA methodology. Use of my published material in peer reviewed journals further enhances the trustworthiness of the studies. This thesis is based on 16 reviews and studies that I oversaw either as the first author or as the senior and last author of PMI projects. The rest of the authors were either colleagues or medical students who were part of the PMI program. To further underline my role in these publications, none of these authors had published on mentoring prior to these publications or have published on the subject since except for Dr Stephen Mason.

Concurrently, in part, my decision to submit each aspect of the study with every chapter in this thesis to peer reviewed journals was to enhance credibility and transparency in the analysis of the data. I acknowledge that for NRs in this thesis, I led all stages of the expert oversight, training expert teams in the use of SEBA and mentoring of new mentors. Whilst there was involvement of other senior mentors, I wonder how much of the voice of the expert team was ultimately my own. These considerations bear some scrutiny and question as to whether the expert team fulfilled the roles set out by SEBA. To be clear, this was a double-edged sword. On one hand to do so would underline the work presented here as mine rather than the fruits of a team of experts. However, by doing so I may have relegated the role of the experts and senior reviewers brought in to counter the possibility of bias. This is another reason that all the work carried out thus far in this thesis have been submitted for publications or have been published in peer reviewed journals to provide reassurance of scrutiny of the processes, data, and findings. In addition, in other PMI projects that have resulted in successful peer reviewed mentee-led publications such as teaching and assessing ethics, professionalism, communication and professional identity formation, a more representative working style amongst the experts suggests that effective expert

involvement under the auspices of the SEBA methodology is possible (2, 23, 79-83). Indeed, the publications of the various aspects of this thesis may be seen as a barometer of the progress of this thesis and my developing ideas on the subject.

Overall, the SEBA methodology offers medical educationalists and researchers in Novice Mentoring an opportunity to circumnavigate many of the limitations facing the review of Novice Mentoring but, as I have highlighted, some issues remain. The demands for an expert team and well-resourced research team lie beyond the remit of most amateur reviewers or reviewers not affiliated to large research institutions (2, 23, 79-83). There are also questions about the need for balance between the desire for accountability, transparency and reproducibility of the SEBA methodology findings and the impact of requiring a large group of trained and experienced researchers to carry out independent searches of the various search engines upon the sustainability of the review process (2, 23, 79-83). Similar questions are also raised about the viability of relying on experts in the field to participate as part of the expert team. The sustainability of having so many experts cooperate and guide the processes effectively when opinions upon mentoring vary and when mentoring lacks both a consistent approach and theory is questionable. How members of the expert team are selected, briefed, cooperate, and agree upon a course of action and CoPs remains to be elucidated. Similarly, how disagreements between the research and the expert teams are determined (2, 23, 79-83).

There is also a sense that much of the work in the review of the themes/categories in the Split Approach, Jigsaw Perspective and the Funnelling Process is overseen and influenced by the expert team. This raises questions about the actual roles of the expert

and research teams. Whilst I have argued that the expert team plays a more consultative role in the PMI, present accounts of the role of the expert team could be misinterpreted to relegate the role of the research team to ‘data gatherers’ with little influence on the course and the content of the synthesis of the narrative. Similarly, with the expert teams involved, what would their influence be upon the NRs? Would the NR be merely a reflection of the beliefs and biases of the various experts in the team even when a structured framework is employed? This lack of clarity on the role of the expert team spirals to include questions as to their influence in shaping the themes/categories identified through their impact upon the SEBA’s sequential process, snowballing reviews, the Jigsaw Perspective, Funnelling, Process, reiterative process and the synthesis of the narrative process (2, 23, 79-83).

Thus, whilst the SEBA methodology offers significant opportunities for overcoming many of the methodological deficits faced in the review of mentoring practice, there are a number of practical considerations that must be addressed before it can truly find its place in research in mentoring within medical education (2, 23, 79-83). This must include improving assessments of the mentoring process. The solution may lie with the mentoring ecosystem.

5.3 Critical Appraisal of the Mentoring Ecosystem

5.3.1 Are the results credible?

My adapted version of Burls (571)’s approach and the CASP checklist (570), suggests the concept of the mentoring ecosystem is credible given the employ of SEBA and its

clearly stated research questions, its structured and appropriate employ of qualitative research methodology including clear inclusion and exclusion criteria, a PRISMA diagram, appropriate use of data collection methods, rigorous data analysis by virtue of the Split Approach, the Jigsaw Perspective, and the Funnelling Process that were all overseen by the expert team and the host organisation, a clear statement of findings in the synthesis of the NR and the fact that the mentoring ecosystem has been published in a peer reviewed journal (2).

5.3.2 What are the results?

The concept of the mentoring ecosystem comes almost exclusively from my work in Novice Mentoring, built from my qualitative studies of mentee experiences in the PMI and my reviews of the ethical issues in mentoring and mentoring structure over the course of this MD thesis. The mentoring ecosystem (Figure 3.4) captures and maps the course of individual mentoring relationships (1, 17, 32) as they move through the competency based mentoring stages (1). It also considers and the factors that influence ‘fit for purpose’ mentoring relationships (6, 16, 17) including stakeholder’s micro-environments, their fused meso-environments and the wider macro-environments (14, 15, 19). The mentoring ecosystem also encapsulates efforts by the host organisation to find ‘balance’ between personalisation and consistency within the mentoring process (19) and adjust the mentoring framework to facilitate the achievement of mentoring milestones, competencies and the mentoring goals of the particular stage (14). This process also means that the mentoring ecosystem must reflect the possible ramifications of shifts in practice, the impact upon the mentoring culture and structure and due attention to the mentoring process further downstream (14). This allows

mentoring ecosystems, outlined in Figure 3.5, to be seen as a mentoring tool and as a means of guiding decisions on changes to the mentoring approach.

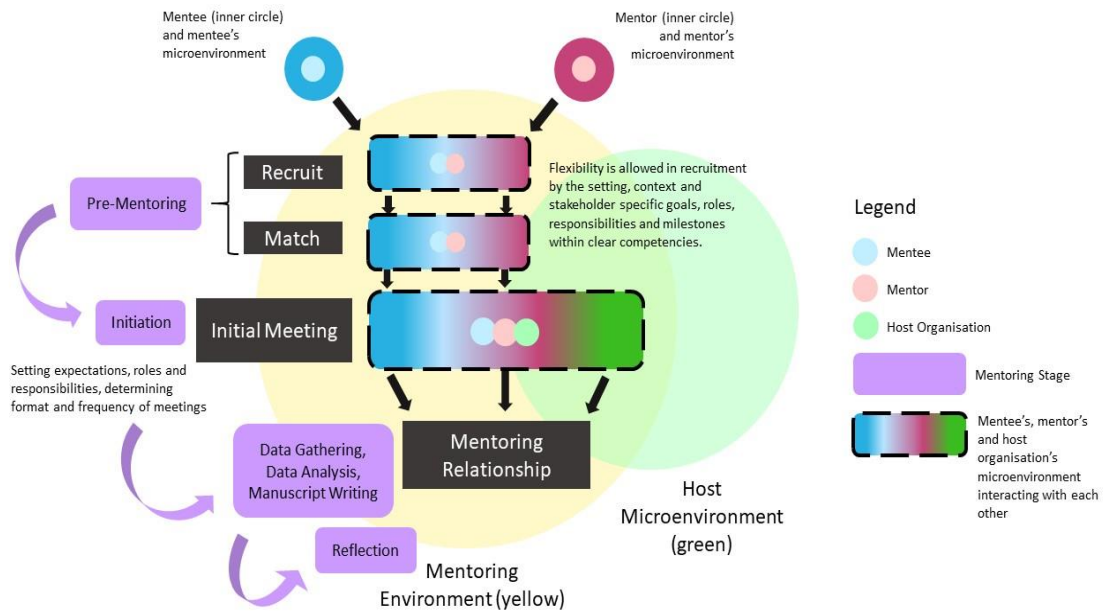


Figure 3.4: The Mentoring Ecosystem

5.3.3 Would the findings help locally?

It is in considering the applicability of the mentoring ecosystem that I will consider the applicability of the 'fit for purpose' mentoring relationship and use of the mentoring ecosystem as an education tool. This takes the form of three considerations.

5.3.3.1 Questioning the mentoring ecosystem

Scrutiny of the mentoring ecosystem reveals a largely theoretical concept. Whilst it sets out to chart the course of mentoring relationships through a sequence of 'fixed' stages of the mentoring process and attempts to account for the evolving mentoring

environment that influences the quality and sustainability of the mentoring relationship, the mentoring ecosystem falls victim to a number of issues (2). To begin to appropriately reflect the progress and course of the mentoring relationship the mentoring ecosystem is dependent on 'real time' assessments. Some of these issues can be addressed by use of competency based mentoring stages to evaluate achievement of milestones and competencies and assessments of 'balance' and equipoise to predict and support change.

Whilst this suggests effective, timely, appropriate and holistic consideration of the micro-environment is possible, evaluations of competency based mentoring stages can only be carried out if the stages are effectively charted, the goals of each stage are clearly established, the competencies are individually laid out, mentors are trained, and mentees are aware of the expectations upon them at each stage of the mentoring stages once there is an effective means of assessing these stages (1). Thus, the mentoring ecosystem can only function if the goals, expectations, codes of conduct, assessment methods and time points and personalised and common competencies are agreed upon and policed from the start of the mentoring relationship. This, in turn, underscores the need for the mentoring ecosystem to be part of a formal mentoring program with effective support and active oversight by the host organisation and involve well trained and supported mentors who can elucidate changes in the mentee's micro-environments and afford mentoring support in a timely manner (15).

A further consideration is that despite having milestones for common and personalised competencies, problems are only identified after the stage, timelines or milestones have passed. Even when milestones are met there is little by way of assessing

mentoring dynamics nor determining how oversight, remediation and support is to be provided. This is critical as these retrospective assessments rely on the presence of regular and holistic assessments of the progress of the mentoring relationship, the mentoring project, the stakeholder needs and changes to the mentoring approach to determine if there is a need for adaptations to the mentoring approach (1, 4).

Overall, whilst this novel concept of the mentoring ecosystem (Figure 3.5) draws on two distinct PMI-led NRs in SEBA, its use as an education tool, a map of the mentoring process and even as a decision-making tool to guide adaptations to advance 'fit for purpose' mentoring relationships, remains speculative (6, 16, 17). This is not helped that the mentoring ecosystem's focus upon a singular mentoring relationship and neglect of the impact of other mentoring relationships within the program, particularly when other mentoring ecosystems within the program involve the same mentor (2).

This focused perspective is a problem given that it obscures deliberation on the viability of adaptations to the mentoring approach both in terms of achieving balance between consistency and flexibility with a 'fit for purpose' mentoring relationship (50) and weighing up the concept of 'equipoise' which seeks to counterbalance demands to maintain the resources within the program with efforts to ensure that the mentoring program remains adaptable to contend with the needs of the various stakeholders in different mentoring relationships (2). Such determinations see the host organisation balance the need to support changes in the mentoring approach in one mentoring relationship in light of added demands upon the mentor's time whilst considering its effects upon the other mentees currently mentored by the particular mentor (19). Being unaware of these considerations reduces efforts to align expectations and to achieve

continued 'buy in' from mentees to continue investing in their mentoring relationships, particularly over the long duration of the mentoring process and in the light of challenges and changes to the mentoring dynamics and setting (2). Failure to appreciate these wider considerations upon the host organisation and mentor may curtail the mentee's willingness to continue the mentoring relationship.

It is also possible to argue that despite the presence of the team of researchers and experts and efforts to make the narrative reproducible, transparent, and accountable through the SEBA methodology, the mentoring ecosystem is an aberration fed by my own bias (2, 23, 79-83). Whilst it is built around now published elements of the mentoring process which are the mentoring relationship, mentoring nature and the mentoring environment, the mentoring ecosystem has not been validated in its entirety nor importantly by other mentoring programs and authors. Being based on data from research mentoring programs may also be a source of further bias given that research mentoring's structure is built around the stages of the research process as well as the common and personalised competencies within each mentoring stage (1, 4). Such consistent stages and thus well demarcated common and personalised competencies within each mentoring stage may not be easily demarcated in mentoring programs set in the clinical setting nor when Novice Mentoring is used to achieve mentoring objectives beyond the research realm.

5.3.3.2 Extrapolating the mentoring ecosystem to the clinical mentoring sphere

The gaps highlighted above raise questions as to the viability of extrapolating the concept of competency based stages of mentoring from a structured context such as a research mentoring setting to a clinical setting as intended for the PMI (1, 4).

To begin, mentoring in the clinical setting is unlikely to be as structured as it would be within the research setting (1, 4). The different stages within clinical mentoring are also likely to entail a variety of competencies that may be met over several settings and conditions, making assessment of stage based progress complicated. Similarly, personalised competencies based upon the mentee's availabilities, contextual considerations, goals, roles, responsibilities, experiences, and skills would also be variable. The mentoring ecosystem in clinical settings such as Emergency Medicine, Trauma Surgery and Intensive Care are also more fluid and less likely to adhere to hard and fast frameworks (15). As a result, meetings and assessments will be less structured and subject to clinical contingencies, making critical decision points for progress to the next stage of the mentoring process variable. Whilst some competencies can be assessed by prevailing work based assessment tools, assessments of professional identity formation, professional characteristics and attitudes are still wanting and will compromise decision making on mentoring progress and adaptations to the mentoring approach (2). Oversight of the mentoring process, relationship, assessments, and progress will also be difficult as will remediation and counselling processes. Mentor training and mentee and mentor support mechanisms which are critical to the nurturing of personalised and enduring mentoring process are also placed in jeopardy by an unstructured process that ultimately leaves the mentoring program at risk of ethical issues (20).

Aside from issues related to structure, the nature of clinical mentoring often means mentoring occurs in a variety of settings. This makes control of the mentoring culture and the environment difficult to predict much less control. Mentoring in clinical

practice involves a variety of parties each with influence upon the mentoring process (586). This may be especially evident in the Emergency Medicine, Trauma Surgery and Intensive Care settings where interactions between various parties within the practice setting are fleeting and yet often no less impactful and thus still have prolonged effects upon the mentee. Indeed, I argue in my article entitled “*Educational roles as a continuum of mentoring’s role in medicine – a systematic review and thematic analysis of educational studies from 2000 to 2018*” (3), where I reviewed the different roles of mentors, that mentoring comes in all shapes and forms and thus these brief interactions between mentee and different members of the care team may be impactful and offer positive and negative role modelling. Thus, arguing that brief interprofessional interactions need not be considered mentoring interactions is contentious (3). Concurrently, how micro-environments within fluid and less organised settings interact and how there could be control of the meso- and indeed macro-environments in these instances are also open to conjecture as would structuring the course of these interactions (15).

Whilst clearly beyond the remit of this thesis, it could also suggest that the notion of the mentoring ecosystem, at least within the clinical setting needs to be expanded to consider the various parties within the work and mentoring environment (2, 15). Indeed, it could be argued that in the age of interprofessional working, it is the professional responsibility of all members of the clinical team to mentor junior clinicians (587). This means all professionals in the work environment should play mentoring roles and the mentoring ecosystem would thus necessarily expand to encapsulate the work environment (587). The patient and their family too should be afforded a role within this concept (3).

In the fluid space of clinical practice, supporting mentees (588) in a timely, appropriate, specific, personalised, accessible, actionable and holistic manner (23, 79) may become as difficult as structuring and considering the mentoring dynamics of each interaction, thus raising the potential for ethical issues in mentoring. As a result, building a mentoring structure like that highlighted in the NMF in Chapter 4 and applying it to the clinical setting maybe a step too far.

5.3.3.3 Questioning the concept of ‘fit for purpose’ mentoring relationships and the mentoring ecosystem as an education tool

The design and employ of the mentoring ecosystem as an education tool may be seen as a means of educating stakeholders to the concept of mentoring ecosystems and ‘fit for purpose’ mentoring relationships (Figure 3.5). It might be argued that both concepts serve to align expectations, to educate stakeholders of their roles and responsibilities and to prepare them for the evolving nature of the mentoring process and assessments of general and specific competencies at each stage of the mentoring process (2). Indeed, it may also be argued that in light of the concept of ‘equipoise’, better understanding of the decisions made by the host organisation and the mentor in determining if the ‘acceptability’ of adaptations to the mentoring approach will help maintain stakeholder investment in the mentoring process (2). However, both the mentoring ecosystem and, to a lesser level, the concept of ‘fit for purpose’ mentoring relationships do not fully acknowledge the wider considerations affecting the mentoring process (Figure 3.5) but are focused upon a singular mentoring relationship within a much larger mentoring program. Superficially at least, it may be suggested

that relegating the importance of the concept of ‘equipoise’ raises questions about the applicability of these concepts (2).

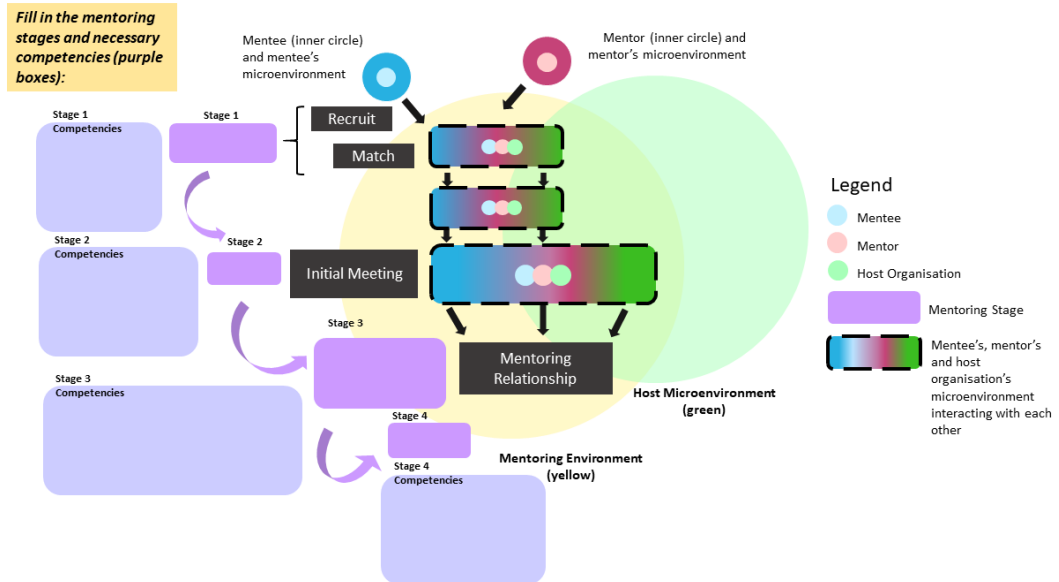


Figure 3.5: Mentoring Ecosystem as an Educational Map

In truth, neither of these concepts were developed to move beyond the context of the single mentoring relationship. Thus, whilst these concepts are applicable within the mentoring micro- and meso-environment and in helping individual mentoring relationships, to be applicable within local mentoring practice they must consider the concept of ‘equipoise’ to fully appreciate decision making at the mentoring macro-environment and to prepare the various stakeholders within the program for their mentoring experiences (2).

5.4 Critical Appraisal of the Novice Mentoring

Framework in the research settings

Concerns about the viability of structuring the mentoring process in the clinical setting and the applicability of the concept of the mentoring ecosystem raise questions about the Novice Mentoring Framework (NMF) beyond the research and academic settings. Acknowledging the contextual differences, I will critically appraise the NMF within the research setting and clinical setting separately. I will begin with the critical review of the NMF in the research setting.

5.4.1 Are the results credible?

Based upon the adapted Burls (571)'s approach and the CASP checklist (570), use of the NMF suggests that the results of studies leading up to the delineation of the NMF are credible given that the two NRs and two SSRs in SEBA behind the NMF had clearly stated research questions, employed the qualitative research methodology appropriately, were designed appropriately and in keeping with published applications of the SEBA methodology, employed clear inclusion and exclusion criteria, set out PRISMA diagrams to enhance reproducibility and transparency and underscore their structured approach. The credibility of the findings was also based on employ of appropriate data collection methods, rigorous data analysis by virtue of the Split Approach, the Jigsaw Perspective, and the Funnelling Process that were all overseen by the expert team and the host organisation. Finally, the two NRs and two SSRs in SEBA behind the NMF each established clear statements of findings. Indeed, the NMF is built on three earlier published versions of the mentoring structure (1, 2, 17).

However it should also be added that the NMF has not been used in mentoring programs yet and thus remains an unproven theoretical concept.

5.4.2 What are the results?

This latest iteration of efforts to inject consistency into the mentoring structure includes the competency based mentoring stages. To begin, the NMF is structured to be part of a formal mentoring program that will ensure oversight of the mentoring program and provision of administrative, financial and personnel support of the various aspects of the mentoring program such as the matching process, establishment of mentoring goals, learning objectives, CoPs and decisions surrounding the type and duration of interactions (15, 16). The benefits of a formal mentoring program include an increase in faculty participation, a boost in mentor numbers, better matching and improved support, oversight and training for the mentors (16). In their reviews of ethical issues in mentoring in surgery, Internal Medicine and medical schools, Lee *et al.* (21), Cheong *et al.* (22) and Kow *et al.* (23) found that consistent structuring, accessible support by trained mentors, and the presence of a nurturing mentoring environment enhances mentoring experiences and would reduce the risk of ethical issues in these settings (21-23).

In addition, the NMF establishes the need for a needs assessment and the establishment of clear philosophy, approach, values, principles and goals of the program (587). It maintains that there must be feasibility studies to ensure that equipoise is sustained and establishes the mentoring structure, the CoPs, the mentoring approach to be used, the roles and responsibilities of the stakeholders, the communication platforms to

support the mentoring relationships but also the training programs and assessment processes (33).

Within the mentoring structure established by the host organisation are clearly laid out plans for the recruitment, early assessment of potential recruits and briefings to align expectations (19). On recruitment, systems for training programs and matching processes are called for as are the need for pre-mentoring meetings. Indeed, the NMF integrates the mentoring stages into its own framework, mirroring practice and providing a useful guide to practice (18).

Within the confines of clearly set out CoPs, the NMF also allows flexibility within the mentoring process. It also allows for regular assessments and establishes clear roles and responsibilities for all stakeholders thus ensuring effective engagement, timely and appropriate support and oversight of the mentoring process by the host organisation. It also ensures that there is a nurturing mentoring culture and an effective communication platform (43).

5.4.3 Would the findings help locally?

To be employed locally some of the 'requirements' demanded by the NMF of proposed formal programs as they attempt to balance the risk of ethical issues in mentoring and the need to design a sustainable mentoring program border on the prohibitive for many organisations. To begin, the NMF requires significant support and investment simply to initiate and run the program. For example, the requirement that the host organisation carry out the needs assessment, feasibility studies, design the mentoring structure and platform, determine the mentoring goals, roles, responsibilities and the CoP, set out

the recruitment approach and the matching process not only suggests that there is a ‘functional’, trained and structured host organisation in situ but that there is an effective structure and reporting process established within it (14, 15, 19). This is a particular concern when the roles, responsibilities, structure, and the conduct of the host organisation have only just been elucidated and significant gaps in practice remain (Section 3.2.5).

This gap is further compounded by the desire for education of stakeholders to be focused upon the mentoring ecosystem of the program. Whilst desirable given that it will help align expectations, map the mentoring relationship, and train the stakeholders, such an undertaking is difficult and requires significant engagement and oversight by the host organisation to study and finesse its approach before such training can begin. This would suggest the program begins in stages or may unfold as a pilot program and gradually build up with increasing appreciation of the mentoring ecosystem. It is unclear too if it would be a sustainable approach for most programs even when the general concepts of the mentoring ecosystem are applied to the program at its launch. This in part relates to the significant demand on mentor, administrative and financial resources and curricula time to evaluate the ecosystem (15).

Similarly, evidence of the need for a longitudinal mentor and mentee training and support system that runs parallel to the mentoring process, an effective support mechanism which will, in light of the restrictions posed by COVID-19 pandemic, rely on an e-mentoring platform (32) similarly requires careful study and structuring. This further underlines the limitations of the NMF as the concept of Novice Mentoring may be evolving and accentuates the largely ‘aspirational’ nature of the NMF.

Yet, the NMF is also a compensatory framework. To address the gap in effective mentoring assessments (33), the NMF attempts to confine practice within the limits of acceptable practice and be guided by the milestones and competency based stages within the mentoring process (1, 2). Yet, the extent and timing of the adaptations to the mentoring approach and support remains poor given the lack of a consistent communication and assessment platform. Much at present is reliant upon the mentor's ability, availability, accessibility skills and motivations and their ability to engage and assess the mentee effectively (1, 4). These considerations question the viability of the NMF when responses to changes within each mentoring stage may not be effectively assessed directly or immediately but only latterly when the effects of the change become apparent in the mentee's progress and in their mentoring relationship. This underlines the fact that the NMF needs to be tested and validated in practice (2).

Having evaluated the NMF and determined that it would help mentoring processes within a structured research setting, this section will consider its role in clinical practice given the overall plans for the PMI to be used in the clinical settings. Scrutiny of the NMF's ability to inject structure into the mentoring process in an attempt to mitigate concerns about the possibility of ethical issues in mentoring in clinical mentoring bears scrutiny (21-23).

This aspect of the critical review of the NMF will focus upon its potential use within the clinical training of advanced specialist trainees in Palliative Medicine (PM). This brings with it a number of considerations. To begin, PM's employ of a multidisciplinary team (MDT) approach would see mentoring being carried out by

different members of the MDT from diverse clinical backgrounds and specialities. Whilst reviews of mentoring amongst nurses (36), medical social workers (34), occupational therapists and physiotherapists (35), General Practitioners (38) and Internal Medicine physicians (16) reveal a consistent mentoring approach amongst these specialties and amidst Wahab *et al.* (10)'s reports that a consistent mentoring approach in PM's MDT would be possible, a multiprofessional approach to mentoring in PM however remains untested. Indeed, scratch the surface and cracks begin to appear to efforts to instil the NMF in clinical mentoring. Missing are critical details on the nature and quality of mentoring interactions or mentoring dynamics. There are also no considerations of the need to meet clinical competencies and that these clinical setting may overlap and involve and interact with different competencies and settings. It cannot be ignored that the practice of PM does see clinicians' practice in a variety of settings including outpatient clinics; ward coverage in acute wards including the Emergency Department, Intensive Care and Infectious Disease wards and isolation centres, inpatient hospice, rehabilitation and or community hospital wards, home care and home visits, multidisciplinary team meetings, and or research and or education settings (587). Each of these settings have a different structure, culture and environment and brings with them different mentoring interactions that make structuring interactions and supporting the mentoring environment difficult to do (587).

From a mentee's perspective, there will be different competencies to be met and different milestones to be assessed and these must be balanced against different and sometimes competing priorities, availabilities and needs (4, 16, 17). For mentors, ensuring effective and structured assessment and personalised, appropriate, specific,

timely, longitudinal accessible, holistic, and actionable feedback becomes difficult (14, 33). For the host organisation, overseeing the mentoring process, assessments and supporting the mentees and mentors and their mentoring relationships can be complicated in the presence of different structures, settings, environments as well as mentee and mentor specific considerations (14, 15, 19).

With such variability to be considered in what ought to be an evolving, personalised, and enduring mentoring relationship, the presence of these variables suggests that there are many issues to be addressed if PMI approach is to be effectively applied to the clinical training of advanced specialist trainees in PM. Yet, the NMF does prove to be a good starting point as it is evidence based and sufficiently flexible to incorporate more evidence based changes to suit various settings.

5.5 Conclusion

Whilst the SEBA methodology, the mentoring ecosystem and the Novice Mentoring Framework (2) are now published in peer reviewed articles and have been recently used to guide practice in the evolved form of Novice Mentoring in the Geriatric Oncology setting (43), critical appraisal of each of these aspects highlight that whilst they can be applied, more research is required to anchor and advance thinking on mentoring research. However, with the ‘fit for purpose’ mentoring relationship still unproven and use of the mentoring ecosystem in the clinical setting complex and similarly unproven, these critical reviews suggest that the PMI mentoring approach cannot be applied to the clinical setting without inviting concerns about ethical issues in mentoring. Instead, the NMF should, as with the concept of the mentoring ecosystem as an education tool, be seen as a starting point for further study.

Chapter 6. Conclusion

6.1 Thesis Summary

Confronted by variations in mentoring practice and growing accounts of ethical issues in mentoring (21-23) that have threatened the role of the Palliative Medicine Initiative (PMI)'s in research mentoring, it has become apparent to me that a better mentoring structure is required. To ensure that the fruits of my work are worthy of consideration, shape practice and change attitudes, I knew that my work in this thesis had to be transparent, systematic, structured, reproducible and evidence based. This underlines the rationale for the findings of each stage of the thesis to be published to gain external oversight and be part of a peer reviewed process that would add to the trustworthiness of this thesis. Indeed, the publications that have been featured in this thesis ought to be seen as a measure of the progress made over the course and a rudimentary map in how my thinking has evolved as a result of being part of this MD program.

Perhaps the best marker of this point, is the manner that the Systematic Evidenced Based Approach (SEBA) was developed and has evolved (2, 23, 79-83). In order to address my primary research question, **“what is required to ensure a consistent and safe Novice Mentoring approach”**, I found significant gaps in prevailing research methodologies and I went about designing an effective means of better studying Novice Mentoring. I developed the Systematic Evidenced Based Approach (SEBA) (2, 23, 79-83) methodology on the strengths of prevailing research methodologies and designed to contend with Novice Mentoring's diverse characteristics. Its development

from use of the Split Approach, the Jigsaw Perspective to the Funnelling Process and evaluation of the impact of non-evidence based data within SEBA guided reviews in various iterations of the SEBA process highlights this notion of my publications mapping the development of my work on this thesis. Indeed, rather than being separate entities that need to be considered separately my publications and my thesis ought to be considered a seamless extension of my work and my efforts to garner external oversight, peer reviewed oversight and greater trustworthiness for my work.

With this evidence based peer reviewed work behind me, I will consider the secondary research questions first as they inform my primary research question.

6.2 Addressing the secondary research questions

Employing the SEBA guided narrative reviews using the definition of Novice Mentoring to focus attention upon key aspects of the Novice Mentoring I was able to address my three *secondary Novice Mentoring related research questions*, which were

1. What is known of Novice Mentoring in Internal Medicine (IM)?

Through these series of sequential SEBA guided reviews, I reaffirm the common roots shared by Novice Mentoring in IM and PM and reiterate the rationale for my reviews of IM data. These reviews also highlight the role of Novice Mentoring relationships in the success of the mentoring process; and forward a better understanding of mentoring's nature and the part it plays in mentoring dynamics, the nurturing of personalised and enduring mentoring relationships, and balance. These insights provide the basis for my forwarding the concepts of 'fit for purpose' mentoring relationships and 'equipoise' and the role of the mentoring ecosystem in nurturing the

development of personalised and enduring mentoring relationship. I believe these insights will reframe the design of Novice Mentoring programs and shape the approach taken by mentoring programs using other forms of mentoring approaches. I also believe my findings underline the critical role of the host organisation and CoPs; and draws attention to new concepts of ‘fit for purpose’ matching, mentoring relationships and the role of the mentoring culture and mentoring framework (2).

2. What is known about ethical issues in mentoring in surgery and medicine?

The critical importance of Novice Mentoring’s mentoring structure is further underlined by the findings of this NR in SEBA which suggests that the ethical issues in surgery and medicine that have blighted all forms of mentoring in medical education arise as a result of lapses in the mentoring approach and mentoring structure; failure to set out the mentoring setting and goals; misalignment of expectations and poorly established CoPs and expectations on the roles of the stakeholders; and failure to establish a consistent assessment process and oversight of the mentoring program. It is from these gaps that I delved into better understanding of mentoring structures.

3. What is known of mentoring structures? which included

- a. What is known about Codes of Practice (CoPs) in mentoring?
- b. What is known of mentoring frameworks?

The findings to the first two secondary research questions, and the reviews of CoPs and mentoring frameworks allowed me to delineate the Novice Mentoring approach, the concepts of mentoring dynamics and ‘fit for purpose’ mentoring relationships, forward the Novice Mentoring Framework (NMF) and the theoretical concept of the mentoring ecosystem. These concepts represent key

contribution of this thesis. Though many of these concepts have been published in peer reviewed journals as part of the PMI's program improvement process to inject a level of independent review to its practices; evidence is yet to be fully established on their employ in the clinical arena. However, in the meantime, I believe the NMF will map the course of the mentoring relationship through competency based mentoring stages and lay the foundations for a new training tool.

6.3 Addressing the primary research question

In addressing my three secondary research questions, I can now address my primary research question by proposing nine requisites for a consistent and safe Novice Mentoring approach.

1. A clear definition of Novice Mentoring (2),
2. A consistent mentoring framework to guide the course of the mentoring process, nurture the mentoring environment and develop the mentoring culture (2, 15, 17),
3. Clearly delineated CoPs which must be established to confine practice and the mentoring environment to acceptable practice parameters (14, 21, 23),
4. Effective support of the mentoring ecosystem which take into firm consideration the mentoring culture (2),
5. Well-delineated and aligned expectations, roles, responsibilities and timelines of the three stakeholders (21-23),

6. Effective application of competency based stages that facilitate longitudinal, personalised, appropriate, specific and timely assessments of mentees, their needs, progress and the ‘health’ of their mentoring relationships through each of the mentoring stages (1, 14, 33),
7. Longitudinal and comprehensive training and support of the mentors and mentees which inherently encompasses much needed education on the function of the mentoring ecosystem to help align and guide expectations (20),
8. Establishing the role of the host organisation in providing practical and consistent oversight of the mentoring ecosystem and concerted efforts to balance flexibility and consistency within the mentoring framework to create ‘fit for purpose’ mentoring relationships (19), and
9. Lastly, effective and confidential feedback and communication pathways for mentees, mentors and the host organisation (4, 14).

In meeting these nine requisites, I believe I have forwarded the basis for a consistent and safe Novice Mentoring approach.

6.4 The Impact of this thesis on clinical practice

Before I review the impact of the novel concepts forwarded here it is important to delineate unique contributions made by this thesis. These include the SEBA methodology featured in Section 2 of Chapter 2, the evidence based definition of Novice Mentoring, the concepts of mentoring dynamics, ‘fit for purpose’ mentoring relationships, balance, equipoise, the mentoring ecosystem, the potential use of the mentoring ecosystem as a training tool, the Novice Mentoring Framework and critical

analysis tool used in Chapter 5. This work is also accompanied by new contributions that have been inspired by pre-existing data I carried out in the PMI. These include the concept of structured mentoring assessments constructed on competency based mentoring stages; a holistic appreciation of ethical issues in mentoring; and a clear delineation of the role and responsibilities of the host organisation, CoPs, and the mentoring framework; drawn from reviews that my team and I have conducted in the PMI.

6.4.1 **The use of SEBA methodology in other studies**

The SEBA methodology has evolved and as it has done so it been employed in a number of studies that extend beyond mentoring and include Bok *et al.* (80)'s review of interprofessional communication entitled *Interprofessional communication (IPC) for medical students: a scoping review* and Ngiam *et al.* (79)'s study on the impact of caring for terminally ill children on the personhood of physicians entitled *Impact of Caring for Terminally Ill Children on Physicians: A Systematic Scoping Review*.

6.4.2 **Updating mentoring concepts and a new definition**

This thesis has also provided new insights into key aspects of Novice Mentoring. Whilst I have attached the abstracts of these publications in Appendix 1, I will draw attention to several publications that I believe have made a significant contribution to the understanding and practice of Novice Mentoring. These include insights into

- i. The role of mentoring relationships featured in in Sng *et al.* (6)'s “*Mentoring relationships between senior physicians and junior doctors and/or medical students: A thematic review*” in Medical Teacher. This

has influenced the concept of mentoring frameworks, assessment processes and acknowledged the role of the host organisation as an integral part of the mentoring relationship.

- ii. The role of the host organisation featured in Chia *et al.* (19) review “*The Pivotal Role of Host Organisations in Enhancing Mentoring in Internal Medicine: A Scoping Review*” in the Journal of Medical Education and Curricular Development. This has changed the manner in which mentoring programs, relationships and assessments are considered.
- iii. The deciphering of the complex idea of the mentoring environment featured in Hee *et al.* (15)’s “*Understanding the Mentoring Environment through Thematic Analysis of the Learning Environment in Medicine*” in Journal of General Internal Medicine. These insights have laid the foundation for more holistic assessments of mentoring
- iv. The reimagining of the matching process featured in Hee *et al.* (18)’s review “*The Development and Design of a Framework to Match Mentees and Mentors Through a Systematic Review and Thematic Analysis of Mentoring Programs Between 2000 and 2015*” in *Mentoring & Tutoring: Partnership in Learning*. This has a significant impact not only in moving matching in mentoring but matching in other educational approaches away from ‘goodness of fit’ to ‘fit for purpose’ matching that has a long-term impact upon mentoring.
- v. The forwarding of a new framework in mentoring training featured in Sheri *et al.* (20)’s “*A scoping review of mentor training programs in medicine between 1990 and 2017*” in Medical Education Online.

- vi. Mentoring assessment tools featured in Ng *et al.* (33)'s "*Assessing mentoring: A scoping review of mentoring assessment tools in Internal Medicine between 1990 and 2019*" in PLoS One . This paper has underlined the need for new tools and highlighted the importance of having competency based stages at the heart of a more holistic and longitudinal assessment approach. It has also paved the way for studies into the design of more holistic and longitudinal assessment tools in mentoring.
- vii. The pertinence of e-mentoring featured in Chong *et al.* (32)'s "*Enhancing mentoring experiences through e-mentoring: a systematic review of e-mentoring programs between 2000-2017*" in *Advances in Health Sciences Education*.

6.4.3 The implementation of the Novice Mentoring Framework

Building on earlier iterations of the mentoring structure (15, 17), new insights into the mentoring process (featured above) and built upon the concept of mentoring stages (1), the Novice Mentoring Framework (NMF) has also been shown to effectively structure a combined near peer, novice and e-mentoring program within a PMI-led program (2).

6.4.4 The use of competency based mentoring stages in practice

The concept of mentoring was initially presented in my paper entitled "*Mentoring stages: A study of undergraduate mentoring in Palliative Medicine in Singapore*" published in PLoS One (1). This concept was further expounded in my article entitled "*Enhancing Mentoring in Palliative Care: An Evidence Based Mentoring Framework*"

(2) in the Journal of Medical Education and Curricular Development to reveal the critical concept of competency based mentoring stages that has served to circumnavigate a significant gap in mentoring data – the lack of effective assessments. Use of competency based mentoring stages heralded a new assessment strategy to evaluating Novice Mentoring within the PMI, replete with milestones and personalised, context specific, holistic mentoring throughout the mentoring process. These PMI-led publications evidence how effective appreciation of these mentoring stages help address gaps in many prevailing programs through the notion of consistent structuring of the mentoring process. It also helps underline the need to educate stakeholders on the mentoring stages in order to align expectations and highlight individual roles, responsibilities and conduct upon the success of these individual mentoring relationship.

6.4.5 Evolution of Novice Mentoring

The impact of the findings of this thesis have been felt in the PMI particularly as a result of the limitations to travel and face-to-face in person meetings and as a result of redeployment of personnel to address the COVID-19 pandemic. Building upon the data forwarded on the Novice Mentoring relationships, the mentoring structure, and concerns with regards to ethical issues in mentoring, some PMI-led programs have adapted the mentoring structure to fashion evolved concepts of Novice Mentoring. These evolved forms of Novice Mentoring have been featured in my reviews *“Enhancing geriatric oncology training through a combination of Novice Mentoring and peer and near-peer mentoring: A thematic analysis of mentoring in medicine between 2000 and 2017”* (43) published in the Journal of Geriatric Oncology and *“Combined novice, near-peer, e-mentoring palliative medicine program: A mixed*

method study in Singapore” (4) in PloS One. Whilst these PMI-led programs offer some evidence as to the adaptability of the Novice Mentoring process, they serve to underscore the importance of the mentoring ecosystem.

6.5 The Mentoring Ecosystem

This theoretical framework borne from the analysis of the data in this thesis promotes the notion that it is possible to map the course, interactions, influences upon and impact of micro-environments as they progress through a sequence of ‘fixed’ competency based stages of the mentoring process and contend with the influence of various environmental factors to help align expectations, anchor assessments, train mentors, prep mentees, and guide oversight of these processes. Indeed, whilst much of the data does come from my own data and studies within the PMI, the contextualised nature does afford a chance to design training tools for stakeholders, advance a framework to stage a comprehensive assessment program and promote a means of overseeing progress and directing timely, appropriate, specific, personalised, longitudinal, accessible, and holistic support. The concept of the mentoring ecosystem also offers a means of guiding the integration of the mentoring program within the formal curriculum.

6.6 Future research

The mentoring ecosystem, the concepts of mentoring dynamics, ‘fit for purpose’ mentoring relationships, balance, equipoise, the potential use of the mentoring ecosystem as a training tool, the Novice Mentoring Framework and critical analysis tool used in Chapter 5 synthesised in this this thesis from PMI-led data need to be

externally validated. These concepts also require ‘field testing’ in different settings ideally by research teams independent of the PMI before they can find their place within medical education and indeed Palliative Medicine.

Future studies must include design of several tools to aid mentoring. The first is a tool for ‘fit for purpose’ matching, that extends beyond ‘criterion based’ matching to determining the impact of the match through the mentoring stages. Second, there should also be a tool to assess the potential for ethical issues in mentoring that can guide timely interventions of the mentoring relationship by the host organisation. Third is a mentoring diary which will be used to evaluate mentoring experiences holistically, facilitate reflective practice and will be part of a planned mentoring portfolio.

Critically there must be more study and investment in the mentor training program. This must extend beyond simple training on the mentoring ecosystem; competency based mentoring stages; the concepts of ‘fit for purpose’ mentoring relationships, ‘balance’ and ‘equipoise’; longitudinal assessments and the provision personalised and holistic feedback and support but also assessment, remediation, counselling, coaching, role-modelling, supervision, tutoring and communication skills training. In addition, there must be evaluations of the progress, needs and abilities of mentors underscoring the importance of training and supporting mentors over the course of the mentoring program. It is also evident that new mentors should be matched and mentored by senior mentees and that the mentor training program should be formally structured within the formal mentoring program.

In addition, there is a need for two other prospective studies on the design of online portfolios and on remediation to support mentoring relationships and address the needs of mentees and mentors in trouble. Here, the portfolio would help bind the efforts within the competency based mentoring stages to provide a longitudinal and transparent assessment process.

Studies are also planned within the PMI to study mentoring culture and support to augment understanding of the mentoring ecosystem as well as ethnographic studies to study mentoring interactions in the future. These are especially important given mentoring's role in professional identity formation, nurturing empathy, role modelling effective professional conduct and debriefing complex interactions and communication issues.

6.7 Conclusion

In addressing my primary and secondary research questions, I have forwarded a new understanding of Novice Mentoring, the concept of the mentoring ecosystem and proffered an evidenced based Novice Mentoring Framework (NMF) built around longitudinally and holistically structured competency based assessments. Whilst these offerings have been published as part of my efforts to proffer an evidence based approach to addressing the threat of ethical issues in mentoring, it remains theoretical. There is much to be done to externally verify my findings. Yet these findings do provide a platform for further advancements to Novice Mentoring and the PMI. I believe that the principles behind the structure of the NMF, like that of the SEBA methodology could be applied to other mentoring approaches in different settings.

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