

## Toward an Interprofessional Mentoring Program in Palliative Care - A Review of Undergraduate and Postgraduate Mentoring in Medicine, Nursing, Surgery and Social Work

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### Abstract

**Objective:** Key to effective Palliative Care is interdisciplinary collaboration and holistic support of members of the multidisciplinary team. Mentoring is increasingly seen as being a critical facet of this process however; there is a dearth of guidance on establishing such a program within the Palliative Care setting. To fill this gap, this review analyzes mentoring programs in medicine, surgery, nursing and social work in order to identify key elements and common facets of successful mentoring programs that can be used to create a multi-professional mentoring program in Palliative Care.

**Methods:** A review of systematic review of undergraduate and postgraduate mentoring programs in medicine, surgery, nursing and social work involving senior clinicians and junior doctors and/or medical students.

**Results:** A total of 20 reviews were included. One review was on mentoring in medicine and nursing, 10 in medicine, 4 in surgery and 5 in nursing. There were no reviews of mentoring in social work. Thematic analysis revealed 3 themes, which were definition of mentoring, components of a mentoring approach and elements of the mentoring process

**Conclusion:** Despite its context sensitive, goal specific and mentee- and mentor- dependent features, common features in mentoring in medicine, surgery and nursing lay the foundation for a learning theory of interprofessional mentoring that can guide construct effective mentorship programs.

**Keywords:** Mentor; Medicine; Surgery; Nursing; Social work; Palliative care; Interprofessional education

### Introduction

Palliative Care relies on multidisciplinary teams to provide holistic support of patients and their families facing life-threatening illness [1]. Multidisciplinary teams are seen as 'group of people of different healthcare disciplines, which meets together at a given time (whether physically in one place, or by video or teleconferencing) to discuss a given patient and who are each able to contribute independently to the diagnostic and treatment decisions about the patient' as well as to elaborate upon the various biopsychosocial, spiritual and cultural determinants that may be relevant to the provision of care and support to patients and their families" [2]. Involvement of different healthcare disciplines in the provision of care and support to patients and their families necessitates that Palliative Care education adopt a holistic and multi-professional approach. Mentoring is increasingly seen, as an effective means of addressing this need [3-8].

There are however are no guidelines, frameworks, position papers, editorials, perspective and opinion pieces that provide guidance on establishing a mentoring program within the Palliative Care setting. This may be as a result of a lack of a clear definition of mentoring, the presence of a wide array of mentoring practices and the fast evolving nature of mentoring approaches in the face of a growing need to inculcate inter-professional education (IPE) to educate nurses, physicians, surgeons, social workers, physiotherapists and occupational therapists within Palliative Care's multidisciplinary teams [9].

To fill this gap this review will scrutinize reviews of mentoring programs in medicine, surgery, nursing and social work in order to identify key elements and consistent facets of successful mentoring programs in these specialties, which can be used to inform the creation of a multi-professional mentoring program in Palliative Care.

### Methodology

To provide a broad understanding of practices in mentoring across wide array of disciplines associated with Palliative Care unencumbered

by variances in local healthcare provisions and systems, local culture and education systems and organizational ethics and administrative practices, we focused on literature reviews and systematic reviews instead of case-based analyses. Furthermore, this approach circumvents mentoring's context-dependent and goal-sensitive nature.

Given the diversity of mentoring practice in medicine, nursing, surgery and social work, we limited our attention to mentoring programs that involved senior clinicians and junior doctors and medical students in clinical medicine, surgery, nursing and social work within undergraduate and postgraduate settings, given the prominence of this form of mentoring in Palliative Care practice.

The absence of an a priori framework for mentoring [10] and a lack of understanding in the processes and the relationships behind the mentoring process within Palliative Care underpinned the adoption of a constructivist approach [11,12]. The Grounded Theory was employed to thematically analyze the review articles [13,14]. The process included open coding of the reviews where data was coded for and axial coding wherein similar codes were grouped together to create a theme. The individual reviewers independently determined the themes within their individual analyses and the themes were discussed in a reviewers meeting. Reviewers agreed upon the themes and the verified themes formed sections and subsections within the review [15]. Thematic saturation was determined by the 7<sup>th</sup> review.

### Inclusion and exclusion

This review focuses on evaluating aspects of hierarchical [16], dyadic (one-to-one, senior-to-junior, face-to-face) [16,17], group and e-mentoring approaches. Excluded was peer, near-peer, leadership, family, patient, e-mentoring and youth mentoring. We also limited our attention to literature reviews, systematic reviews or meta-analyses of mentoring involving undergraduates and postgraduates in clinical, research and academic settings given our focus upon guiding efforts to create mentoring programs in Palliative Care. Perspective, opinion and reflective pieces, commentaries, editorials and recommendations were excluded due to the diversity of practices described.

The search was restricted to reviews in English or had English translations only. We included all study designs aimed at the professional and/or personal development of the mentee. We excluded literature reviews, systematic reviews or meta-analyses involving health specialties not regularly associated with adult Palliative Care such as dieticians, psychologists, chiro-practitioners, midwifery, Obstetrics and Gynecology, Pediatrics, Clinical and Translational Science and Dentistry. We excluded literature reviews, systematic reviews or meta-analyses on supervision, coaching, role modeling and advisor, given that these practices are seen as distinct from a mentoring approach. We see supervision as being focused upon professional development [18], coaching as facilitating learner development through use of "deliberate practice strategies" [19], role modeling as setting out to create a positive example of good practice, an advisor as helping with scheduling, logistics and applications [18,20] and sponsorship as the dependence on the influence of another for promotion and advancement [21].

### Search and retrieval

Our literature search involved PubMed, ERIC, Cochrane Database of Systematic Reviews, OVID and ScienceDirect databases with the search terms: "mentor", "mentoring", "mentorship" "mentoring

relationships" AND one of the following: "medicine", "surgery", "nursing" and "social work" or their combinations, to identify literature reviews, systematic reviews or meta-analyses on the mentoring of undergraduates or postgraduates in the abovementioned fields between 1st January 2000 and 31st December 2015.

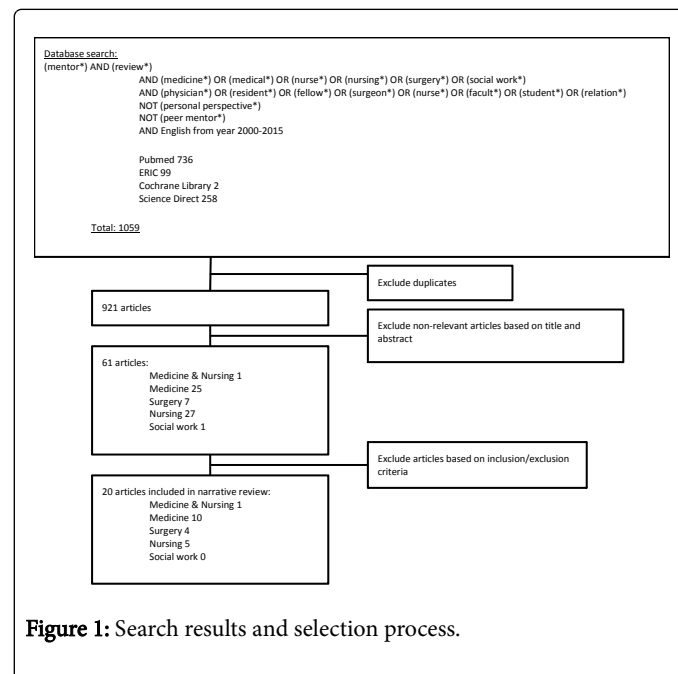
### Data extraction and analysis

Four of the authors (MTW, WJT, MFMI, LK) carried out independent searches, scrutiny of shortlisted abstracts and reviews of all full text reviews fulfilling the inclusion criteria. Each author compiled a shortlist of papers. These papers were appraised using the Joanna Briggs Institute (JBI) Critical Appraisal checklist [22] (Appendix). Following review of 10 full text articles, the four authors unanimously agreed upon a common template to be used for the thematic analysis of the papers. Further face-to-face meeting between all 6 authors was carried out once all the authors had completed their reviews of all full text reviews fulfilling the inclusion criteria. At this meeting the themes were discussed and agreed upon by the authors. In cases of disagreement or omissions, the authors reviewed the full text review and a unanimous decision was sought.

### Results

#### Search results and selection process

A total of 1059 abstracts were retrieved and evaluated, 61 full-text reviews were analyzed and 20 reviews were included based on inclusion and exclusion criteria (Figure 1).



**Figure 1:** Search results and selection process.

Of the 20 reviews included in this review, 1 review included a review of mentoring in medicine and nursing, 10 concerned medicine, 4 in surgery and 5 in nursing. There were no relevant reviews on mentorship in medical social work (Table 1). Thematic analysis revealed 3 themes- definition of mentoring, components of a mentoring approach and elements of the mentoring process.

No.	Title	Date	Journal	Authors	Data source	UG/PG	Definition of Mentoring
Medicine and Nursing							
1	Measuring the effectiveness of Mentoring as a Knowledge Translation Intervention for Implementing Empirical Evidence: A Systematic Review	May 2014	Worldviews Evidence Based Nursing	Abdullah et. al	USA, Canada, Australia	PG	"(a) mentors are more experienced than mentees as related to a specific task; (b) mentors provide individualized support based on mentees' learning needs; and (c) mentoring involves an interpersonal relationship as generally indicated by mutual benefit, engagement, and commitment."
Medicine							
1	A Systematic Review of Qualitative Research on the meaning and characteristics of Mentoring in Academic Medicine	Nov 2009	Journal of General Internal Medicine (JGIM)	Sambunjak et. al	USA, Canada	PG	"A complex relationship based on mutual interests, both professional and personal." "Meaning of 'mentorship' is context dependent" ... "terms such as 'supervision' and 'role-modeling' are often used interchangeably or without clear demarcation" ... "all describing developmental interactions".
2	Mentoring in Academic Medicine: A Systematic Review	Sep 2006	Journal of the American Medical Association (JAMA)	Sambunjak et. al	USA, Canada, Puerto Rico, UK, Germany	UG/PG	"A dynamic, reciprocal relationship in a work environment between an advanced career incumbent (mentor) and a beginner (protégé), aimed at promoting the development of both." "A partnership in personal and professional growth and development."
3	Mentoring Programs for Physicians in Academic Medicine: A Systematic Review	July 2013	Academic Medicine	Kashiwagi et. al	USA	PG	"Mentoring model or program, defined as a formal activity or series of activities supporting development and personal growth of physicians"; "mentoring program was for physicians out of training"; "mentors were described as medical professionals."
4	Mentoring Programs for Underrepresented Minority Faculty in Academic Medical Centers: A Systematic Review of the Literature	Apr 2013	Academic Medicine	Beech et. al	USA	PG	"A process through which a senior, experienced faculty member (mentor) provides guidance and support for a junior or less experienced colleague (mentee)." "A developmental partnership in which knowledge, experience, skills, and information are shared between mentor(s) and mentee(s) to foster the mentee's professional development and, often, also to enhance the mentor's perspectives and knowledge."
5	Research article Mentoring programs for medical students - a review of the pubmed literature 2000 - 2008	Apr 2010	BioMed Central (BMC) Medical Education	Frei et. al	USA, UK, Switzerland, Croatia	UG	"A process whereby an experienced, highly regarded, empathetic person (the mentor) guides another (usually younger) individual (the mentee) in the development and re-examination of their own ideas, learning, and personal and professional development. The mentor, who often (but not necessarily) works in the same organization or field as the mentee, achieves this by listening or talking in confidence to the mentee." "An insightful process in which the mentor's wisdom is acquired and modified as needed, as well as a process that is supportive and often protective." ... "The mentoring relationship is a dynamic one, evolving over time, during which both parties continually define and redefine their roles. It should be considered a process, not an end result, and the relationship must remain non-competitive." "Unlike coaching or counselling, mentoring is a cost-free career-promotion strategy based on a personal relationship in a professional context" ... "a mentor is an active partner in an ongoing relationship who helps a mentee to maximize his or her potential and to reach personal and professional goals." "A career mentor is someone who plays an active role in helping the student in his/her professional and personal development. Mentoring also comprises supporting a mentee in coping with stress and in establishing a satisfying work-life balance." "Mentoring is a relational process in which five phases can be distinguished: information on career options, developing career plans, focusing on career goals, realization of career steps, and evaluation of career advancement."

6	A Proposed Model for an Optimal Mentoring Environment for Medical Residents: A Literature Review	Jun 2010	Academic Medicine	Davis et. al	-	PG	-
7	Formal mentoring programmes for medical students and doctors – a review of the Medline literature	Mar 2006	Medical Teacher	Buddeberg-Fischer et. al	USA, Canada, Germany, Holland	UG/PG	-
8	Mentoring in emergency medicine: the art and the evidence	Sep 2009	Canadian Journal of Emergency Medicine (CJEM)	Yeung et. al	USA, UK	PG	“A mentor takes a special interest in the professional development of a junior colleague and provide guidance and support.”
9	Mentoring: A Key Strategy to Prepare the Next Generation of Physicians to Care for an Aging America	Jul 2009	Journal of the American Geriatrics Society (JAGS)	White et. al	-	PG	“Mentors are teachers who adopt a specific instructional strategy for a specific purpose. As an instructional strategy, mentoring is a one-on-one interactive model of developmental learning that is characterized as a journey. This instructional strategy is particularly useful to facilitate adaptation to change, whether that change is, for example, shedding inaccurate stereotypes regarding older adults, developing an academic career, or entering clinical practice.”
10	Charting a Professional Course: A Review of Mentorship in Medicine	Feb 2011	Journal of the American College of Radiology (JACR)	McKenna et. al	-	PG	“A relationship between a junior physician and an experienced advisor or mentor”; “Traditionally, mentorship in academic medicine is a dyadic model with the intent to further the careers and personal development of mentees through a deliberate series of meetings, reflection, and academic collaboration.”
<b>Surgery</b>							
1	Current status and effectiveness of mentorship programmes in urology: a systematic review	May 2015	British Journal of Urology (BJU) International	Hay et. al	-	PG	“A mentorship programme is an educational system that teaches a set of practical skills or allows an individual to learn how to perform a specific procedure.”  “There is considerable variation in the exact structures of current programmes, but mentorship as a standalone concept is the process of an expert individual advising and guiding a junior colleague and it is commonly accepted to be a crucial component in the education of a surgeon.” ... “Mentorship created the foundation for all surgeons and offered benefits other than just technical skills, such as providing a model for professional attitudes, standards of patient care and exemplary practice in research.”
2	Mentorship in surgical training: a systematic review	Nov 2011	HAND (New York)	Entezami et. al	-	UG/PG	“In its purest form, a mentor is a senior member of a field, who guides a trainee in personal, professional, and educational matters.”
3	Role models and mentors in surgery	Aug 2011	The American Journal of Surgery	Healy et. al	-	UG/PG	“A process whereby an experienced, highly regarded, empathetic person (the mentor) guides another (usually younger) individual (the mentee) in the development and re-examination of their own ideas, learning and personal and professional development.”  “A mentoring relationship involves an exchange of communication and guidance, whereas in the case of a role model there may be no explicit supervisory relationship.”
4	How can we build mentorship in surgeons of the future?	Jan 2011	Australian and New Zealand (ANZ) Journal of Surgery	Patel et. al	-	PG	“Nowadays, the term ‘mentoring’ encompasses an entire spectrum of learning and supporting behaviours, which allow one individual to help another to develop and grow. Therefore, definitions such as ‘a form of human development where one person invests time, energy and personal know-how in helping another person grow and improve to become the best that he/she can become’ and ‘off-line help by one person to another, making significant transitions in knowledge, work or thinking’ are more pertinent to contemporary mentoring relationships.”
<b>Nursing</b>							

1	The effectiveness and application of mentorship programmes for recently registered nurses: a systematic review	Jul 2013	Journal of Nursing Management	Chen et. al	-	PG	<p>"A one-to-one learning relationship between new and senior employees, based on specific courses or learning objectives designed by the institution involved."</p> <p>"The relationship between the mentor and mentee is natural and formal, facilitating personal and professional development in both parties."</p> <p>"Mentorship is a relationship in which an experienced and knowledgeable mentor supports the maturation of the less experienced mentee."</p> <p>"Mentorship is an integration of nursing roles that support nursing education. Therefore, mentorship is a long-term and one-to-one interpersonal relationship that encourages the personal and professional development of the mentee."</p>
2	A systematic review of mentoring nursing students in clinical placements	Aug 2010	Journal of Clinical Nursing	Jokelainen et. al	UK, Australia, Scotland, Hong Kong, Finland, Ireland	UG	-
3	The student-mentor relationship: a review of the literature	Feb 2006	Nursing Standard	Wilkes et. al	UK	UG	-
4	Mentoring Undergraduate Nursing Students - Assessing the state of the science	Oct 2004	Nurse Educator	Dorsey et. al	UK, US, Australia, HK, Canada	UG	<p>"A mentor is defined as a wise and trusted advisor, counselor, or teacher who has something to offer that meets the immediate needs and/or future needs of another."</p> <p>"Mentoring is a planned pairing of a more experienced person with a lesser skilled individual for the purpose of achieving mutually agreed upon outcomes."</p> <p>"A partnership in which both individuals share in the personal growth process and the personal development of one another."</p> <p>"Mentoring is a nurturing process in which a more skilled or experienced person, serving as a role model, teaches, sponsors, encourages, counsels, and befriends a less skilled person for the purpose of promoting the latter's professional and personal development."</p>
5	A Literature Review of Mentoring for RN-to-FNP Transition	Sep 2012	Journal of Nursing Education	Poronsky et. al	-	PG	<p>"Definitions of mentoring in the nursing, education, medicine, and psychology literature share some commonalities—namely, that mentoring is a personal relationship between individuals or within a small group that is established for the purpose of professional development, role socialization, and career advancement."</p> <p>"Mentoring in nursing has been defined as a non-evaluated experience that empowers the mentor and mentee to develop both personally and professionally within the auspices of a caring, collaborative, and respectful environment. The mentoring relationship is interactive, confidential, dynamic, and social."</p> <p>"Mentors function as sponsors, guides, and role models and, by virtue of their professional experience, can support, guide, encourage, challenge, and assist mentees during their transition into a new role or profession."</p>
* PG - postgraduate, UG - undergraduate, UK - United Kingdom, USA - United States of America							

**Table 1:** Summary of reviews.

### Definition of mentoring

A total of 33 definitions (1 in both medicine and nursing, 15 in medicine, 6 in surgery, and 11 in nursing) were found in the analysis of each paper (Table 1). This shows the complexity and diversity of understanding and practice of mentoring. Further thematic analysis of these definitions revealed the following themes of mentoring, which are described in Table 2.

### Components of the mentoring approach

There were a number of components to the mentoring approaches employed.

### Formal versus Informal mentoring

Formal and informal mentoring primarily concerns the manner that mentoring relationships are initiated. Formal mentoring sees mentors assigned to mentees [26] in a process initiated and assisted by the host

organization to facilitate access to mentors and increase the number of mentoring relationships [32].

Informal mentoring refers to mentoring relationships that are mentee initiated [32] and frequently receive little formal support from host organizations [26].

### Formal mentoring approach

**Medicine:** Formal approaches to mentoring were described in 1 review of mentoring that suggested that this approach increased mentoring pairs and improved inclusion of minority groups [23]. White et al. found that mentees and mentors were likely to sustain their mentoring relationship when mentoring relationship were 'officially sanctioned' [23].

**Surgery:** Three surgical reviews described use of formal mentoring approaches [17,27,32]. Healy et al. reported that residents preferred formal mentoring approaches given its structured approach, the availability of trained mentors and the presence of clear mentoring objectives [17]. Mentees also believed that formal mentoring programs conveyed a sense of fairness and equity in mentor allocation [27,32], individualized considerations for gifted students [27] and ethnic minorities 30 and better recognition of their research contributions.

**Nursing:** No nursing papers described formal mentoring.

### Informal mentoring approach

**Medicine:** Six reviews of mentoring in medicine [16,23,26,29,35-37] described informal mentoring. These reviews suggested that allowing mentees to select their own mentors [26] highlighted consideration for interpersonal ties and facilitated more 'comfortable and effective' mentoring relationships [26,29,36]. Davis et al. found that informal relationships facilitate a sense of emotional safety, promote honest reflection, and tampers self-consciousness and a fear of failure [35]. An informal approach was seen as not as 'tedious' [29] as formal mentoring processes and required less administrative support and funding [27].

**Surgery:** Two reviews of mentoring in surgery [17,32] described informal mentoring as fostering communication, open dialogue [17], collegiality and a safe mentoring environment for mentees to ask and seek clarification and to give and receive feedback. This fostered stronger collaboration [32], potentiates firm mentoring bonds 17 and cultivates personal and professional development [17].

**Nursing:** No nursing papers described use of an informal mentoring.

Key points in definitions	Medicine and Nursing	Medicine	Surgery	Nursing
Mentoring as a dynamic process	-	3 [20,23,24]	-	1 [25]
Context dependent	-	2 [26,27 ]	-	
Involving transition of knowledge from a more-experienced mentor to a less-experienced mentee	1 [28]	6 [16,20,24,29,30,31]	4 [17,27,32,33]	3 [25,34]
Involves specific objectives	-	2 [20,25]	1 [20,23,33]	3 [25,34]
Based on mutual interests (both professional and personal)	-	2 [20,23]	-	-
Providing mutual benefits (both professional and personal)	1 [28]	6 [16,20,24,29,30,31]	3 [17,27, 33]	3 [25,34]

**Table 2:** Thematic Analysis of Definitions.

### Considerations when choosing an appropriate form of mentoring relationships

Three medical [23,27,35] and 2 nursing reviews [34,37] offer curriculum designers with a wide range of issues to be considered when forming mentoring relationships.

In medicine, formal mentorship programs facilitated the formation of partnerships [29]. White et al. suggest that strategic promotion and facilitation of formal mentorship programs in specialties like geriatrics could help recruitment [23].

All 3 postgraduate medicine papers also suggest that mentor and mentee ought to be allowed to initiate mentoring relationships [35] with White et al. suggesting that mentees be guided on how to select mentors [23]. Alternatively, the institution could provide a list of approved mentors whom the mentee can select from [29]. McKenna et al. recommends regular mentoring reviews to assess progress [29]. In some cases, both approaches can be utilized, [29] in a two-stage mentoring program, where new faculty members are initially paired with designated senior advisors who orient the new members over a 1-year period, then are allowed to form subsequent mentoring relationships on their own.

In nursing, formal mentoring relationships are seen to be fair, constructive and unbiased [37]. It is further suggested that matching of mentors to mentees based on ethnicity, gender, life experiences, career goals and geographical location could be better facilitated through a formal mentorship programs [34].

### Mentoring approaches

Discussions about formal and informal mentoring models belie significant differences in the mentoring approaches employed within these mentoring models. Mentoring approaches employed within formal and informal mentoring models vary across disciplines, clinical settings and mentoring goals. Some adopt dyadic approaches whilst other use group mentoring, mosaic mentoring [4,7] and or long distance mentoring. Mentors in some of these models may be senior clinicians, near-peers or peers and may come from another specialty or even profession [32]. Poronsky et al. noted that there was no single universally accepted model for mentoring [25]. Seven medicine, 3 surgery and 5 nursing reviews described various models of mentoring. We will consider each model in turn.

## Dyadic mentoring model

Dyadic mentoring consists of one mentor and one mentee forming a mentoring relationship.

Six medicine papers, 4 postgraduate [16,29,30,36] and 2 undergraduate [20,36] mentioned dyadic mentoring. Buddeberg et al. reported 6 out of 9 undergraduate medical programs studied employed dyadic mentoring [36].

In surgery, dyadic mentoring is also used in both undergraduate and postgraduate settings [27,33].

In nursing 2 postgraduate [25,38] and 2 undergraduate [34,37] discussed use of dyadic mentoring. Poronksy et al. reported that dyadic mentoring is used widely in both formal and informal mentoring and particularly in postgraduate mentoring programs 40 yet Dorsey et al. reported that 10 of the 16 undergraduate nursing programs used dyadic models [34].

Abdullah et al. review of mentoring in medicine and nursing found dyadic mentoring enhanced learning [28].

One disadvantage of a one-to-one mentoring relationship is that a single mentor may not be able to address all a mentee's needs [25,29].

## Group mentoring model

Group mentoring involves having more than one mentee being mentored by one mentor. There are few reports on group mentoring.

In medicine, 3 papers [16,25,36] employed group mentoring. Buddeberg-Fischer et al. reported that while majority of medicine programs were dyadic, 3 of 7 programs reviewed employed group mentoring supplemented by other mentoring approaches [36]. Group mentoring was seen to be useful when there was a shortage mentoring staff or where there is a need to encourage peer-to-peer interaction through mass mentoring sessions [30].

In nursing, 2 reviews discussed group mentoring [25,34]. Dorsey et al. noted that 5 out of the 16 programs studies employed group mentoring with mentor-mentee ratios ranging from 1:2 to 1:10-15 [34]. Postgraduate nursing formal mentoring programs utilize group mentoring [25].

## Mosaic mentoring model

Mosaic involves a mentee having multiple mentors playing different roles in their development. There is little information on this form of mentoring and there are no accounts of its use in the nursing setting.

Four reviews of mentoring in medicine discussed mosaic mentoring [16,26,29,36]. In undergraduate medicine, Buddeberg-Fischer et al. report that 1 of 9 programs used mosaic mentoring where one mentee was mentored by two mentors [36]. Little further details were provided.

In surgery, Entezami et al. found that 10.5% of undergraduate and postgraduate studies employed mosaic mentoring [27].

The benefits of mosaic mentoring are apparent when a single mentor is unable to attend to multiple facets of the mentee's life or when some mentors may only be able to provide support from a distance [17,29]. Reviews by Sambunjak et al. in medicine [26] and Healy et al. in surgery [17] found mosaic mentoring to be particularly effective for mentees seeking academic and scientific (research) mentors and for female mentees in male-dominated departments who

seek to engage a male mentor for academics and a female mentor for life coaching.

However, a disadvantage of mosaic mentoring is conflicting advice and conflicts of interests amongst mentors [26,29]. It is also difficult to initiate, coordinate and facilitate mosaic mentoring relationships [29].

## Combination of mentoring models

Buddeberg-Fischer et al. detailed the use of dyadic and group mentoring models in undergraduate mentoring [33]. Abdullah et al. described 5 programs involving medical and nursing staff that used a combination of dyad, group and email mentoring [28].

## E-mentoring and distance mentoring

E-mentoring and distance mentoring are increasingly prevalent as an alternative mentoring approach.

**Medicine:** Three medicine papers [20,28,30] discussed the utility of e-mentoring or distance mentoring.

Yeung et al. found telephone mentoring to be less demanding and helped preserve mentoring relationships. Distance mentoring was also a means of overcoming time pressures and geographical obstacles to mentoring and provided underrepresented and minority groups with access to mentors [30].

**Surgery:** Healy et al. recognized the potential of social networking and web-conferencing tools in maintaining geographically distant mentoring relationships [17] and enlist unbiased opinions from impartial mentors at different sites [32].

**Nursing:** One study included in Abdullah et al. found telephone mentoring improved "all measured outcomes" but did not specify further [28].

## Elements of the mentoring process

The mentoring process is often regarded as having a number of elements that include mentor training, initiation of mentoring, mentoring objectives, duration and frequency of mentor meetings and the impact of race, ethnicity and gender. We discuss each sub-theme in turn.

### Mentor training

**Medicine:** Mentor training is deemed to be an important component of the mentoring process and tends to be part of formal programs [23,30,35]. Mentor training is seen to help mentors assume their various roles and responsibilities [29], consider issues of diversity, create optimal mentoring environments [35] and advance mentoring programs [23]. Mentor training maybe carried out through the provision of books and manuals [16], short but regular workshops or seminars [16,26,29,30] or practical exercises and simulation of mentoring encounters [30].

**Surgery:** Healy et al. recommends that mentors be given time and funding to develop their mentoring skills [17].

**Nursing:** Chen et al. believe that mentors should be instructed on multi-dimensional teaching strategies through training courses [29]. National standards already exist in nursing stipulating the basic training requirements for mentors in the United Kingdom [20,34].

Formal mentoring programs were found to provide valuable opportunities to facilitate understanding of mentors and mentees of their respective roles and maximize their mentoring experiences [25].

### Initiation of mentoring and setting of objectives

**Medicine:** Sambunjak et al. highlighted that host organizations should help mentees identify appropriate mentors [26].

The initiation process of a mentoring relationship should include the early exchange of contact information, discussions about the best modes of communication, setting expectations, schedules, goals and areas for improvement, [30] and establishing milestones [29]. Expectations regarding conflict resolution and intellectual property must be discussed. Written agreements and contracts between mentor and mentee have been employed to enhance accountability [16,26] and stipulate timelines [23]. Davis et al. suggest that mentoring

relationships should be established in a “top down” fashion by senior faculty or physicians [35].

**Surgery:** Healy et al. notes that mentees may choose to develop relationships with various mentors of different standing in the surgical hierarchy [17].

**Nursing:** A formal mentoring program ought to pay careful attention to the matching process [39] and ought to stipulate specific goals, and expectations regarding the process [34].

### Specific objectives

Specific objectives were mentioned in selected medicine, surgery and nursing papers. These can be divided into undergraduate and postgraduate objectives listed in Table 3.

	Medicine	Surgery	Nursing
Undergraduate	Personal development e.g. professionalism [20] Academic teaching [20] Exposure to specific specialties [20,36] Research training [20] Career counselling Support of ethnic minorities [36]	Clinical practice and experience [17]	-
Postgraduate	Academic teaching [16,36] Clinical practice and experience [16] Research training [16,36] Career development, counselling [16] Support of ethnic minorities [20,36]	Personal development e.g. confidence [17,32] Academic teaching [32] Clinical practice and experience [17,32] Exposure to specific specialties [32]	Personal development e.g. time management, resource acquisition, problem solving skills, professionalism [25] Academic teaching Clinical practice and experience [29] Decrease high turnover rates in nursing profession

**Table 3:** Objectives of mentoring program.

It would appear that undergraduate mentoring objectives revolve around enhancing professional and clinical goals whilst postgraduate mentoring goals appear to have more holistic objectives that include personal support.

### Duration and frequency

**Medicine:** The frequency and duration of mentoring relationships are important to maximizing mentoring outcomes and cultivating the optimal mentoring environment for individuals [16,26,28,35]. With reports detailing mentoring occurring weekly to biannually there has been no consensus on the optimal frequency of mentoring meetings [16]. Buddeberg-Fischer et al. noted that most successful mentoring relationships lasted between 6 months to 3 years [36].

Regular meetings allow mentees to review and audit their performances [16,30] and have been shown to enhance outcomes [28] though conflicting schedules are a common challenge [16].

**Surgery:** There were no recommendations on the duration and frequency of mentoring interactions in surgery.

**Nursing:** Chen et al. suggest that effective mentoring relationships took about 6-9 months to develop. Dorsey et al. suggests that there

should be weekly face-to-face meetings or telephone contact in order to promote effective mentoring relationships [34].

### Importance of race, gender and ethnicity (RGE) pairing

**Medicine:** Women and minorities find identifying mentors a challenge and tend to be isolated and disadvantaged by subtle discrimination [30]. Formal matching by race, gender and ethnicity (RGE) has provided opportunities for greater mutual growth [26], resulted in more promotions, less sex bias, improved salary equity [23], better work-life balance [20] and helped address marginalization, overt and covert racism, and non-career advancing activities.

**Surgery:** Entezami et al. believes that gender does not directly affect mentorships in the professional setting, despite acknowledging that men and women encounter different life and career decisions/barriers [27]. Healy et al. however, found that female mentees believed mentor presence as having a significant impact on their career decisions [17]. The dearth of well-developed female surgical networks however forces female mentees to seek mentorship from male mentors instead [17].

**Nursing:** There were no nursing reviews that discussed RGE pairings of mentors and mentees.



## Discussion

Common elements within systematic reviews, literature reviews and meta-analyses of mentoring practices in undergraduate and postgraduate medicine, surgery, and nursing re-emphasize the context sensitive, goal specific and mentee- and mentor- dependent features evidenced by previous papers [20,26,36]. The context sensitive and goal specific nature of mentoring is evident in the variances present between postgraduate and undergraduate mentoring approaches and outcomes. However, analysis of mentoring goals between medicine, surgery and nursing in the undergraduate and postgraduates does show remarkable consistency. Undergraduate mentoring goals tend to focus on professional development whilst postgraduate mentoring tends to require more holistic mentoring support.

Relative homogeneity in mentoring goals and the apparent consistencies in undergraduate and postgraduate mentoring approaches serve to reiterate the mentee- and mentor- dependent nature of mentoring with postgraduates tending to require dyadic, frequent and holistic mentoring support than their undergraduate counterparts.

These common facets provide a rudimentary framework for the design of a multiprofessional Palliative Care mentoring program.

Drawing on prevailing mentoring data and drawing on the RGE concerns that have highlighted the obstacles that women and ethnic minorities face accessing appropriate faculty members and forming mentoring relationships, it is clear that mentoring in Palliative Care ought to adopt a formal process. A formal mentoring program would see mentoring relationships initiated, maintained and supported by host organizations. To harness the benefits of mentee initiated mentoring relationships, mentees in Palliative Care settings should be provided with a chance to select their own mentor from list of approved and trained mentors.

Prevailing data would also suggest that mentoring in Palliative Care ought to adopt a mosaic-mentoring process supported by e-mentoring. A mosaic-mentoring approach with e-mentoring would facilitate holistic, timely, individualized, appropriate and specific support of members of the multidisciplinary team by senior members Palliative Care team from different professional backgrounds. These considerations underline some of the reasons that an interprofessional mentoring program in Palliative Care ought to embrace a formal mentoring program. A formal mentoring program for Palliative Care would

- be better able to support mentors in terms of financial resources and provide protected time that would enable them to better respond to the needs of mentees.
- be better able to facilitate an effective matching process.
- allow for the technological support needed to support long distance mentoring.
- be better able to provide guidance for mentees as they select an appropriate mentor, in meeting their responsibilities and navigating their respective roles within their mentoring relationships. Formal mentoring will better provide for standardized training and regular refreshers for mentors on dyadic and mosaic mentoring, communications and support skills to nurture mentoring relationships.
- be better able to support interprofessional education and facilitate interprofessional teamwork.

## Limitations

This systematic review is limited by scant and heterogeneous data particularly in surgery and nursing. Moreover, terms such as mentoring, formal mentoring and informal mentoring remain poorly defined. The term mentoring too remains poorly delineated and frequently conflated with practices such as role modeling, preceptorship, sponsorship, advisor and supervision making it difficult to arrive at accurate conclusions with regards to the data.

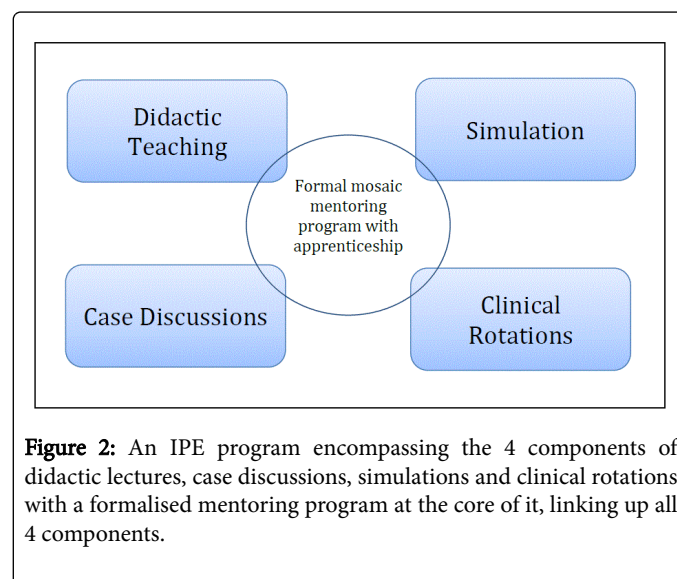
There is little precedent for transposing mentoring data from surgery, nursing, social work and medicine to Palliative Care making the submission that these practices could guide the creation of mentoring programs in Palliative Care doubtful. It is also doubtful that the context sensitive, goal specific, mentee and mentor dependent nature of mentoring will allow easy application of mentoring data across sites.

## Future Research

There has been no review of mentoring in social work and little if any data on mentoring relationships in medicine, surgery or nursing despite its undoubted importance. Both require urgent attention if mentoring is to take its central role in training in Palliative Care. There is also a need for context specific studies in mentoring in Palliative Care replete with its own nuances and goal-sensitive considerations. Studies into interprofessional mentoring within multidisciplinary teams, as a whole would also be useful in refining the appropriate approach to mentoring in Palliative Care.

## Interprofessional education (IPE) in palliative care

Mentoring is integral to the development to the Palliative Care however any mentoring program must consider the multi-professional nature of Palliative Care. Evidence from prevailing studies allows for the forwarding of a rudimentary interprofessional education and mentoring framework. To begin Interprofessional Education (IPE) occurs when “two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes” [40,41]. This aligns with Palliative Care’s impactful ‘case based, in-training’ approach and its multiprofessional nature [41].



**Figure 2:** An IPE program encompassing the 4 components of didactic lectures, case discussions, simulations and clinical rotations with a formalised mentoring program at the core of it, linking up all 4 components.

A Palliative Care IPE mentoring program however will require a clear learning theory of IPE mentoring. Grounding the discussion in prevailing data on mentoring programs and the dominant learning theory [42] in mentoring, we propose integrating 4 components of the adult learning theory into the Palliative Care IPE mentoring program. This includes didactic lectures, simulation, case discussions and clinical rotations (Figure 2).

- Didactic lectures remain critical to provide systematic, core knowledge [42], focusing on roles of different healthcare professionals in Palliative Care [39,43-45] role of interprofessional collaboration as well as concepts of teamwork and collaboration [44].
- Simulation-based learning aligns with elements of experiential learning integral in IPE developing team communication and collaboration [39,44,45,46-48]. Simulations also promote observation-based learning as those not currently involved can observe the roles of their colleagues and reflect [48].
- Case discussions include either discussions of cases from clinical practice or developed as curriculum content. These discussions aim to reinforce understanding of interprofessional collaboration taught in didactic lectures [44,46,49,50], exchanged-based learning and action-based learning through collaborative enquiry.
- Clinical rotations can be modeled after the Exemplary Care and Learning Sites (ECLS) model [51]. The model promotes interprofessional clinical learning by integrating mentees into interprofessional teams and allowing them to actively participate in clinical improvement efforts. This facilitates both practice-based and observational learning.

Encompassing these 4 components would be a formal mosaic mentoring model supplemented by an e-mentoring approach that would allow mentees acquire the clinically relevant knowledge and skills required for effective Palliative Care functioning whilst supervised by various members of the multidisciplinary team [17,23,27,52]. This program must be housed within a formal program [52] in order to facilitate personalized matching of mentee and mentor [34]. Use of a formal approach facilitates inculcation of training programs for mentors [53,54] and instilling a robust curriculum design that aligns mentoring values and education goals [45,53].

Meanwhile use of mosaic mentoring supplemented by e-mentoring expands the mentee's developmental network (which refers to relationships beneficial for career development) [55] and grants mentees diverse clinical perspectives from various members of the Palliative Care team, facilitating interprofessional collaboration. The presence of mosaic mentors strengthens the benefits of the 4 components of the IPE program. Meetings between mentee and mentors can allow for clarification of didactic content, reinforcement of learning points and most importantly, resolution of conflicts [53] that the mentee may have encountered during clinical rotations. The mentors can enhance the learning value of simulations by providing individualised feedback after the session. By positive role modeling, mentors can resolve the issue of a hidden curriculum (lessons that are learned without being explicitly intended) [41]. A mosaic mentoring model at the core of the IPE program would allow for individualisation of the learning process while being immersed a multiprofessional clinical setting.

Use of mosaic mentoring supplemented by e-mentoring support helps address the need for fluidity or flexibility in the mentoring

process as well as overcoming time pressures and scheduling clashes throughout the duration of the mentoring process [30].

Delivery of an IPE program is dependent on both educator (e.g. academic staff training) and curricular mechanisms (e.g. logistics and scheduling) [40]. Common challenges to both mechanisms include clashes in scheduling [39,49,53] and the lack of trained mentors [44,45,53]. This is particular relevant when data suggests that mentoring relationships ought to last at least 6 months.

We believe the data accrued here provides the foundations for the rudimentary framework that provides a basis for future programs and helps direct research into mentoring in IPE mentoring in Palliative Care. It is only through further research can mentoring in Palliative Care achieve its true potential and its place in Palliative Care.

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