Evaluation of a mentoring program for junior medical staff at a tertiary paediatric hospital: Uptake, impact and sustainability

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Abstract

Introduction: Mentoring for doctors has benefits for mentors, mentees and their employment organisations. There are emerging examples of formal mentoring programs in hospitals. There remains limited published data evaluating self-selection models for participant satisfaction and long-term outcomes. Our aim was to explore the experience of mentors and mentees who opted in to the dyad mentoring program at the Royal Children's Hospital (RCH) to understand the longevity of the mentoring relationships and to understand the utilisation of the supporting mentoring tools.

Methods: A mixed-methods study was conducted. In 2020, 174 eligible doctors were invited to complete a survey containing multiple-choice and Likert-scale questions to explore Moore's outcome levels for evaluating continuing medical education. Of the eligible cohort, 66 (38%) responded, and of these, 14 volunteered for in-depth individual interviews. Descriptive statistics from survey responses were used to calculate number and frequency of responses, and inductive thematic analysis was used to identify themes from transcribed interviews as part of a phenomenological approach.

Results: One third of mentees and 68.8% (22/32) of mentors reported ongoing relationships beyond the 10-month formal program. A "cycle of mentoring" was evident, with mentees returning to the program as mentors. Four key qualitative themes were identified: "broad benefits" of mentoring, "it's a relationship and it takes work", "giving back" and "program foundations". Outcomes in domains of participation, satisfaction, learning and organisational culture change were identified.

Conclusion: The mentoring program at RCH has demonstrated positive impact and long-term sustainability. The program structure could be replicated in different settings.

Keywords: mentor; paediatrics; program evaluation; hospital

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Introduction

Mentoring has been broadly described as a relationship between two people of differing seniority in which the more experienced individual (mentor) provides the junior (mentee) with support in a range of areas, with the aim of conferring qualities and experiences to the mentee that will contribute to a successful and fulfilling career (Osaghae, 2012; Platz & Hyman, 2013). The utilities of mentoring in healthcare settings are well documented. For the mentee, these include job satisfaction, success in obtaining research grants, improved productivity, work performance and propensity for promotion (Al-Taha et al., 2017; Burgess et al., 2018; Cranmer et al., 2018; Efstathiou et al., 2018; Han et al., 2014; Lord et al., 2012; Moorthy et al., 2016; Morrison et al., 2014; Spence et al., 2018). Mentoring relationships also enhance support networks for doctors, leading to reduced stress, increased morale and improved mental wellbeing (Berian et al., 2017; Chanchlani et al., 2018; Harrison et al., 2014; Szabo et al., 2019). Mentors gain valuable leadership and organisational skills as well as recognition and personal fulfilment (Burgess et al., 2018; Webb et al., 2015).

Despite the well-recognised benefits of mentoring, research indicates that a large proportion of the mentoring needs of doctors are not adequately met (Chen et al., 2016; Frank-Bertoncelj et al., 2014; Han et al., 2014; Nicholls et al., 2017; Sambunjak et al., 2006; Soto & Walsh, 2019). To counteract the unmet need, hospitals and institutions have developed formal mentoring programs. Studies evaluating such programs highlight important factors to consider when designing and implementing a successful paradigm. Mentoring relationships perceived as most useful are those that occur spontaneously rather than being assigned, as the mentor and mentee are more likely to share personal interests and compatibility, however such relationships are difficult to formalise (Amonoo et al., 2019; Ergun et al., 2017; Harrison et al., 2014). In light of this, self-selection seems to be the preferred method for matching mentors and mentees (Caine et al., 2017). Existing self-selection models have not been thoroughly evaluated for participant satisfaction with relationship compatibility and long-term outcomes (Eisen et al., 2014; Morrison et al., 2014; Spence et al., 2018; Voytko et al., 2018).

The objective of this study was to evaluate longitudinal participant experience of and outcomes from a formal mentoring program for junior resident medical officers (JRMOs) established at the Royal Children's Hospital (RCH) in Melbourne in 2016. The program structure has been previously described in detail in the literature (Polley et al., 2020). The JRMO year comprises the first year of postgraduate paediatric specialty training. The mentoring program utilises self-selection of mentors based on video profiles. Pairs were provided with online modules, including meeting and goal setting frameworks to provide support and structure. These were relatively novel components of a formal mentoring program model (Table 1). Additionally, this program is supported by a mentoring coordinator at an organisational level, who recruits mentees and mentors and brokers relationships. In this study, we aimed to explore the experience of mentors and mentees

in the program, including benefits and challenges. Secondly, we aimed to understand the sustainability of the mentoring model and the factors contributing to success and longevity of mentoring relationships.

Table 1

Components of the Mentoring Program for Junior Doctors at a Tertiary Hospital and How Each Was Used Within the Program and the Rationale for Its Development and Utilisation.

Component	Use	Rationale
Mentor videos	Allowed mentees to ascertain mentor attributes, such as gender, subspecialty and interests. The video platform provided further insight into personality not conventionally achieved by written text.	Literature indicates mentor/mentee pairs with similarities contribute to successful relationships.
Written mentor profiles	Written accompaniment to videos	To enhance and elaborate on information gained from video profiles
eLearning module	Provided pairs with a chronological guide suggestion for mentoring relationships to follow	Host organisation support and guidance can aid in maintaining brokered relationships
Online toolkit: written resources	Provided templates for meeting structure, goal setting	To provide pairs with tangible advice to enhance mentoring experience

Note: Table contents were adapted from "A novel approach to medical mentoring" (Polley et al., 2020)

Methods

Setting and participants

This study was conducted amongst doctors in Years 2 to 6 of postgraduate paediatric training at RCH who had participated in the formal mentoring program, either as a mentor or mentee. Doctors who elected to participate in the mentoring program were eligible to participate in this evaluation, and no specific exclusion criteria were applied.

Since its establishment, 100 mentors and 91 mentees had participated in the mentoring program. Those able to be contacted by email (174) were invited to complete an online survey and, upon completion of the survey, were given an option to partake in an additional individual interview.

Data collection

A mixed-methods approach was used. This allowed more in-depth analysis with detailed exploration of participant perceptions to complement quantitative data (Tariq & Woodman, 2013). The experience of participants in the mentoring program was explored through an online survey sent to all mentors and mentees followed by individual interviews with a voluntary sample of participants to explore themes in more depth.

In February 2020, eligible doctors were invited via email to complete an anonymous online survey hosted on REDCap (Harris et al., 2009). Three reminder emails were sent to optimise the response rate. The survey contained a combination of multiple-choice, Likert-scale and free-text responses and was developed to fulfil our objectives of assessing perceived program value and long-term impact using Moore's outcome framework for evaluating continuing medical education (Moore et al., 2009). The framework considers the impact of professional development at different levels, including participation, satisfaction, learning, competence, performance, patient outcomes and community outcomes, which are of equal relevance to mentoring. A voluntary response sampling approach was utilised for an additional interview upon completion of the survey (Etikan et al., 2016). Respondents were invited to provide contact details if they were interested in participating. The interview was conducted using an interview guide with questions exploring participant involvement, perceptions and long-term outcomes aligned with Moore's framework. The interviewer was a medical student researcher and did not have any prior involvement with the mentoring program or its participants. The interviews were audio-recorded using a digital voice recorder after a plain language statement was provided and verbal consent was obtained. Audio recordings of interviews were transcribed verbatim, with identifying information removed. One researcher was involved in the development of the mentoring program, but this potential bias was mediated by the role of other researchers in the evaluation. None of the researchers had participated as a mentor or mentee.

Outcome analysis

Data from the survey were analysed using descriptive statistics. Demographic information was described according to number and percentage of participants at each level of training (between postgraduate Year 2 and training completion) at the time of the survey and type of involvement in the mentoring program (mentor, mentee or both). Questions exploring the perceived impact of the mentoring program on participants were constructed using a 4-point Likert scale (Nadler et al., 2015). The number and percentage of responses at each point on the scale was calculated for each question using SPSS statistics software using frequency distribution of responses, as the data do not follow a normal distribution (Sullivan & Artino, 2013). Some participants provided incomplete responses. These surveys were still included in the data analysis because the number of incomplete responses for each individual question was small.

An inductive approach to qualitative content analysis was chosen, as it allowed conclusions to be drawn from the data itself in order to gain knowledge on the topic being investigated (Elo & Kyngas, 2008). Researchers studied transcribed interview data to identify codes, and NVIVO software was used to organise codes into themes and sub-themes. Themes were checked and reviewed by a second researcher in an iterative process to reach the final reported outcomes. The finalised themes were further analysed to identify domains pertaining to Moore's outcome model (Moore et al., 2009).

Ethics approval

The study protocol was approved by the Human Research Ethics Committee at RCH, who deemed it consistent with the National Health and Medical Research Council (NHMRC) Ethical Considerations in Quality Assurance and Evaluation Activities (2014) guideline (Project Number HREC 2019.340).

Results

Among eligible mentors and mentees who were able to be contacted via their email on file, 37.9% (66/174) completed the online survey. Of those who responded, 51.5% (34/66) had participated in the mentoring program as a mentee, 39.4% (26/66) as a mentor and 9.1% (6/66) as both a mentee and mentor. The majority of survey participants had completed either 5 or 6 years of postgraduate paediatrics training, and 18.2% (12/66) had completed training entirely. The remaining 21.2% (14/66) respondents were in their third or fourth year of postgraduate training.

Figure 1

Bar Graph Comparing Self-Reported Reason That Mentees Initially Opted in to the Tertiary Hospital Mentoring Program for Junior Doctors, With Self-Reported Main Perceived Benefit of the Program Following Their Involvement
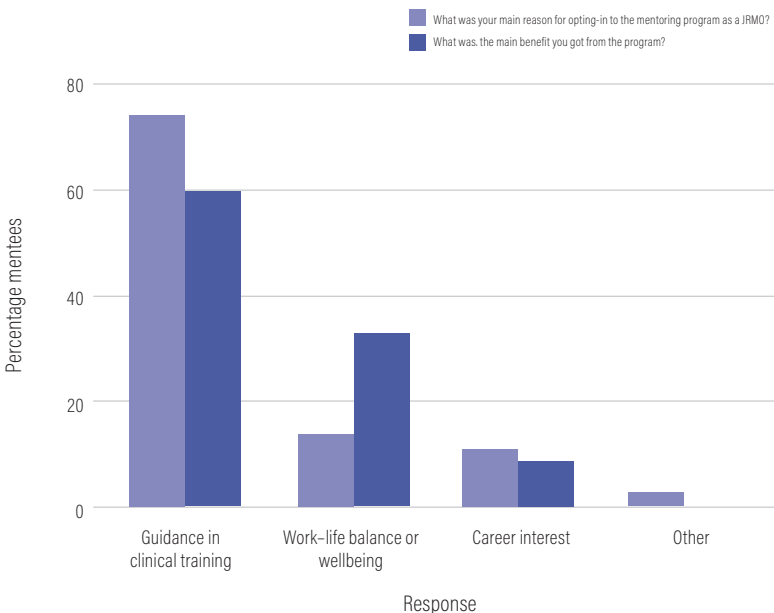

The main reason for opting in to the mentoring program was compared to the main perceived benefit participants felt following their involvement (Figure 1). The majority of mentees (67.5%, 27/40) pursued guidance in clinical training on opting in. Work–life

balance or wellbeing was sought by 12.5% (5/40) and 10% (4/40) were motivated by career interest. A greater proportion of participants (30%, 12/40) felt the primary benefit they experienced from the program, upon reflection, was work–life balance or wellbeing, though the majority (55%, 22/40) reported guidance in clinical training.

Sustainability of the mentoring program was explored by asking participants whether they had an ongoing relationship with their mentor or mentee beyond the 10-month prescribed program. From total survey participants, 51.5% (34/66) described having an ongoing relationship with either their mentor, mentee or multiple mentees. Mentors had a higher rate of ongoing relationships (68.8%, 22/32) compared with the mentee group (35%, 14/40). One mentor reported sustained relationships with seven mentees. Most mentors (81.8%, 18/22) with ongoing relationships maintained contact with a single mentee. Among mentees with an ongoing relationship, 64.3% (9/14) described the relationship consisting of further mentoring. A high proportion (80%, 32/40) of mentees stated that being a mentee motivated them to become a mentor.

Figure 2

Stacked Likert Scale Scores Exploring Individual Experience and Perception of the Tertiary Hospital Mentoring Program for Junior Doctors
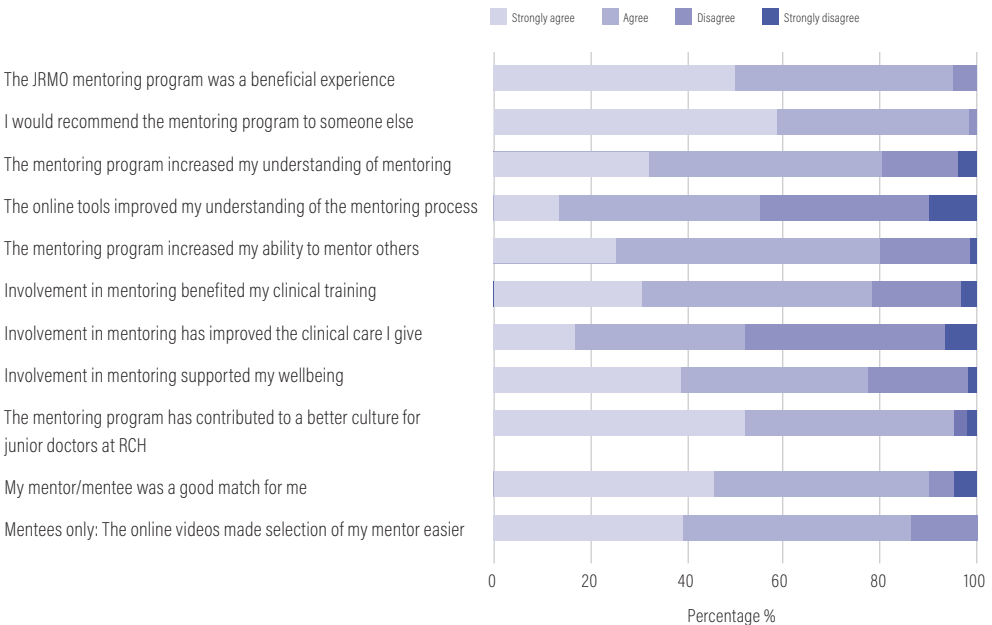
There was strong overall satisfaction with the mentoring program (Figure 2). In particular, mentor–mentee matching was highly satisfactory; the program was perceived to have contributed to a better culture for junior doctors; and participants would recommend the program for others. The vast majority of mentors (87.5%, 28/32) felt well

supported within the program's structure. The mentoring program had less perceived impact on clinical care delivered.

Qualitative results

Fourteen survey respondents opted to participate in an individual interview. Five had experience as a mentor, five as a mentee and four as both a mentor and a mentee. We identified four pertinent themes underscoring the mentoring program: "broad benefits", "it's a relationship that takes work", "giving back" and "program foundations".

Broad benefits

Mentors and mentees, alike, reported program benefits that fell into the categories "career and culture" and "advice and assistance".

Participants stated they would feel more comfortable making clinical referrals to their mentor or mentee due to the enhanced trust that resulted from the already established relationship. One mentor stated they would consider clinical information from a mentee with "*much more weight than maybe I would a junior who I didn't know*" (Mentor 2). Others felt that the effects of mentoring on clinical outcomes was difficult to quantify but suggested that improved morale from participation in the program could have positive impacts on patient care:

> *It definitely does affect hospital culture.* (Mentee 4)

> *Your clinical care is impacted mostly by people you're working with.* (Mentee 1)

Participants felt the mentoring relationships contributed to a connected social network, which further enhanced their ability to collaborate in the workplace. Ubiquitously, mentors felt the program enhanced their understanding of life as a junior doctor:

> *I think there was that aspect of actually really understanding better the plight of junior medical staff, which helps all seniors, and I'm now a junior consultant, and it totally helped me to appreciate some of those things, which will help me going forward in terms of managing junior staff.* (Mentor/mentee 1)

Mentors reported that senior doctors may be at risk of becoming disconnected from the junior doctor experience as they progressed further in their career and that mentoring could help to mitigate this and give them "*a better appreciation for what training looks like*" (Mentor 2). Ultimately, this "*better bond and understanding between the senior and junior medical staff*" (Mentor 5) was felt to "*knock down the hierarchy a bit*" (Mentee 4). They often felt this understanding would continue to help them as they progressed further in their career, taking on leadership and senior roles.

Mentees found mentoring to be an effective tool to assist with navigating the stresses of being a junior doctor:

> *Burnout can kind of creep up on you.* (Mentee 2)

> *Work can be hard; work can be quite draining; work can be quite daunting.* (Mentor/
> mentee 3)

Mentees reported that times of heightened stress were when it was most helpful to have a mentor available as a source of support. Mentees sought targeted advice for exam study and clinical rotation selection from their mentors, knowing they had experienced those transitions already in their career. Overall, mentoring relationships were perceived to make a positive contribution to wellbeing as well as providing mentees with practical assistance.

It's a relationship that takes work

Participants often alluded to the chronological nature of their mentoring relationships and the various trajectories the relationship could take. There was an initial connection, following which there might have been growth and long-term development if the pair was compatible or, other times, separation if the relationship did not thrive.

Most participants described similarities in personality and shared interests as being a factor contributing to the success of the initial connection. Specifically, mentees found video profiles helped them to gauge whether a mentor would be a good fit for them:

> *I really liked the intro videos that were sent out of all the mentors, and you could kind of look and see which one you thought you might gel with a bit better.* (Mentee 4)

Mentees found the videos gave them more information than a written biography would have alone: "*Much better than just like a bit of text and a photo*" (Mentee 2); "*there's a lot of non-verbal communication you take out of it too*" (Mentee 1). The self-selection process often fostered a connection between two similar people and empowered the mentee to invest in the relationship:

> *I think the process of getting them to self-select really empowers them to be more engaged.* (Mentor 4)

Ongoing relationships with their paired mentor or mentee after the conclusion of the formal program were described by the majority of the interviewees. Mostly, this was informal in nature, and the frequency of contact was usually dependent on mentee needs and mentor availability. Almost all participants reported their relationship became increasingly comfortable with time: "*Over time it becomes more natural*" (Mentor 1). Several interviewees referred to a metaphor of an "open door" to describe the ongoing availability of the mentor for further contact beyond the formal program when required by the mentee.

Occasionally, relationships did not work out. A minority of mentees reported that geographical distance was a factor contributing to cessation of their mentoring

relationships. Rarely, incompatible pairings would arise. When this did occur, participants felt it was related to differences in personality:

> *I think personality entirely; we were just very different.* (Mentee 2)

> *There was a little bit of personality clash.* (Mentor 3)

Like any relationship, mentoring relationships require time and effort. Every participant described time as being a factor that affected their relationship: "*The successful relationships are dependent on meeting and meeting frequently*" (Mentor 2). This was often challenging to coordinate face to face, but text message and email could be utilised. Mentee motivation and active participation was valued by mentors, who found it easier to engage within their pairing and deliver effective mentoring if the mentee showed initiative.

Giving back

The motivation that underpinned mentors' involvement in the program was often a result of having derived benefit themselves and wanting to pay this forward. Some mentees became mentors as they progressed through their training, demonstrating evidence of a self-sustaining cycle of mentoring in the institution.

Mentors seemed to recognise the utility of mentoring that they had received in the past. This compelled them to contribute to the ongoing culture of mentoring at the hospital, drawing on the experience they later developed in their career. Multiple participants recognised that mentees showed a tendency to come back as mentors on the program. One mentee who had subsequently returned as a mentor stated, "*I think the nice thing [about] becoming a mentor this year is seeing how many of my friends or my peers have also done that who were in the mentor program as mentees as well*" (Mentor/mentee 4). This suggests that this phenomenon was occurring beyond the participants who were interviewed in this study. Another stated:

> *When I was making my mentor video, I see that a lot of the faces on there are people who were mentors last year, but people who've also been mentees in the past. I think that retention rate is really good, and it speaks that it's a useful program.* (Mentor/mentee 3)

Program foundations

Most participants found that the formal program provided a foundation on which to base their mentoring relationship. One mentee recognised that the process "*enabled the link to be established between me and someone else at the hospital who was more senior than me who I otherwise would not have developed a link with*" (Mentee 3). The online mentoring module helped to provide support and a point of reference and enabled some to foster completion of shared mentoring goals. Commonly, the tools were utilised at the beginning of the relationship. As pairs became more comfortable and confident further into their relationship, the tools tended to be used less frequently. Participants appreciated

the freedom they were given to refer to the program foundations as much or as little as they required:

> *It's not too rigid.* (Mentor 5)

> *It's not too tick box-y.* (Mentor 4)

> *It gives you all this freedom.* (Mentee 1)

Mentors commonly reported the desire to be able to meet with other mentors to discuss mentoring strategies, hoping to enhance their own skills and "*share the values and experiences that the mentors have had*" (Mentor/mentee 2). Many mentors felt there was a role for formal mentor training within the curriculum—"*I would like more teaching about teaching based into the curriculum*" (Mentor/mentee 1)—but recognised that this may be hard to facilitate with conflicting work schedules.

Discussion

This evaluation of a formal junior doctor mentoring program at a paediatric tertiary institution demonstrates the program is widely considered beneficial by mentors and mentees. Many of the benefits that were reported are in line with current literature, including improved workplace culture, enhanced connection between junior and senior medical staff, wellbeing and mentoring skills (Chanchlani et al., 2018; Moorthy et al., 2016; Nagarur et al., 2018). Few studies have investigated long-term implications of such programs, although a pattern of mentees becoming mentors has been reported, and this phenomenon is clearly reflected in this mentoring program (Efstathiou et al., 2018). Additionally, this study is one of few to clearly articulate that long-term relationships can be sustained beyond the formal program.

Our data demonstrates impacts from the mentoring program at different levels, including participation (highlighted by the engagement of 191 mentors and mentees since the program's establishment and recurrent participation as mentors) and satisfaction in terms of the broad benefits obtained from the program and learning (self-reported gains in knowledge in leadership, mentorship, communication and goal setting). However, the greatest impact appears to be on a relational level, whereby a structured mentoring program and its content initiates connections and provides guidance and direction from which relationships can (though not always) thrive. This relational impact has important consequences for higher level outcomes: learning (whether clinical, operational or professional), practice and organisational culture. This aligns with the concept of an educational alliance from medical education literature (Telio et al., 2016). Trainees have been shown to judge this alliance on their supervisor's engagement, supportive attitude and commitment to their growth—key features of mentors. Junior medical staff benefit from deliberate early establishment of these alliances to help them navigate their workplace, role and training transitions. In addition, this potentially sets individuals up for an ongoing culture of mentoring throughout their careers.

Self-selection seems critical and has been used within other successful mentoring paradigms (Caruso et al., 2016; Eisen et al., 2014; Morrison et al., 2014; Spence et al., 2018; Voytko et al., 2018). However, no reported programs have utilised a video profile tool to assist mentees in their selection. The majority of mentors and mentees described the videos as a key tool in this process, providing more useful information than a written biography could alone. This facilitated successful matching and continuation of relationships beyond the prescribed program. This was highlighted by many participants who were still involved in a relationship with their matched mentor or mentee despite the formal program completion, suggesting that relationships that were fostered had potential to be long-term and were not limited to the formal program.

This study is limited in that it includes a small sample from a single institution. The data that was collected was subjective, based on participant perception, and lacks outcome measures such as clinical impact. Additionally, the opt-in nature of both the survey and interview may introduce participation bias as those who chose to partake are possibly more invested in the program and, therefore, may be more likely to report positive outcomes. The response rate was adequate, and higher than most response rates for mentoring evaluations in the literature but may add to potential for bias.

The novel use of video profiles for mentor self-selection has contributed to successful relationships that are sustainable and is an approach that could easily be replicated in other medical and non-medical settings. Its utility is not specific or limited to the paediatric subspecialty and could be applied to other medical and surgical training programs. This mentoring program model has the potential to enhance mentoring availability to doctors, which is lacking in many reported contexts.

Conclusion

Most research pertaining to medical mentoring outlines benefits for multiple stakeholders, including mentors, mentees and the employment organisation. In this study, we identified broad benefits for junior doctors in a paediatric tertiary institution and long-term sustainability in many mentoring relationships. Video-based self-selection represents an effective, novel and scalable tool for successful mentor matching. Formal institutional support and program structure are critical to help establish mentoring alliances early in a trainee's development. A cycle of mentoring phenomenon was witnessed, with mentees paying back and contributing to building a supportive institutional culture.

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