Making the Match: An Innovative “Speed-Dating” Approach for Pairing Pediatric Residents with a Research Preceptor and Project

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Abstract

Objectives: For residency programs with a mandatory research component, it is challenging to match residents with optimal preceptors and projects early in residency to expedite project completion. An evaluation of a “Speed Dating” format adopted in 2011 to match pediatric residents with research preceptors was performed.

Methods: Residents and preceptors who participated in Speed Dating 2011 through 2016 were surveyed for their views on the process. Additionally, research output by residents with access to Speed Dating was measured.

Results: Forty of 52 preceptors (77%) and 48 of 54 residents (89%) responded of which 32 preceptors and 46 residents had attended Speed Dating. Of 32 preceptors, 18 (56%) had found "a match" and 16 (50%) considered Speed Dating to be a very good strategy for matching residents with preceptors. Twenty-six of 46 residents (57%) had selected their project, preceptor or both from Speed Dating and 34 of 48 who responded to the survey (71%) preferred Speed Dating vs simply receiving a list of potential preceptors and projects. Twenty-eight residents who trained in the Speed Dating era and have completed their general pediatric training reported 30 presentations at conferences and 25 publications stemming from work completed during residency with only 3 (11%) having no presentations or publications.

Conclusions: Residents tended to have a more positive attitude towards Speed Dating than did preceptors but most participants were neutral or enthusiastic about this method of matching residents with preceptors. The majority of residents chose a project or preceptor or both at Speed Dating. The rate of research project completion and dissemination was high.

Keywords: Residency training program; Mentor; Preceptor; Research program
Introduction

"Scholar" is a key role in educational frameworks of physician abilities (Royal College of Physicians and Surgeons of Canada, 2018). To develop this integral role of a physician's early career, residents training in many programs worldwide are required to complete a scholarly/research project. One problem is that selection of an inappropriate preceptor or project or delayed selection of a project hinders successful completion of the project during training. Residents typically have limited knowledge of the research interests or personalities of potential preceptors. Matching of residents with preceptors for research projects typically takes place informally, aided by distribution of a list of preceptors and projects and/or a "Meet and Greet" session.

Factors that contribute to the success of resident research programs have not been established. The purpose of this study was to determine the success of a resident research program that incorporates a more formal process that we have entitled "Speed Dating for Research". The term "Speed Dating" was coined for a round robin session designed to help singles find a mate, first described in Beverly Hills in 1998 (Wikipedia, 2018). This format was designed to allow one to meet many people one-on-one in a short period of time in a low-pressure environment.

Methods

Success of the resident research program was defined as i) a high degree of learner and preceptor satisfaction with the Speed Dating process and outcome, ii) completion of research projects during residency and iii) dissemination of projects through presentations at meetings and publication.

The setting

The General Pediatric Residency Training Program at the University of Alberta has three core years of training. Residents then choose to do a fourth general pediatric year or transfer into a subspecialty program. Most incoming residents have little or no research experience or training. The three core years include a minimum of one week of dedicated research time per year with protection from clinical responsibilities. The expectations of the research component of the residency program are that each resident will select a project and a preceptor, aid in the design or refinement of the project, apply for a non-competitive research grant (maximum $CDN2500) from the Women and Children’s Health Research Institute (WCHRI), complete the project, present the project at the local annual WCHRI Research Day and write a manuscript. Residents are encouraged to also submit their work for presentation at a larger conference and for publication. If data are deemed to not be publishable, the resident is required to write a report outlining the background of their project, the methods, any available data and the barriers that precluded completion of a potentially publishable manuscript.

Speed Dating format

Starting in 2011, we established Speed Dating as an obligatory activity for first-year residents. All clinicians and researchers in the Department of Pediatrics are invited annually to participate. Prior to Speed Dating, potential preceptors submit a one-paragraph summary of i) one or more specific projects, or ii) the type of research that they are proposing. The summary is vetted by the chair of the Trainee Research Committee to ensure that the scope of any proposed project is appropriate. A few days prior to the first Speed Dating session, we provide residents with the names of research preceptors (listed in the order that they volunteered), their pediatric specialty, their one-paragraph summary as described above and their contact information. Preceptors are asked to attend a Speed Dating session if they were available (there are one or two sessions one week apart). The preceptors arrive prior to the residents for a brief presentation on:
a) expectations of research preceptors,
b) the completion timeline for research projects,
c) an explanation of how the Speed Dating works, including:
   a. clarifying that preceptors are not to contact the residents after the session - they must wait to see if a resident contacts them, and,
   b. advising that preceptors can use their discretion as to which resident(s) they accept.

The residents then arrive for a one-hour session during which they have approximately 5 minutes to speak with each preceptor. Residents are expected to select a preceptor and a project from the Speed Dating process, from the list of preceptors provided (since not all can attend Speed Dating), or independently over the next three months. Residents email the chair of the Trainee Research Committee biannually to report their progress in the research project steps outlined above.

Survey data were collected through REDCap (Research Electronic Data Capture) (Harris et al., 2009) from all current and former residents who were eligible to have participated in Speed Dating and from preceptors who had submitted a potential resident research project 2011 through 2016 (Figures 1 and 2, Supplementary Files). The Research Ethics Board of the University of Alberta waived the need for informed consent of survey participants. A formal pilot of the survey was not performed due to the finite pool of eligible participants and the simplicity of the survey which focused on how often Speed Dating achieved "a match", the ideal format for Speed Dating, and the degree of stress that the residents experienced from Speed Dating. Descriptive statistics were used. The answers from open-ended questions were compiled and all novel answers are reported in the results sections.

To determine the research productivity of the program, residents who started July 2011 or later, and had completed the general pediatric portion of their residency by June 2017 were also surveyed in August 2017 to determine if they had presented their project at a conference outside of Edmonton and whether any publications had stemmed from their primary resident research project or from other research projects completed during their general pediatric residency. If they did not reply, data on presentations and publications during residency were derived from records maintained by the trainee research director or by the residency program and publications since were sought on Google Scholar and PubMed.

Results

Preceptor viewpoint
The survey was sent to 52 preceptors of whom 40 replied (77%). Eight of the 40 had not attended Speed Dating, yielding data from 32 preceptors who had participated in Speed Dating once (n=16), at least once (n=5) and more than once (n=11). Eighteen of the 32 (56%) had at least once found a resident to do a project with them through Speed Dating, 2 (6%) had a resident contact them after Speed Dating but this did not lead to a mutual research project and 12 (38%) were never contacted. When asked for their overall impression of Speed Dating, 16 (50%) selected "a very good way to match residents and preceptors", 11 (34%) selected "neutral" and 5 (16%) selected "Disappointing – I will probably not participate again."

Preceptor suggestions to improve Speed Dating included: provision of a formal "second date" if the resident wanted more information, provision of a formal template to submit their proposals prior to Speed Dating, clearer guidelines regarding the components of a successful project, and a mechanism to gauge the level of interest in their project such that a preceptor would not attend Speed Dating if there was no interest in their proposal. One preceptor
Resident viewpoint

Surveys were sent to 54 residents. Six did not reply, yielding data from 48 residents (89%). Eleven of the 48 (23%) were now in second year, 9 (19%) were in third year, and 8 (17%) were in fourth year of general pediatric residency. Eight (17%) were currently a sub-specialty resident/fellow, 8 (17%) were working as a general pediatrician and 4 (8%) were working as a sub-specialist. Attitudes prior to Speed Dating were "I looked forward to Speed Dating." (30; 63%), "I felt neutral about it." (17; 35%) and "I dreaded having to go." (1; 2%). When asked how stressful Speed Dating was in retrospect, the answers selected by 46 respondents (the other two ultimately did not attend Speed Dating) were "not at all" (28; 61%), "a bit" (17; 37%), and "It was definitely stressful for me." (1; 2%). The single respondent who found it "very stressful" felt neutral about Speed Dating prior to attending. When asked if they enjoyed Speed Dating, responses were "yes" (37; 80%), "no" (1; 2%), and "neutral" (8, 17%). Outcomes reported by the 46 residents who attended Speed Dating were: "I chose a preceptor and did almost exactly the project that they presented at Speed Dating." (N=18; 39%), "I chose a preceptor from Speed Dating and did a project related to one of the ones that they presented at Speed Dating." (N=5; 11%), "I chose a preceptor from Speed Dating but did a project unrelated to any that they presented at Speed Dating." (N=3; 7%), and "I did not find a project or preceptor at Speed Dating." (N=20; 43%). None did a project from Speed Dating with a different preceptor than the one who presented it at Speed Dating. When asked if they preferred Speed Dating over receiving a list of projects and preceptors, replies were "Yes" (34, 71%), "No" (12; 25%), "I did not attend Speed Dating but think that it would have helped me" (1; 2%) and "I did not attend Speed Dating and do not think that it would have helped me". (1; 2%) Twenty of the 48 residents (42%) felt pressured to decide quickly before another resident chose the project that they wanted of which 5 later regretted their choice of project.

Suggestions by residents included: holding Speed Dating later in the year when the residents know more of the staff, residents rotating in groups or pairs, prompting residents with appropriate questions for preceptors, informing residents of the reputation of preceptors (it is not clear if they meant their reputation as a researcher or as a preceptor), provision of a recorded message for preceptors who were unavailable during Speed Dating and access to advice from senior residents as to which type of project to select.

Table 1 shows the format for Speed Dating favored by preceptors and residents. The majority (66%) preferred a format where residents meet only with select preceptors. Five minutes was considered the optimal time for a "first date" by 61% of respondents.

Table 1 – Opinions concerning optimal ways to organize Speed Dating

<table>
<thead>
<tr>
<th>Optimal duration of each &quot;date&quot;</th>
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<tbody>
<tr>
<td>&lt; 5 mins</td>
<td>0</td>
<td>4 (8%)</td>
</tr>
<tr>
<td>5 mins</td>
<td>20 (62.5%)</td>
<td>29 (60%)</td>
</tr>
<tr>
<td>7 mins</td>
<td>2 (6%)</td>
<td>2 (15%)</td>
</tr>
<tr>
<td>8 mins</td>
<td>0</td>
<td>2 (15%)</td>
</tr>
<tr>
<td>10 mins</td>
<td>7 (22%)</td>
<td>6 (12.5%)</td>
</tr>
<tr>
<td>5-10 mins</td>
<td>1 (3%)</td>
<td>3 (6%)</td>
</tr>
<tr>
<td>15 mins</td>
<td>0</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>Other1</td>
<td>2 (6%)</td>
<td>12</td>
</tr>
</tbody>
</table>

1 One respondent pointed out that the optimal duration might change if the format changed such that residents only met with select preceptors and another thought that the time should be based solely on the preference of the residents.

2 One resident stated "I had decided on my research topic prior to speed dating based on the list of options provided, and so I really only wanted to use that time to meet up with that particular preceptor."

commented on the value of meeting all first-year residents even though none chose their project.
Research productivity
From 2011 through 2016, 28 residents have completed their general pediatric training and all have presented their work at a local research day. Presentations at conferences (excluding the local departmental and research institute research days) (n=30) and publications (n=25) are outlined in Table 2 with only 3 residents (11%) having neither.

Discussion

Preceptors and residents regarded Speed Dating as a useful innovation for matching residents with preceptors for research projects with about half of residents choosing a preceptor at Speed Dating. The pressure to select a project led to stress for some residents. However, earlier selection of a project would be presumed to increase research productivity, as projects are often never published if not completed by the end of training.

Most participants favored a format where residents reviewed the projects ahead of time and only met with preceptors of select projects versus the current format where all preceptors meet with all residents. To efficiently implement this preferred format, residents would have to indicate ahead of time, which preceptors they wished to meet with so that a schedule could be derived. Tardiness of preceptors or residents would be more of a problem with this less flexible system. Another barrier is that it seems likely that some preceptors would request a one-on-one meeting in lieu of Speed Dating if only one resident wished to meet with them; this potentially puts more pressure on the resident to choose that preceptor's project and to some degree defeats the purpose of Speed Dating.

There is one previous brief publication describing Speed Dating for matching medical interns to research preceptors (Berquist et al, 2010). Their session were more scripted than ours with preceptors given 3 minutes to speak and then interns given 3 minutes to discuss their research background and interests. There is no mention of presentation of specific projects. About half of interns chose a preceptor from this session and faculty evaluation were reported to be "positive". Speed Dating has also been used successfully to match medical students to faculty (Guse et al., 2016) or residents to more senior residents (Caine, Schwartzman and Kunac 2017) or to staff (McNabney, Fedarko and Durso, 2010; Cook, Bahn and Menaker, 2010) as mentors.

The research productivity of the residents was a mean of about one presentation at a conference and one publication per resident with only 3 of 28 (11%) lacking both. Since some residents had completed their general pediatric training just one month prior to the output survey, more publications are anticipated. This would seem to be a commendable research output but there is no benchmark level for residency programs.

A 2017 systematic review of interventions that increased scholarly activity during residency in Canada and the United States reported that the key components appeared to be having mandatory requirements, protected time, a research director, a research curriculum or track and research days (Stevenson et al., 2017) However, typically interventions were bundled so it was not possible to determine the contribution of each component. They did not identify studies that analyzed output based on characteristics of preceptors or the process that was used for identifying a preceptor or a project. Local "research culture" was thought to be key to resident success; it seems likely that "Speed Dating" near the beginning of residency conveys the message to residents that they are expected to begin a research project early in their training.

The major limitation of this study is that the contribution of Speed Dating to research productivity cannot be determined. The majority or residents did not choose a project from Speed Dating, yet the Speed Dating process may have prompted them to choose and start a project earlier than they otherwise would have. It is not possible to compare the research output of residents prior to and during the Speed Dating era as resident research requirements
were first made mandatory the year that Speed Dating was introduced. Research output was not directly compared for residents who did and did not choose a project from Speed Dating as even if the proposal did not come directly from Speed Dating, the preceptor or the idea for the project may have stemmed from Speed Dating. A further limitation is that there is not a validated measure of the quality or the true impact of presentations or publications.

Potential preceptors with negative attitudes towards the concept of Speed Dating would not have agreed to attend, biasing the survey towards those with a neutral or positive attitude. It would be optimal to determine whether preceptor responses varied by discipline but this was not possible with the limited sample size. The responses of residents and preceptors could only be compared for limited questions, as the preceptor survey was brief to encourage participation.

Another limitation is that the study was conducted at a single institution. First year residents come from all across Canada and have just started their program when Speed Dating occurs so it seems unlikely that their attitudes would differ much from residents in other Canadian programs. However, the attitudes of preceptors could be colored by the research culture of the institution.

**Conclusion**

Based on the evaluation, Speed Dating should be continued, potentially with a revised format where preceptors only meet with residents who have some level of interest in their project. Future studies should analyze predictors of which resident-preceptor matches are most likely to yield both mutual satisfaction and research productivity, potentially leading to "Eharmony for Research" (Eharmony, 2018).

**Take Home Messages**

- A round robin (Speed Dating) format for matching pediatric residents with research preceptors was regarded favorably by most participants.
- There was a high rate of project completion in the era of Speed Dating whether or not residents chose a project or preceptor from Speed Dating.

**Notes On Contributors**

Dr. Mia Lang is the Associate Dean, Faculty Development and former Program Director of the General Pediatrics Training Program, University of Alberta.

Dr. Joan Robinson is the Chair of the Resident Research Committee, Department of Pediatrics, University of Alberta.

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Bibliography/References


Appendices

None.

Declarations

The author has declared that there are no conflicts of interest.

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Ethics Statement

The Research Ethics Board of the University of Alberta waived the need for informed consent of survey participants as the authors were evaluating a component of the education program.

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