

# Medical Students' Socialization Tactics When Entering a New Clinical Clerkship: A Mixed Methods Study of Proactivity

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## Abstract

### Purpose

Socialization into clinical clerkships is difficult in part due to ambiguity around students' new roles and expected behaviors. Being proactive reduces ambiguity and is essential to socialization. Proactive behavior can be taught and goes beyond having a proactive personality. Among students entering new undergraduate clinical clerkships, this study aimed to investigate (1) reported proactive behaviors and their association with social integration and (2) enabling and inhibiting factors for proactive behavior.

### Method

This study was conducted at the 5-year MBBS program at Western Sydney University during academic year 2019–2020. Using a convergent mixed methods approach, survey and

interview data from third-, fourth-, and fifth-year students were collected. Surveys explored 5 proactive behaviors: feedback seeking, information seeking, task negotiation, positive framing, and relationship building. Interviews elicited descriptions of how students described their proactivity and what influenced students to be proactive when entering a new clerkship. Data were integrated using the following the thread and mixed methods matrix techniques.

### Results

Students exhibited all 5 proactive behaviors. Survey data showed positive framing and task negotiation had the highest and lowest scores, respectively. Only positive framing correlated significantly with social integration scores ( $r = 0.27$ ;  $P < .01$ ), but this contrasted to interviews, in which students described

how other proactive behaviors also led to social integration. Proactive behavior scores decreased across academic years. Integrated data showed 3 linked antecedents to whether students exhibited proactive behavior: feeling capable of being proactive, individual intention to be proactive, and the immediate environment and system-level factors.

### Conclusions

Students who framed the experience positively were more likely to report increased social integration. Initiating task negotiation was challenging for most students. The authors propose a conceptual model for proactivity and social integration to support socialization and learning during clinical transitions for future research and interventional design.

**S**ocialization is necessary for people to learn the values, attitudes, and beliefs required to succeed in a specific context.<sup>1</sup> Many medical students find socialization into clinical clerkships difficult.<sup>2,3</sup> This is

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heightened in rotation-based clerkship models, in which students are quickly shuttled between clinical disciplines.<sup>4</sup> Socialization is also necessary to provide newcomers with access to learning opportunities and contributes to identity formation.<sup>5,6</sup> Specifically, business literature describes the construct of organizational socialization as the phased process of a newcomer gaining the knowledge, skills, and behaviors necessary to succeed in a work environment.<sup>7</sup> Organizational socialization theory suggests that both organizational and individual factors contribute to newcomers' socialization as they transition to new environments.<sup>8–10</sup> In medical education, these organizational factors could include formal socialization strategies like transition courses.<sup>11</sup> Although transition courses increase students' confidence and reduce anxiety, some students still struggle with socialization.<sup>2,3</sup>

Transitions bring ambiguity to students' new roles and expected behaviors.<sup>12,13</sup>

When students are proactive about seeking out information related to their expected roles and behaviors, this ambiguity is reduced and the information they gather enables them to learn, thrive, and socially integrate.<sup>14</sup> Social integration is the extent to which newcomers interact with organizational insiders in support of and to clarify their role.<sup>15</sup> Once socially integrated, newcomers gain access to others and develop a sense of control.<sup>14</sup> Social integration is a critical indicator of newcomers' adjustment or transitioning<sup>16,17</sup> and increases the likelihood of a newcomer being proactive about seeking information when in a new environment.<sup>18</sup> Previous literature has suggested that proactive behavior is fundamental during periods of change—for example, transitioning from preclinical to clinical training<sup>12,19,20</sup> or entering a new clerkship.<sup>12</sup> Proactive behavior is about making things happen.<sup>8</sup> In medicine, peers,<sup>21,22</sup> faculty,<sup>23</sup> researchers,<sup>12,19,23</sup> and even national bodies<sup>24,25</sup> advise undergraduate

students to be proactive. Realistically, organizations cannot provide all necessary information; newcomers have an active role to play in adjusting to a new environment.<sup>16</sup> Although organizational socialization strategies (i.e., socialization tactics) can impact how integrated a newcomer feels in their new environment, a newcomer's proactive behavior also mediates this relationship and can further help them to feel integrated and to function in the new environment.<sup>14,26</sup> Thus, being proactive is essential to socialization.

Proactive behavior is any action that is “self-starting, change-oriented and future-focused”<sup>8,9</sup>—for example, (1) a novice medical student asking a resident for feedback on their patient's history to improve history-taking skills as they become a medical professional or (2) a senior medical student cannulating a patient's vein so the patient can receive medication swiftly without waiting on the junior doctor. In undergraduate medical education, medical students' proactive behavior results in student-level impacts as proactive feedback seeking stimulates reflection on clerkship activities.<sup>19</sup> However, proactive behavior also has team-level implications as faculty describe proactive students as easy to work with and involve them more in clinical activities.<sup>23</sup> In medicine, proactivity has been investigated in relation to feedback seeking,<sup>27,28</sup> speaking up behaviors,<sup>29</sup> and proactive engagement in health care tasks.<sup>30</sup> Among postgraduate business students, Ashford and Black<sup>14</sup> examined 5 proactive behaviors exhibited when entering and fitting into a new work environment: information seeking, feedback seeking, relationship building, positive framing, and task negotiation.

Anecdotally, medical students are an important part of health contexts during their clinical education. Further, nursing<sup>31</sup> and medical education literature<sup>12</sup> has successfully applied and built on theoretical concepts from organizational socialization theory. Therefore, we deemed it possible that the aforementioned proactive behaviors could also be relevant in medical education. Supplemental Digital Appendix 1 (at <http://links.lww.com/ACADMED/B234>) provides a brief description of these proactive behaviors as described by the organizational socialization literature.

Exploring proactive behavior is important as some suggest that proactive behavior can be taught<sup>32</sup> and goes beyond having a proactive personality.<sup>33</sup> Therefore, it is crucial to unpack proactivity in medical education as being proactive is influenced by numerous factors, including affect<sup>34</sup> and the work environment.<sup>29</sup> These influences could vary by field (e.g., medicine, law) given differences in expectations. For example, the hierarchical nature of medicine<sup>35</sup> and frequent contextual changes in rotation-based clerkships could further complicate proactive behavior and its influence on the process of socialization when experiencing contextual change.

We therefore aimed to explore proactive behaviors and social integration within a medical education context. Specifically, we were interested in proactivity during periods of change. Consequently, within the context of transitioning to a new undergraduate clinical clerkship, we investigated (1) reported proactive behaviors and their association with social integration and (2) enabling and inhibiting factors for proactive behavior.

## Method

This is a mixed methods study using the sensitizing concept of proactive behavior as described in the organizational socialization literature<sup>8,10,14</sup> to inform our choice of survey instrument and to structure and interpret our qualitative and integrated findings.

We used the Good Reporting of a Mixed Methods Study checklist to ensure adequate description and justification of our methodological choices.<sup>36</sup> Mixed methods research is suited to rigorous exploration of underexplored constructs<sup>37</sup> in any context; further, as some proactive behaviors are known to be context-specific,<sup>38,39</sup> mixed methods was a good fit for our study. We adopted a convergent mixed methods approach; that is, quantitative and qualitative data were collected and analyzed separately and were then integrated.<sup>40</sup> Neither method dominated, rather they were connected<sup>41,42</sup>—specifically, we used preliminary survey findings to guide our interview sampling.

## Setting

We set this study at the 5-year MBBS (undergraduate medical education)

program at Western Sydney University in Australia during academic year 2019–2020. In this program, students spend 2 years in classroom-based education and then transition into full-time rotation-based clerkships for the last 3 years of training. During those last 3 years, students rotate every 5 to 10 weeks through clerkships. Importantly, in this program, some of the clerkships experienced during the third year are repeated in the fifth year. This study occurred during the COVID-19 pandemic, so some clerkships were disrupted, which limited students' access to certain clerkship activities. For example, some fifth-year medical students were employed part-time in customized work roles to augment the medical workforce during the pandemic, while all third- and fourth-year students had limited access to the operating theater and clinic experiences due to social distancing protocols.

## Quantitative study

**Sample and procedures.** We approached year 4 and 5 students with a paper-based version of the questionnaire during a face-to-face educational session. Year 3 students were approached during a virtual session (due to COVID-19) using a self-administered online version of the questionnaire (Qualtrics, version 2019, Qualtrics, Provo, Utah). The questionnaire included questions about demographic characteristics and scales measuring 5 proactive behaviors and social integration. There were no suitable scales in the medical education literature, so we used proactivity scales validated in postgraduate business students entering the workplace<sup>14</sup> and adjusted the phrasing to our context. This adapted survey was piloted on 9 clinical students for face validity; no significant changes were necessary following the pilot. Thus, we proceeded with 25 items across 5 scales measuring the following proactive behaviors: (1) feedback seeking, (2) information seeking, (3) task negotiation, (4) positive framing, and (5) relationship building (see Supplemental Digital Appendix 2 at <http://links.lww.com/ACADMED/B234> for sample items). Responses to all of these items were on a 5-point Likert scale, where 1 = to no extent and 5 = to a very great extent. The measure of internal reliability (Cronbach's alpha coefficient<sup>43</sup>) for these scales was 0.80 on average. In addition, we used a 4-item scale, used in adults starting

a new job in various fields, to measure social integration (see Supplemental Digital Appendix 2 at <http://links.lww.com/ACADMED/B234> for a sample item).<sup>44</sup> Responses for these items were on a 7-point Likert scale, where 1 = strongly disagree and 7 = strongly agree. Cronbach's alpha coefficient was 0.82 for the social integration scale. The survey ended with an interview invitation.

**Data management and analysis.** We compiled a database and analyzed data using the Statistical Package for the Social Sciences (SPSS) version 26 (SPSS, Inc., Chicago, Illinois). Data were summarized and presented as mean and standard deviation (SD) scores for each survey item and scale. We used *t* test and 1-way analysis of variance to explore associations between demographic variables and mean scores for each proactive behavior scale and the social integration scale. Significance was set at  $P < .05$ . Pearson's correlation coefficient measured the relationship between proactive behavior and social integration scores.

**Qualitative study**

**Sample and procedures.** Of the 46 students who agreed to be interviewed, we selected 18 to ensure a mix of gender, academic cohorts, levels of proactive behaviors, and levels of social integration for maximum variation. During interviews, A.A. elicited qualitative descriptions of how students described their proactivity and what influenced

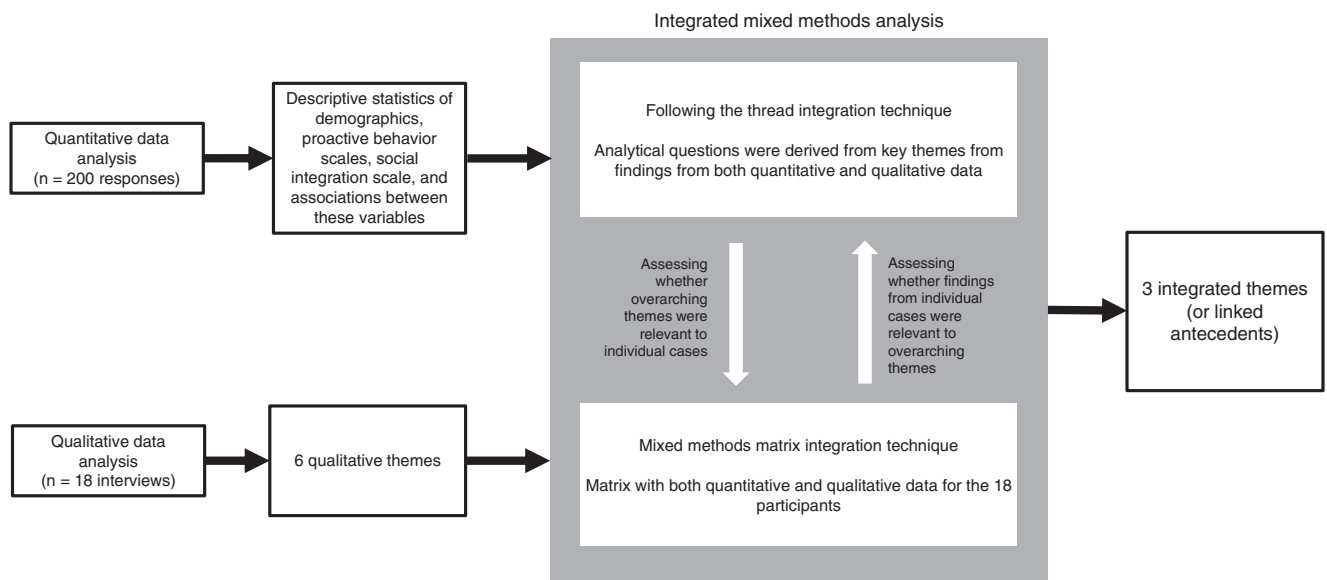
students to be proactive when entering a new clerkship. We used a semistructured interview guide (see Supplemental Digital Appendix 3 at <http://links.lww.com/ACADMED/B234>) drafted during the research proposal phase, which was fine-tuned based on preliminary quantitative data. Interviews lasted 40 minutes on average (range: 20–51 minutes). Using online videoconferencing software (Zoom Video Communications, version 8.0, Zoom Video Communications, Inc., San Jose, California), we conducted and audio recorded interviews. A professional third-party transcribed all recordings verbatim. All transcripts were deidentified before analysis.

**Data management and analysis.** Thematic analysis began after 3 interviews were completed and continued iteratively until information power was deemed sufficient.<sup>45</sup> A.A. gained familiarity with the data by reading the transcripts and listening to the audio recordings. She coded the transcripts line-by-line.<sup>46</sup> A.A. then used sensitizing concepts related to proactive behavior found in the organizational socialization literature and used in the previously described survey to provide theoretical coding.<sup>46</sup> These initial codes and transcripts were discussed with I.H. and W.C.-Y.H., following which A.A. coded all transcripts. A.A. and I.H. met to discuss developing findings and interpretations. Following these meetings, A.A. applied any adjustments to the dataset analysis framework; no substantial changes were

made. The research team discussed preliminary themes through synchronous and asynchronous meetings. Data were managed using Atlas.ti, version 8 (Scientific Software Development GmbH, Berlin, Germany).

**Data integration and mixed methods inferences**

After analyzing the quantitative and qualitative data individually, we used the integration techniques of following the thread<sup>47</sup> and mixed methods matrix<sup>41,48</sup> (see Figure 1). In following the thread, we identified a key theme from the quantitative data then further explored or explained it within the qualitative data and vice versa. We posed key themes as analytical questions, which we used to interrogate the dataset in its entirety.<sup>47</sup> These analytical questions led the integrated analysis and arose from promising emergent findings that were related to the overarching research aims.<sup>48</sup> We also created a mixed methods matrix for all 18 interview participants using both their quantitative and qualitative data. The matrix was created with columns for each demographic characteristic and quantitative variable as well as columns that indicated the presence or absence of each qualitative subtheme. Thus, the rows provided an analytic summary of each of the 18 interview participants' findings from both their quantitative and qualitative data. The analytical questions were used to interrogate the mixed methods matrix, allowing us to analyze whether



**Figure 1** Diagram of the process used to integrate the data from the mixed methods in this study exploring proactive behaviors and social integration within a medical education context, Western Sydney University, academic year 2019–2020.

findings from following the thread could be confirmed by the interview data. We assessed the degree of fit between quantitative and qualitative findings for confirmation (findings reinforced one another), expansion (findings expanded on the insights of the other), or discordance (findings were contradictory).<sup>42</sup> The use of the following the thread and mixed methods matrix techniques allowed us to create interpretations of the data that went beyond simply narratively combining the individual quantitative and qualitative parts of the study.<sup>49</sup>

### Researcher reflexivity

A.A. had no hierarchical relationship with the students, and W.C.-Y.H. and I.H., academic leaders at the university, were blinded to participants' involvement. All authors have experience in medical education and qualitative methods. W.C.-Y.H., A.A., P.W.T., and I.H. are trained clinicians. P.W.T. and A.A. have a special interest in both transitions and workplace learning. Team discussions allowed unique perspectives to be shared as data were interpreted; this minimized preconceived impressions.

### Ethical considerations

We received ethical approval for this study from Western Sydney University. Participants were assured there would be no impact on their progression, and they could choose to withdraw until data were anonymized or aggregated. All names used in this report are pseudonyms to maintain the participants' anonymity, while helping readers to engage meaningfully with their stories, feelings, and experiences.<sup>50</sup>

## Results

Below, we summarize our quantitative and qualitative findings separately and then present the integrated results by research aim. Both research aims (see above or below) were addressed by quantitative and qualitative findings.

Two hundred out of 377 students (53.1% response rate) completed the survey. Most were between 21 and 24 years old (159; 79.5%) and female (119; 59.5%). The distribution across third-, fourth-, and fifth-year cohorts was 84 (42.0%), 45 (22.5%), and 71 (35.5%), respectively. We interviewed 18 participants, who predominantly identified as female (13; 72.2%), were between the ages of 21 and

24 (15; 83.3%), and represented all clinical cohort years (third-year = 7, 38.9%; fourth-year = 5, 27.8%; fifth-year = 6, 33.3%).

### Research aim 1: Reported proactive behaviors and their association with social integration

**Quantitative results.** Of the 5 proactive behaviors, positive framing scored highest (mean = 3.89, SD = 0.78), while task negotiation scored lowest (mean = 2.30, SD = 0.99; Table 1). Most students scored highly on the social integration scale (mean = 5.74, SD = 0.83). Positive framing correlated significantly with social integration ( $r = 0.27$ ;  $P < .01$ ). There were no other significant correlations between proactive behavior and social integration scores.

**Qualitative results.** The proactive behaviors spontaneously described by the 18 interviewees mirrored those measured in the survey with the exception that students did not spontaneously mention positive framing when entering a new clerkship; however, when asked, some students did recognize their positive framing when entering a new clerkship. While quantitative results showed no relationship (except with positive framing) between proactive behaviors and students' social integration, this was discordant with qualitative findings. Many students felt that seeking feedback and information, feeling able to negotiate tasks on the team, and building relationships all led to a feeling of being a "respected and equal member of the team" (Davier, year 3). Further, if students entered a clerkship with a positive perspective, this led them

to enter a clerkship with more enthusiasm, resulting in team members recognizing this positive energy and enthusiasm and being more likely to include them in team activities; this inclusion meant that students felt more "like part of the team" (Davier, year 3).

**Integrated results.** We found that while students with lower social integration scores (< 4.00 out of 7) did not describe feeling confident at all when being proactive, those with higher social integration scores (> 6.00 out of 7) explained that their confidence to be proactive increased with knowledge acquisition. This then positively impacted their proactive behavior. However, interviews revealed that most students' confidence with regard to negotiating clinical tasks was low. Survey findings confirmed this; task negotiation scored lowest of all proactive behaviors (see Table 1). Qualitative data expanded on this and showed that many students reported limits to what demands they felt they could negotiate. While they could negotiate about doing a clinical task or not, they found it intimidating to negotiate how many hours per day were spent in the workplace. Generally, most students noted their confidence in negotiating tasks and roles became greater over time. However, in the quantitative data, proactive behavior scores decreased across academic years (see Table 2).

### Research aim 2: Enabling and inhibiting factors for proactive behavior

**Quantitative results.** Quantitatively, we found that being a third-year student was

Table 1

#### Mean Scores for 5 Proactive Behaviors and Social Integration in Year 3–5 Students, Western Sydney University, Academic Year 2019–2020

Construct <sup>a,b</sup>	Mean (SD), Cronbach's alpha
<b>Proactive behaviors</b>	
Feedback seeking	3.45 (0.70), 0.71
Information seeking	3.54 (0.84), 0.85
Task negotiation	2.30 (0.99), 0.87
Positive framing	3.89 (0.78), 0.83
Relationship building	3.36 (0.65), 0.79
<b>Social integration</b>	5.74 (0.83), 0.82

Abbreviation: SD, standard deviation.

<sup>a</sup>See Supplemental Digital Appendix 2 at <http://links.lww.com/ACADMED/B234> for sample items for each of the constructs.

<sup>b</sup>Proactive behavior items (25 items across the 5 proactive behaviors) are on a scale of 1 to 5, where 1 = to no extent and 5 = to a very great extent; social integration items (4 items) are on a scale of 1 to 7, where 1 = strongly disagree and 7 = strongly agree.

Table 2

**Mean Scores for Proactive Behaviors and Social Integration Showing Differences Between Year 3–5 Students, Western Sydney University, Academic Year 2019–2020**

Construct <sup>a,b</sup>	Mean (SD)			F value	P value <sup>c,d</sup>
	Year 3	Year 4	Year 5		
<b>Proactive behaviors</b>					
Feedback seeking	3.58 (0.72)	3.26 (0.73)	3.41 (0.62)	3.3	<b>.038</b>
Information seeking	3.85 (0.82)	3.47 (0.82)	3.24 (0.79)	11.2	<b>&lt; .001</b>
Task negotiation	2.42 (1.00)	2.34 (1.00)	2.22 (0.94)	1.0	.36
Positive framing	4.20 (0.74)	3.85 (0.73)	3.54 (0.82)	15.5	<b>&lt; .001</b>
Relationship building				8.9	<b>&lt; .001</b>
<i>Relationship building (with consultants)</i>	3.64 (1.00)	3.63 (0.80)	3.24 (0.81)	4.7	<b>.01</b>
<i>Relationship building (with junior doctors)</i>	4.18 (0.82)	3.92 (0.71)	3.44 (1.00)	13.5	<b>&lt; .001</b>
<b>Social integration</b>	5.71 (1.00)	5.76 (0.68)	5.76 (0.74)	0.9	.43

Abbreviation: SD, standard deviation.

<sup>a</sup>See Supplemental Digital Appendix 2 at <http://links.lww.com/ACADMED/B234> for sample items for each of the constructs.

<sup>b</sup>Proactive behavior items (25 items across the 5 proactive behaviors) are on a scale of 1 to 5, where 1 = to no extent and 5 = to a very great extent; social integration items (4 items) are on a scale of 1 to 7, where 1 = strongly disagree and 7 = strongly agree.

<sup>c</sup>P values in bold represent statistically significant values.

<sup>d</sup>Tukey post-hoc testing showed students in year 3 were likely to exhibit: more feedback seeking behavior than those in year 4 (3.58 vs 3.26;  $P = .036$ ), more information seeking than those in year 4 (3.85 vs 3.47;  $P = .033$ ) or year 5 (3.85 vs 3.24;  $P < .001$ ), and more positive framing than year 4 (4.20 vs 3.85;  $P < .001$ ) or year 5 (4.20 vs 3.54;  $P < .001$ ).

an enabling characteristic for proactive behavior, as third-year students had statistically significant higher information seeking and positive framing scores than fourth-year or fifth-year students and statistically significant higher feedback seeking scores than those in year 4 (Table 2).

**Qualitative results.** These findings prompted further exploration in interviews where we determined what other factors enabled or inhibited proactive behavior in our sample; we then categorized factors that enabled or inhibited students' proactive behavior as individual or social factors. There were 3 individual-related subthemes from the qualitative data: personal interests and motivations, personal tendencies, and energy levels. For example, many students' interest in a clerkship made them more likely to ask questions and negotiate specific tasks. There were also 3 social-related subthemes from the qualitative data: team climate, institutional influence, and relationships with others. For example, some students suggested that the team climate influenced whether they felt safe to be proactive or not. See Table 3 for descriptions and representative quotes or analytical memos of each of these themes.

**Integrated results.** Our integrated analysis of the quantitative and qualitative data led us to 3 linked antecedents, which both enabled and inhibited proactive behavior among students in our sample: capability, intention, and environment. We acknowledge the interplay of these antecedents for proactive behavior but describe them separately (see below) for clarity.

**Capability.** Students' tendency to be proactive or not was influenced by how capable they felt of being proactive. We describe capability in this context as the extent to which a student psychologically and physically perceived that they were able to be proactive. Students felt most capable of proactive behavior at the beginning of the day or at the start of a new clerkship because they had more mental energy at these times. Team members could reduce the mental effort required to be proactive by being welcoming; this, in turn, increased students' confidence and their perceived capability to be proactive. Therefore, this antecedent was the result of both individual and social factors as described below.

One crucial quantitative finding suggested that proactive behavior decreased with academic progression.

Qualitative data revealed that participants described having a proactive meter or battery. Many felt that this battery drained each time they asked a question or "put themselves out there" (Patricia, year 4) leaving them with little energy to "go above and beyond" (Michael, year 5). Qualitatively, some students described themselves as being innately proactive, whereas shy students, like Patricia (year 4), felt that proactive behavior took increased effort leading to her needing "a lot of recovery time because being assertive is so draining." This energy drain was concerning for her because she still had "to go and study" even after "clerkships take up so much."

Most students noted this energy drain usually happened toward the end of a day or a clerkship, or, as found in survey responses, over time as students advanced through academic years. Interview findings were discordant about the latter as students thought they became more proactive over time. Further, interview data revealed that the level of effort needed for proactive behavior determined how quickly students' proactive batteries were drained; for, example, more effort was required if a team was not welcoming, resulting in a quickly drained proactive battery. When members of the clinical team trusted

Table 3

**Overview of 6 Themes From Qualitative Data That Describe Factors That Influenced Medical Students' Proactive Behavior When Entering a New Clerkship, Western Sydney University, Academic Year 2019–2020**

Theme	Subtheme	Description	Exemplar quote or analytical memo <sup>a</sup>
Individual factors	Personal interests and motivations	Students' personal interest in a clerkship made them more likely to ask questions and negotiate specific tasks. Some students described that their future career motivated them to get feedback on their progress and develop a network within the clinical community.	"I really would like to do this cannula because I've never. And I kind of expressed to them I'd like to do more cannulas, or I'd like to learn about this when you have the time. If we could sit down and go through it, so ... I think like negotiating in that way." (Kimberly, year 4)
	Personal tendencies	Some students had a natural tendency to be positive about a new experience or to be more outspoken. This translated into being more engaged in team activities. Some students reported that they were innately shy and found it difficult to speak up about their learning goals or to initiate relationships.	"... I kind of see every [clerkship] as an opportunity. So, I want to experience everything that I can in the limited time that I have. And I'm someone who really doesn't like the idea of wasting time." (Juliëtte, year 3)
	Energy levels	Most students indicated that being proactive was draining. Having low energy limited how proactive they felt able to be. Team climate, time of the day or week, and competing workloads drained participants' mental energy.	"I have a big energy meter, and throughout the day it reduces slowly, every time I would be assertive or ask a question, it drains that meter ... it drains and drains and drains and by a certain point it's just empty ... I need to go home. I need a lot of recovery time because being assertive is so draining to me specifically." (Patricia, year 4)
Social factors	Team climate	Some students found that being assigned to a team that was inviting meant they used less mental effort to be proactive. Having a previous experience with team members who had negative reactions to students being proactive made students tentative about being proactive when entering another clerkship.	Lisa felt like a part of her clinical team, as she noted that her team members "made themselves feel very open ... simple small things like my registrar advocating a lunch time for the both of us." This environment made her feel safe to negotiate her tasks if she felt overburdened. (Lisa, year 5)
	Institutional influence	Some students recognized that they only sought feedback as required by their medical school in formative assessment exercises or for their portfolios. They also felt that the formative assessments were the only reasons some consultants were willing to give feedback at all.	Most of Akili's motivation to be proactive was external, coming from institution logbooks and so she could impress others. (Akili, year 4)
	Relationships with others	Many students described difficulties building relationships, especially with team members that were higher in the medical hierarchy. Most students were aware of this hierarchy, with one student placing medical students below the rubbish bins on the ward. Building a bond with team members created an environment that helped students feel safe to put themselves out there. Further, a few students' motivation was to help out team members and contribute to patient care.	One enabler for James "taking charge" of his own learning was feeling ignored by the medical team, which prompted him to develop relationships with nurses and negotiate with them to involve him in patient care tasks so that he could meet his clerkship goals. (James, year 3)

<sup>a</sup>All names used here are pseudonyms.

students to do tasks like cannulation, this gave them confidence, and they felt more capable of proactive behavior. For example, Stephanie (year 3) noted that "it's just a lot easier to be proactive when the team also is proactive about including you. So, it's sort of like a two-way street...."

*Intention.* Students' tendency to be proactive or not was also influenced by their individual intention to be proactive, which was influenced by numerous factors. We found that students' career interests and motivation influenced proactive behaviors. Additionally, some students planned in advance to be proactive once they were entering clerkships that were more relevant to

their career interests. Students' interest in a clerkship therefore increased their intention to be proactive in that clerkship; this was mainly seen in individuals with high social integration scores (> 6.00). For example, Akili (year 4) noted being proactive about interacting with patients during oncology because she "always wanted to find out more about oncology," so while she was on this clerkship, she was "more interested" and "preferred going in and speaking to patients."

While motivation increased students' tendency to be proactive, sources of motivation varied. Peers also influenced motivation and could trigger negative perceptions of a clerkship. This was confirmed in the survey, which showed

that students who lived with peers who were also in medicine had lower positive framing scores, as compared with those who lived with peers who were not in medicine (mean = 3.64 vs 4.25;  $P = .049$ ). Similarly, students who had previous contacts in health care had lower positive framing scores than those who did not (mean = 3.68 vs 3.97;  $P = .02$ ). Some students were motivated about their future in medicine and others about helping the team and improving the patient experience. In this way, the future-oriented motivation for some individuals being proactive was for the benefit of the team and patients.

*Environment.* Finally, students' tendency to be proactive or not was influenced

by their immediate environment and system-level factors. People, protocols, and a pandemic (COVID-19) created an environment that enabled or inhibited students being proactive when entering a clerkship. Relationships with junior doctors and consultants created a supportive environment for proactive behavior, which influenced students' capability to be proactive in a given situation. All interview participants found it easier to build relationships with junior doctors than with consultants. Quantitative data confirmed this, as students had higher relationship building scores for junior doctors than for consultants (see Table 2). Qualitative data expanded on this finding; students spent more time with junior doctors, who were less busy or intimidating than consultants. As a result, students sought feedback and information from junior doctors more than from consultants. Similarly, students rarely negotiated tasks with consultants as speaking up to senior team members was intimidating. For example, as James (year 3) reflected "... normally, when the consultant tells you to do something, you don't second guess. You just say I'm going to do it. If he says to jump up and spin around three times, you've got to do that..."

Given this difference in relationship building between junior doctors and

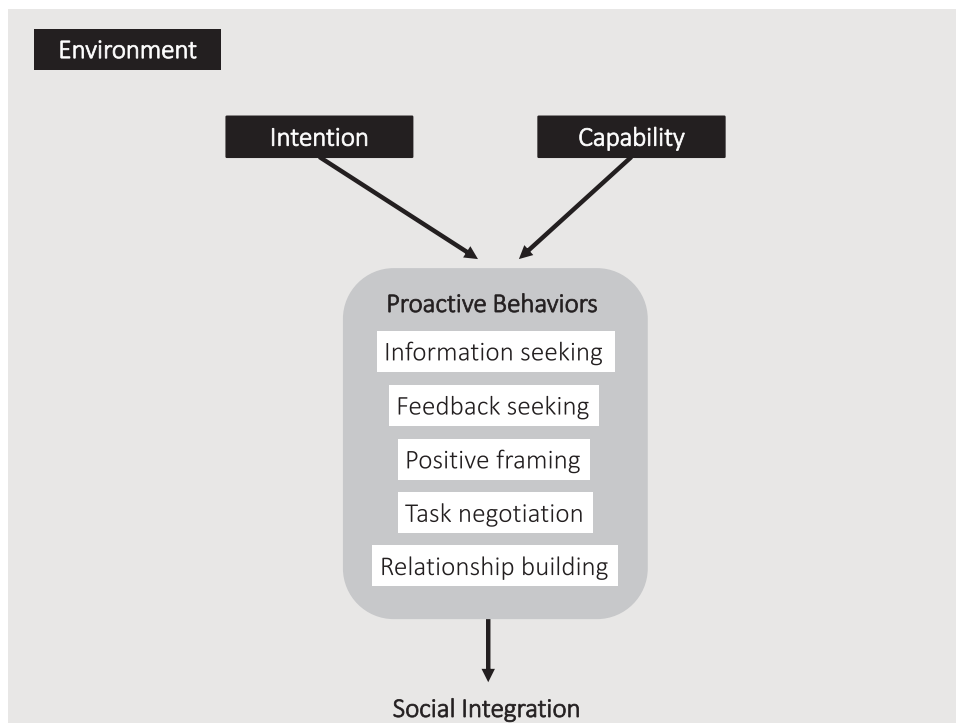
consultants, we looked at students' relationship building scores with others outside their clinical team; these were comparatively low (mean = 2.55). However, in the qualitative data, our findings were discordant in some cases; for example, a few participants in the third and fifth years developed relationships with the nursing staff, especially during the first weeks of a new clerkship. These students would inform nurses of patient care changes following medical ward rounds and the nurses, in turn, would involve them in patient care tasks.

Some students received feedback from doctors without asking or only via mandatory formative assessments; this limited their feedback seeking. Further, COVID-19 protocols to protect and inform all health care workers of changed hospital policies meant that a lot of logistical information was shared at the beginning of new clerkships, which led to students feeling there was less need to seek information when entering a new clerkship. Simultaneously, COVID-19 reduced learning opportunities due to social distancing protocols, which led some students to be proactive about creating new learning opportunities because they could not "go into [the

operating] theater [due to COVID-19]," which as Stephanie (year 3) noted led to her being "really proactive in doing histories, doing mini-CEX [clinical evaluation exercises], and doing all these little tasks just because there isn't much else to do..."

**Discussion**

Socialization into clinical environments is notoriously difficult for undergraduate medical students.<sup>2,3</sup> Both individuals and the organization can use socialization tactics (strategies to improve socialization). Being proactive is one socialization tactic that can be harnessed by medical students. We aimed to enhance the understanding of proactive behavior in medical students entering a new clerkship. We found that positive framing and task negotiation had the highest and lowest scores, respectively, of the proactive behaviors we measured. Additionally, positive framing was significantly associated with a sense of social integration. Figure 2 summarizes our understanding of proactivity and social integration following this project. We found 3 linked antecedents for proactive behavior: intention, capability, and environment. These antecedents have some overlap as, for example,



**Figure 2** Conceptual model generated from mixed methods results indicating 3 linked antecedents (in black boxes) that influence whether students entering a new clerkship display proactive behaviors (gray box), from a study exploring proactive behaviors and social integration within a medical education context, Western Sydney University, academic year 2019–2020.

proactive behavior is exhibited within the environment, which, in turn, influences students' perceived capability to be proactive.

Positively framing the challenges of a new clerkship was the most prominent proactive behavior exhibited. Positive framing is a cognitive mechanism that newcomers can use to "alter their understanding of a situation by explicitly controlling the cognitive frame they place on it."<sup>14</sup> Positive framing is shown to be related to positive mood and emotions.<sup>51</sup> Similar to what we found in our study, Kowsikka and James<sup>16</sup> reported that when newcomers engage in positive framing, they are more confident and ultimately experience job satisfaction and a sense of social integration. It is therefore our opinion that being positive likely promotes relationship building by giving newcomers confidence to interact with others.<sup>16</sup> Some educators have found success in teaching positive framing, highlighting that this proactive behavior can be enhanced.<sup>32</sup>

Novice clinical (year 3) students had the highest proactive behavior scores when compared with senior (year 4 and 5) medical students. While this contrasts with other higher education students who become more proactive over time,<sup>52</sup> we postulate that in the medical context, as students become increasingly familiar with the clinical context, proactive behavior becomes less necessary. However, all of the students we interviewed also described feeling more physically capable of proactivity at the beginning of a new clerkship or the beginning of a new day. Further, we found that being proactive drained students' mental energy, especially if they were shy. Proactive behavior could be mentally taxing, but we also found that team members could cultivate an environment that minimizes the mental effort needed for proactive behavior. Researchers have found that medical students make a cognitive appraisal of the costs (e.g., in terms of effort and saving face) associated with feedback seeking.<sup>53</sup> Literature in other fields suggests that sustained physical or psychological effort can exhaust one's mental and physical resources through energy depletion.<sup>54,55</sup> The hierarchical nature of medicine could further potentiate the influence that others in the clinical environment may have on the energy drain students experience when they engage in proactive behaviors.

This energy drain bears conceptual similarities to the emotional exhaustion of burnout<sup>56</sup> and the coping reservoir of wellness described by Dunn et al.<sup>57</sup> Additionally, service jobs (e.g., providing health services<sup>30</sup>) require displaying organizationally desirable emotions—or emotional labor.<sup>58</sup> Emotional labor has been associated with burnout.<sup>59</sup> Sustained proactive behavior could contribute to the drain on students' psychological resources and potentially result in exhaustion and burnout.<sup>57</sup> Thus, it is important to promote adequate rest for psychological recovery.<sup>60</sup> Additionally, intentionally developing students' resilience (the learned ability to bounce back from challenges<sup>61</sup>) could be equally beneficial during stressful transitions in training.<sup>61</sup>

Social context can play a significant role in newcomers' proactive behavior.<sup>16</sup>

We found that students' tendency to be proactive or not was influenced by their immediate environment and system-level factors. Developing relationships reduces social isolation and the mental effort associated with proactive behavior in a hierarchical environment and increases social integration.<sup>14,44</sup> Strong relationships at work promote psychological safety, which facilitates proactive behavior.<sup>62</sup> Further, Voogt et al<sup>29</sup> found that low psychological safety limited residents' tendency to speak up about medical errors and workplace issues. Often consultants and residents prefer teaching students who are proactive.<sup>23</sup> These doctors could also influence desired proactive behavior by considering the psychological safety of clinical learning spaces. Lastly, it could be important to consider how distance, as a result of the COVID-19 pandemic—for example, due to the increase in telehealth—could impact psychological safety and students' ability to develop meaningful relationships with others in the clinical space.<sup>63</sup>

### Implications for practice and future research

Some educators have found success with teaching specific proactive behaviors.<sup>32</sup> The creation of workshops and other innovations to promote proactive behaviors may benefit the health professions field; for example, feedback seeking has increased after workshops.<sup>64</sup> However, creating an environment that supports students' proactive behaviors and learning<sup>29</sup> is paramount, as even

naturally proactive individuals can be hindered when placed in an environment that stifles proactivity.<sup>65</sup> One way the aforementioned social limitations of proactive behavior may play out is called the "initiative paradox."<sup>66</sup> Within this paradox, proactive newcomers are not always well accepted by seniors or peers who perceive others' proactive behavior as bothersome or as indicating an inability to follow the rules. Assessing proactive behaviors, such as task negotiation, as an outcome of clerkships could ultimately lead to the normalization of students engaging in these behaviors (e.g., negotiating their clinical tasks), which could help to counteract the initiative paradox. Further, studying clerkship team members' perceptions and expectations of students' proactive behavior could be enlightening.

We found that having preexisting relationships with other health care students and professionals reduced students' tendency to be positive about a clerkship. The diverse backgrounds of medical students require us to consider the influence that the privilege of having a preexisting network of health care professionals may have on socialization to clinical environments. Conversely, race/ethnicity,<sup>67</sup> sexual orientation,<sup>67</sup> and being an international medical graduate<sup>68</sup> could have the opposite effect. This is important to consider as diversity<sup>67</sup> remains a goal in health professions education. Additionally, exploring how interprofessional relationships could impact proactive behavior could also be a useful avenue for future research. Future studies could use observational methods and longitudinal research to investigate how proactive behavior is exhibited and changes over time in an authentic clinical setting. Lastly, future research could explore other proactive behaviors (e.g., speaking up<sup>29</sup>) and their outcomes.

### Strengths and limitations

Using mixed methods allowed us to offer more significant insights into proactivity among students entering a new clerkship. The variety of contexts and backgrounds from our international research team enhanced our interpretations and reduced any individual biases. Our findings are in line with those found using similar instruments in other populations,<sup>14,69</sup> increasing the likelihood of transferability of our conclusions. However, while concepts from the organizational



socialization field offer some explanatory power to findings in medicine, we cannot lose sight of the fact that medicine is a dynamic field; medical trainees change environments frequently<sup>70</sup> and the composition of clinical teams constantly shifts. Thus, while sensitizing concepts from organizational socialization theory do have relevance, theoretical refinement is necessary when bringing these concepts to the field of medicine. Further, we provided a conceptual model that future research can build on, although we acknowledge that the single-institution nature of this study may limit its transferability. Secondly, we were limited in instrument choices given that these constructs are not well explored in health professions education. We had a 53.1% response rate. While we did not reach 60%, the response rate in the third- and fifth-year groups was between 70% and 80%. Lastly, we used a cross-sectional survey exploring students' perceptions, which limits our conclusions about longitudinal development of proactivity and may just reflect differences between cohorts.

## Conclusions

This study provides evidence on the proactive behaviors of medical students entering new clinical clerkships. Students who framed the experience positively were more likely to report increased social integration. Initiating task negotiation was challenging for most students. By condensing our findings into 3 linked antecedents to proactive behavior—intention, capability, and environment—we propose a conceptual model for proactivity and social integration to support socialization and learning during clinical transitions for future research and interventional design. Addressing both individual and organizational socialization tactics and especially how these relate to students' proactivity will be necessary if the growing medical workforce is to be proactive.

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