ORIGINAL RESEARCH

Trusted to Learn: a Qualitative Study of Clerkship Students' Perspectives on Trust in the Clinical Learning Environment

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BACKGROUND: Trust informs supervision decisions in medical training. Factors that influence trust differ depending on learners' and supervisors' level. Research has focused on resident trainees; questions exist about how medical students experience entrustment.

OBJECTIVE: This study examines how clerkship students perceive supervisors' trust in them and its impact on their learning.

DESIGN: Qualitative study using individual semi-structured interviews.

PARTICIPANTS: Clerkship medical students at the University of California, San Francisco.

APPROACH: We invited 30 core clerkship students to participate in interviews (October 2017 to February 2018) eliciting examples of appropriate, over-, and under-trust. We coded and analyzed transcripts using thematic analysis.

KEY RESULTS: Sixteen (53%) students participated. Three major themes arose: trust as scaffolding for learning, effects of trust on the learning environment, and consequences of trust for patients. Appropriate trust usually involved coaching and close guidance, often with more junior supervisors (interns or residents). These situations fostered students' motivation to learn, sense of value on the team, and perceived benefits to patients. Over-trust was characterized by task assignment without clear instruction, supervision, or feedback. Over-trust prompted student anxiety and stress, and concerns for potential patient harm. Under-trust was characterized by lack of clarity about the student role, leading to frustration and discontent, with unclear impact on patients. Students attributed inappropriate trust to contextual and supervisor factors and did not feel empowered to intervene due to concerns about performance evaluations and hierarchy.

CONCLUSIONS: As early learners in the clinical workplace, students frame trust as entailing high levels of support. It is important for medical educators to consider ways to train resident and faculty supervisors to enact trust and supervision for students differently than for residents. Structures that encourage students and supervisors to discuss trust and supervision in a transparent way can enhance learning.

KEY WORDS: qualitative research; medical education-entrustment; medical education-undergraduate; medical education-clinical skills training.

BACKGROUND

Trust, defined as the "belief that someone or something is reliable, good, honest, effective,"[1] guides clinical supervisors' decisions about how much supervision to provide their trainees.[2–7] Trust is influenced by multiple factors, which may differ depending on the learners' and supervisors' level. Investigators have proposed a five-factor model to describe entrustment dynamics, which includes trainee characteristics, supervisor characteristics, trainee-supervisor relationship, task, and context.[6] The Association of American Medical Colleges has proposed core entrustable professional activities (EPAs) for students, with the intent that entrustability could be an effective approach to assessing students' competence and adapting supervision for key clinical tasks.[8]

Previous research, which has primarily focused on resident trainees, showed that trainees' preferences regarding supervision change over time based on their learning needs and tend to equate appropriate levels of supervision to appropriate levels of supervisor trust.[9] Interns preferred more detail-oriented supervisors early on, and more autonomy in execution of tasks as they gained confidence. Senior residents desired close supervision of management decisions initially, but later strived for greater independence in directing patient care. When trainees felt they received closer supervision than warranted, they felt insufficiently trusted, whereas when they received more autonomy than they felt they deserved, they felt trusted too much. From the supervisor perspective, resident supervisors emphasized task-specific competence and reliability of interns to determine entrustability; attendings focused on holistic competency of residents, including leadership and communication skills, to determine trustworthiness.[7,8] Studies comparing trainee and supervisor perceptions around appropriate levels of autonomy suggest that resident

trainees desire more autonomy than attending supervisors feel comfortable giving.[5,10]

Based on these findings about the developmental nature of trust—from the perspectives of both trainees and supervisors—questions exist about how medical students, as the most junior members of the physician team, experience entrustment. While intern and resident trainees have well-defined roles on the care team—with established expectations and responsibilities—the role of clerkship students is more variable.[11] The lenses of social learning theory and workplace learning[12–14] explicate how clerkship students learn their roles through social processes in their workplace. As students familiarize themselves with their clinical learning environment—traditionally rotating from one specialty to the next—they must re-negotiate their roles based on setting and team needs.[15,16] Student perceptions of trust may have important implications for their patient care roles, learning and engagement.

The goal of this study is to explore clerkship students' perceptions of trust in the context of the clinical learning environment, and the impact that appropriate, over-, and under-trust have on their learning experiences. These findings can inform the design of students' clinical experiences and approaches to optimize learning.

METHODS

Study Design

This qualitative study used thematic analysis of semi-structured interviews of clerkship medical students.

Participants and Setting

This study was conducted at the University of California, San Francisco (UCSF). We chose to explore students' experiences in the traditional rotational clerkship model, representing the most common model nationally. UCSF students complete 8 core clerkships, each lasting 2–8 weeks (anesthesia [2 weeks], family medicine [longitudinal], general surgery [8], internal medicine [8], neurology [4], obstetrics/gynecology [6], pediatrics [6], and psychiatry [4]), across multiple university and community-based sites. We invited 30 randomly selected clerkship students (of 131) during their fourth and fifth core clerkship blocks to participate in semi-structured interviews. We chose to interview students in the middle of the year because they could draw from a range of experiences across clerkships. The UCSF Institutional Review Board deemed this study exempt.

Procedures

We emailed students up to four times inviting their voluntary participation. One trained investigator (NK) conducted all interviews in-person or by phone between October 2017 and February 2018. The interview guide (Online Appendix 1) asked students to describe specific examples of appropriate, over-, and under-trust from their clerkships. To help students generate examples of different scenarios of trust, we described appropriate, over-, and under-trust as "just right," "too little," and "over" supervision, respectively. Interview questions and probes were derived from the five-factor model of trust and prior interviews which asked supervisors to describe examples of times they trusted or did not trust their residents and how trust impacted their supervision.[6,7,17] Students could discuss scenarios involving any intern, resident, or attending supervisors. We additionally probed about the impact of trust on their learning and patient care. We piloted the interview guide with one student for flow, timing, and clarity of questions, and iteratively modified it over 7 interviews after regular debriefings between two investigators (NK, LS). All interviews, including the pilot, were included in the analysis, because the questions did not change significantly. We continued interviews until we reached theoretical sufficiency.[18] Interviews were audio-recorded, professionally transcribed, and de-identified. Participants received a $20 electronic gift card.

Data Analysis

We analyzed interview transcripts using thematic analysis, employing previously defined factors of trust as a sensitizing concept.[6,19,20] Two investigators (NK, LS) each read 5 transcripts independently to develop preliminary coding categories based on recurrent concepts. We reconciled coding categories through discussion to create a preliminary codebook. The other investigator (KEH) then used the codebook to code a different transcript to provide additional insights; all investigators then revised and finalized a codebook. Two investigators (NK, LS) coded each interview independently, followed by discussion and reconciliation of discrepancies. We organized coded transcripts using Dedoose analytic software, version 8.0.36 (SocioCultural Research Consultants, Los Angeles, CA). All investigators then reviewed coded excerpts to identify themes, which they iteratively refined through discussion and transcript review.

We considered reflexivity in our work.[21] Each investigator contributed different perspectives in data interpretation based on recent experiences as a student (NK, fourth-year medical student), regular interactions with trainees across the training continuum (LS, clinician-educator), and experience with assessment and evaluations (KEH, associate dean for assessment, former clerkship director). Additionally, two investigators (KEH, LS) brought perspectives from prior research related to trust and role. To minimize individual bias in data interpretation, we reviewed data independently and engaged in discussion and emails regularly to share, corroborate, and challenge one another's interpretations.

Trust as scaffolding for learning

Appropriate trust
- Individual coaching based on abilities and needs
- Emphasis on supervisor support, preference for guidance over independence
- Importance of expectation setting, specificity of responsibilities

Inappropriate trust
- Lack of clear instruction or role on team
- Lack of oversight or feedback leading to less opportunity to learn
- Lack of active patient care roles leading to missed learning opportunities

Effects of trust on learning environment

Appropriate trust
- Strong positive learning environment; enabled students to embrace learner roles and also contribute as providers

Inappropriate trust
- Suboptimal learning environment; made students uncomfortable and unhappy, yet unable to address due to concerns about performance, grading and hierarchy

Consequences of trust for patients

Appropriate trust
- Students felt they were contributing meaningfully to patient care, improving team efficiency

Inappropriate trust
- When over-trusted, students concerned about potential for patient harm
- When under-trusted, no significant impact on patients

Figure 1 Summary of major themes from clerkship student perspectives on trust in the clinical learning environment.

RESULTS

Sixteen (53%) of 30 invited students participated. Five students expressed interest but were unable to schedule, 3 declined participation, and 6 did not respond to the invitation. Among participants, 9 were male (56%). The average age was 26.4 years (SD = 2.2). Interviews lasted 24 to 58 min (average 42.6 ± 9.4).

Three major themes arose: (1) trust as scaffolding for learning, (2) effects of trust on the learning environment, and (3) consequences of trust for patients. Each theme is discussed below and summarized in Figure 1. Additional details are described in Online Appendix 2. Quotations are shown with participants' study number.

Trust as Scaffolding for Learning

Students characterized experiences of appropriate supervisor trust as being coached individually by supervisors who understood their knowledge, abilities, and learning needs. They recalled feelings of partnership when supervisors identified student tasks and challenged the student to perform with close support. Students' definitions of trust did not emphasize student independence, but rather stressed scaffolding for learning via supervisor support, proximity, and awareness of students' actions. One student explained: "Even though I was nervous and it was a first-time thing, I knew that she was there in case I did anything wrong." (S02) A minority of students, particularly those later in their rotation who felt they understood the system and workflow of the team, described trust as student autonomy: "I felt fully confident in saying, I want to take full care of my patients, which means I want to be the one responsible for everything." (S09)

Appropriate trust grew from initial discussions about expectations for specific tasks. Students welcomed being observed or observing a supervisor perform a task when that represented progress toward the student doing that activity. Multiple students described positive learning experiences while being guided to do part of a task or procedure, even when the supervisor did the first steps as an example or took over when a student had trouble. Students appreciated supervisors' attention to students' learning and comfort, as well as patient safety. Students commonly emphasized that appropriately trusting supervisors were nearby, sometimes providing stepwise guidance, and always aware of what students were doing. Appropriate trust never meant being "thrown in" (S15) without preceding discussions of the student's prior experience and the steps of tasks.

Students' characterization of appropriate and inappropriate trust spanned tasks and disciplines. They shared examples of appropriate trust for data gathering through the history and physical exam, calling consults, providing wound care, and assisting with procedures. In both non-procedural and procedural situations, appropriate trust was similarly characterized with the supervisor as coach who would guide them through the steps of a task. When sharing a new diagnosis with a patient and family, a student experienced "the perfect amount of supervision, letting me do the talking but at the same time being there and being able to take over when it was appropriate." (S07) In a procedural setting, a student described

that the supervisor "stood there the entire time, coached me through every step, even with, 'Here's how you're going to load the needle. Here's the angle you're going to use.' … Very narrated experience, which made me feel like they trusted me that I could do this, but didn't leave me alone to just do it by myself." (S05)

Students typically described appropriate trust with interns and residents, whereas inappropriate trust examples tended to involve senior residents or attendings. Descriptions of appropriate trust with more junior supervisors included double-checking work, investment in learner and patient outcomes, and attentiveness to appropriateness of tasks for a student's level of comfort: "It's a wonderful feeling when you feel like your intern or resident, they're invested in your experience and your development as a doctor in training. When they ask you, 'How do you feel? Are you comfortable with this?'" (S11) Students often attributed scenarios of inappropriate trust from senior residents or attendings to supervisors' lack of knowledge about student roles or abilities: "I was appreciative that he [chief resident] had assigned me this task of changing the wound dressing. I felt like he trusted me to do that, but then I did feel like I didn't quite have enough experience or information to do it well." (S05)

Supervisors who afforded appropriate trust also provided corrections and incrementally increased student responsibility. Frequent supervisor check-ins felt ideal. Students sought confirmation that they were doing things correctly and desired challenges to take on slightly more responsibility. A student helping to call consultants described, "Even though he trusted me to have these conversations, he was constantly checking back in and asking what the updates were…helping me make sure I was understanding everything." (S12) A student felt trusted to write notes in the medical record specifically because her supervisors made corrections afterward, thereby demonstrating that the rest of the note was accurate and that they wanted to contribute to the student's learning. Students appreciated supervisors "giving me a task that I could accomplish and giving me the confidence" (S14) as well as defining the next task to grow skills.

Students characterized over-trust as the assignment of tasks without clear instruction, supervision, or feedback. Students shared examples of conducting tasks for which they felt underprepared, without "clear understanding of why or what exactly I should be doing." (S11) After completing a task, such as a physical exam, note, or procedure, students reported having lingering questions about whether they had acted correctly. One student lamented, "I feel like the real effect on my learning here is the lack of feedback." (S04)

Students portrayed under-trust as an overarching lack of clarity about their role on the care team or what they should be allowed to do. At times, they were relegated to shadowing roles with explicit instructions not to engage in active patient care without supervisor approval, even when students felt confident in their skills. When they were allowed to participate in tasks, students who felt under-trusted described that the supervisor either "stepped in and kind of took over" (S09) or devalued students' work by stating that the supervisor would have to repeat it anyway.

Effect on Learning Environment

Appropriate trust created a strongly positive learning environment, characterized by students' motivation to go into work, learn, and contribute to the team. As such, trust enabled students to embrace their role as learners, and also to contribute as providers. They also felt comfortable asking questions, sharing insecurities, or soliciting additional responsibilities. One student reflected, "It makes you excited to learn because it's like, since they trust me I want to do my best to contribute and actually feel like a team member." (S11) Some participants described being valued team members as being treated "like there was not a massive gap between me and [my intern]." (S06) Trust empowered students to be open and honest with supervisors about their comfort level with tasks: asking for help when needed and for additional responsibilities when they felt ready. When students felt over-trusted, some viewed the situation positively as active learning, but many shared that the process of learning was "nerve-wracking" (S02) or "uncomfortable" (S05). Most felt disheartened by the lack of supervisor guidance and concerned that the situation was detrimental to learning. Some students who discussed the positive aspects of active learning associated with over-trust later re-characterized the experience as an appropriate level of trust, reflecting that they had been ready despite feelings of anxiety. In under-trust, students felt their learning was "stunted" (S12) because of their passive roles, leading to feelings of frustration and unhappiness due to being marginalized from the team's activities.

The suboptimal learning environment in scenarios of inappropriate trust manifested in students' concerns about performance, grades, and hierarchy. In over-trust, students felt uncomfortable asking for help because they did not want to seem incapable or unhelpful, and "felt that pressure to really try to perform." (S02) Students worried that addressing under-trust could be seen as overstepping, and felt obligated to "respect the hierarchies." (S05) In contrast, in appropriate trust scenarios, students felt able to speak up without worrying about repercussions: "I was able to let my senior know when I was uncomfortable with doing certain things and not feel like it was going to negatively impact me." (S13)

Students expended significant cognitive and emotional energy inferring why a level of trust was inappropriate, often citing supervisor and context factors. Students commonly perceived over-trust as due to supervisors being so busy or overwhelmed by clinical demands that they delegated tasks—inappropriate for level of readiness or without clear guidance—to students. This delegation led to missed learning opportunities. As one student shared, "To this day, I'm not quite sure exactly… if I'm doing anything incorrectly." (S04) In under-trust, students felt powerless to contribute because

supervisors were concerned that teaching would slow care efficiency and appeared not to understand students' skills and readiness to participate: "I don't think the student role was clearly defined for them either. Oftentimes I'd ask what I should be doing, if I could help with anything. They wouldn't really have any way to guide that." (S08) New sites or new supervisors who were less familiar with medical students also promoted inappropriate trust. Occasionally, students mentioned their own behaviors that contributed to misaligned trust, including lack of experience or lack of initiative. One student reflected, "In hindsight, if I had had a little bit more experience, I would have recognized that and been more proactive." (S03)

Scenarios of inappropriate trust influenced students' relationships with their supervisors. In over-trust, students described that successful performance could improve relationships through their own increased feelings of competency and value on the team. However, other students described how over-trust eroded their perceptions of the supervisor, and thus their relationship: "On a basic level I just need to somewhat trust that the attending will prevent the trainees from doing harm to people." (S10) In under-trust, students often described that it was "difficult to make a personal connection" (S14) with their supervisor. Sometimes, this was due to a personality clash; other times, they described a professional relationship but that the supervisor was not invested in teaching, knowing the student individually, or helping the student become a valued team member.

Consequences of Trust for Patients

Appropriate trust promoted students' perceptions of being able to contribute meaningfully to patient care. Students recognized that they had more time and fewer responsibilities than other team members. Consequently, when given the opportunity to assume central patient care roles, they could leverage this available time to improve patient care or patients' experience: "Everyone was running around. If I can do that to help the team and help the patient, I think that's a benefit to patient care." (S11) Students expressed pride that appropriate trust also enabled them to improve team efficiency: "It allowed our patients to get the information faster and just for things to be addressed more quickly." (S04) Trust also fostered a learning environment where students felt comfortable raising concerns around patient care issues and advocating for patients.

Students experiencing over-trust worried that their inexperience could negatively affect patients' care. When students felt that their work was not being supervised appropriately, such as with exam findings, medication orders, or suture removals, they worried about potential adverse events: "It's one of those things because it turned out okay I don't think it did impact patient care, but it could have had I messed up and did something wrong it could have negatively impacted care." (S02) Students were more ambivalent about the effect of under-trust on patient care. Many felt it did not impact care

at all, some felt that underutilization of students led to delays in care, and others imagined benefits to patients through more efficient care delivery without student involvement. One student expressed: "I think the patients received good care and the people I worked with were good physicians and really cared about the patients.... I think something I could have contributed was spending more time with the patients." (S08)

DISCUSSION

This study aimed to understand how clerkship students experience trust. Through accounts of appropriate, over-, and under-trust, students described appropriate trust as opportunities for coaching, feedback, and scaffolding of their learning, irrespective of specialty. Student, supervisor, relationship, context, and task factors all contributed to feelings of trust, with appropriate trust most frequently described with more junior supervisors. Challenges specific to students related to hierarchy and grading hindered students' ability to address inappropriate trust.

Students emphasized the importance of scaffolding of learning experiences for them to feel trusted.[22,23] As early learners in the clinical workplace, students desired a high level of support conducting clinical tasks. The emphasis on guided opportunities for practice, rich with formative feedback, demonstrates that students embrace learner roles. This finding contrasts with prior studies characterizing trust among housestaff trainees, who define trust as graded autonomy and seek independent doctor roles.[9,10,24] Much existing literature on trust has focused on promoting and preserving autonomy.[4,25,26] Studies of supervisor behaviors highlight strategies to "watch at a distance," and engage in background supervision to promote trainee perceptions of autonomy.[4,17,27] However, this method of supervision for students—at least midway through their clerkship year—prompted feelings of discomfort and stress associated with perceived over-trust. Similar sentiments arose in other studies when students felt unprepared to perform clinical tasks.[28,29] Considering Vygotsky's zone of proximal development,[30] this reaction reflects clerkship students' early stage of development, in which they need stepwise guidance and careful task selection. Their descriptions of appropriate trust provide additional validity to the levels of entrustment described for student EPAs:[31] ideal learning experiences entailed incremental roles starting with observing activities, then performing well-defined tasks under close supervision.

The close supervision and guidance that students favored typically came from early supervisors, specifically junior housestaff. This preference highlights the value of "cognitive congruence" associated with near-peer teaching that allows for natural scaffolding of tasks and responsibilities.[32,33] In a recent study exploring students' perceptions of meaningful feedback on EPAs, supervisor credibility, knowledge about the task, and longitudinal relationships were important supports for students

for performance.[34] The relationship between students and near-peer supervisors seems to promote a two-way dialogue, as supervisors provide open and honest feedback and students voice uncertainties and ask clarifying questions that in turn create further opportunities for growth and learning.[35] As mandated by the LCME, additional emphasis on appropriate resident supervision of students, particularly among junior housestaff, is warranted.[36]

The way students discussed context and task in their descriptions of trust highlights affordances for learning in the workplace.[13] When the workplace seemed to have the right volume of work, students felt that their supervisors could take the time to coach them through tasks appropriate for their level, facilitating learning, patient care responsibility, and team integration—important elements of satisfaction in students' transitions into the clerkship year.[37] When the workplace seemed too busy, students felt that their learning suffered because supervisors either assigned them tasks that had to be done at the expense of students' comfort (over-trust), or assigned no tasks at all (under-trust). Resident supervisors have discussed similar challenges to providing appropriate levels of trust to interns within busy clinical environments.[17] Another recent study exploring factors influencing residents' attempts at technical skills in a pediatric emergency setting found that while learner, supervisor, and environmental factors were important, competing priorities and practical issues unrelated to trust often determined whether residents attempted technical tasks.[38] These practical issues—which affect learner tasks, supervision, and roles irrespective of competency or trust—require careful attention to clinical service design to allow for learning to occur.

Notably, students did not feel comfortable addressing inappropriate trust. A previous study of interns revealed that they also did not feel empowered to provide constructive feedback to their supervisors related to their supervisory style.[9] However, while interns focused on not wanting to hurt the feelings of their resident supervisors, whom they also considered friends and colleagues, students focused on the negative implications of self-advocacy for their evaluations. As students transition into clerkships, where expectations and evaluations can seem vague and subjective, they feel a constant pressure to perform, in hopes of creating positive impressions and ultimately favorable grades.[28,39,40] Given the potential negative learning and patient safety implications associated with inappropriate trust, as well as students' reliance on more advanced team members to direct them toward appropriate patient care roles and responsibilities,[41,42] supervisor training and systemic changes are needed to improve alignment of trust with student needs. For example, redesigning evaluation forms to reward students and supervisors alike for explicitly discussing entrustment and supervision would promote dialogue about appropriate assignment of responsibilities for each student. This dialogue could also encourage students to reflect critically about their level of competence, supervisory needs, and readiness for additional responsibilities.

This study has limitations. These single-institution findings may not generalize to other institutions. However, we captured a diverse range of student experiences across different sites, specialties, and supervisors. We focused on students in the block rotation model and did not include longitudinal integrated clerkship experiences. Because students were interviewed mid-year, we did not capture perspectives of students at the end of the clerkship experience. Our participation rate was low, largely due to scheduling challenges with students' clerkships. Lastly, our data represent student perceptions of trust, which we did not corroborate with supervising residents or attendings. Previous literature has shown that there may be discordance between attending and resident perceptions of autonomy and supervision.[5,10] It is possible that over- or under-trust described by students may have represented appropriate trust from the supervisors' perspective.

Overall, this study adds a new dimension to existing literature on trust by explicating the student experience of trust and its effects on their learning and patient care. As early learners, students have different learning needs from housestaff, which necessitate framing trust in the context of deliberate guidance rather than autonomy. These findings suggest that it is important for medical educators to consider ways to train resident and faculty supervisors to enact trust and supervision for students differently than for residents. Structures that encourage students and supervisors to discuss trust and supervision in a transparent way can enhance students' opportunities for active participation and help prevent inappropriate trust.

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