

Trainees' perceptions of being allowed to fail in clinical training

Citation for published version (APA):

Klasen, J. M., Teunissen, P. W., Driessen, E., & Lingard, L. A. (2023). Trainees' perceptions of being allowed to fail in clinical training: A sense-making model. Medical Education, 57(5), 430-439. https://doi.org/10.1111/medu.14966

Document status and date: Published: 01/05/2023

DOI: 10.1111/medu.14966

Document Version: Publisher's PDF, also known as Version of record

Document license: Taverne

Please check the document version of this publication:

 A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.

• The final author version and the galley proof are versions of the publication after peer review.

 The final published version features the final layout of the paper including the volume, issue and page numbers.

Link to publication

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these riahts.

Users may download and print one copy of any publication from the public portal for the purpose of private study or research.

- You may not further distribute the material or use it for any profit-making activity or commercial gain
 You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

www.umlib.nl/taverne-license

Take down policy

If you believe that this document breaches copyright please contact us at:

repository@maastrichtuniversity.nl

providing details and we will investigate your claim.

RESEARCH ARTICLE

Trainees' perceptions of being allowed to fail in clinical training: A sense-making model

Jennifer M. Klasen¹ | Pim W. Teunissen^{2,3} | Erik Driessen³ | Lorelei A. Lingard^{4,5}

¹Clarunis, Department of Visceral Surgery, University Centre for Gastrointestinal and Liver Diseases, University Hospital Basel, Basel. Switzerland

²Department of Obstetrics and Gynecology, Maastricht University Medical Centre, Maastricht, The Netherlands

³School of Health Professions Education (SHE), Faculty of Health Medicine and Life Sciences (FHML), Maastricht University, Maastricht, The Netherland

⁴Centre for Education Research and Innovation, Schulich School of Medicine and Dentistry, Western University, London, Ontario, Canada

⁵Department of Medicine, University of Western Ontario, London, Ontario, Canada

Correspondence

Jennifer M. Klasen, Clarunis, Department of Visceral Surgery, University Center for Gastrointestinal and Liver, Diseases, St. Claraspital and University Hospital Basel, CH-4002 Basel, Switzerland, Email: jennifer.klasen@clarunis.ch

Funding information Not applicable.

Abstract

Introduction: Clinical supervisors allow trainees to fail during clinical situations when trainee learning outweighs concerns for patient safety. Trainees perceive failure as both educationally valuable and emotionally draining; however, the nuance of supervised failures has not been researched from the trainee perspective. This study explored trainees' awareness and their experience of failure and allowed failure to understand those events in-depth.

Methods: We interviewed 15 postgraduate trainees from nine teaching sites in Europe and Canada. Participants were a purposive sample, representing 1–10 years of clinical training in various specialties. Consistent with constructivist grounded theory, data collection and analysis were iterative, supporting theoretical sampling to explore themes.

Results: Trainees reported that failure was a common, valuable, and emotional experience. They perceived that supervisors allowed failure, but they reported never having it explicitly confirmed or discussed. Therefore, trainees tried to make sense of these events on their own. If they interpreted a failure as allowed by the supervisor, trainees sought to ascertain supervisory intentions. They described situations where they judged supervisor's intentions to be constructive or destructive.

Discussion: Our results confirm that trainees perceive their failures as valuable learning opportunities. In the absence of explicit conversations with supervisors, trainees tried to make sense of failures themselves. When trainees judge that they have been allowed to fail, their interpretation of the event is coloured by their attribution of supervisor intentions. Perceived intentions might impact the educational benefit of the experience. In order to support trainees' sense-making, we suggest that supervisory conversations during and after failure events should use more explicit language to discuss failures and explain supervisory intentions.

1 | INTRODUCTION

Clinical workplace-based training is designed to put trainees at the limits of their competence to refine their abilities.¹⁻³ Supervisors work to balance patient safety and trainee learning,⁴⁻⁷ so that both goals can be achieved. Complicating this balance, however, is the reality of trainee failure. Working at the edge of their abilities, trainees will -----© 2022 Association for the Study of Medical Education and John Wiley & Sons Ltd.

inevitably fail. Trainee failure has implications for patient care: It may lead to negligible effects on patients, or carry risk for serious harm.^{8,9} The literature reports trainee failure due to lack of experience in a broad range of different clinical situations, potentially endangering patient safety.¹⁰⁻¹⁶ Failure also has implications for trainees: It can promote learning,¹⁰⁻¹⁶ but it can also trigger sentinel emotional events.¹⁷⁻¹⁹ A recent review reported that direct study of allowed

failure in healthcare has been limited,²⁰ but related work has established how and what residents learn from the clinical errors they make,^{10,11,15,21} the ongoing impact of residents' errors on their behaviour and well-being, and the importance of failure for developing recovery strategies.^{13,22}

Clinical supervision is essential to balancing the risks and benefits of trainee failures. With a trusting relationship between supervisor and trainee, trainees are more likely to admit their failures and supervisors are more likely to give trainees the autonomy they need to stretch themselves.²³⁻²⁵ How supervisors respond to trainee failures can either mitigate or intensify emotional consequences such as guilt and shame^{12,17} and has implications for progression, as supervisors judge whether to entrust the trainee in the current, and future, clinical situations. Such judgements are a dynamic supervisory process^{26,27} that requires evidence not only that the trainee is competent to perform independently, but also that they have an awareness of their own limits and a likelihood of asking for help when they need it.^{6,26,28-30} In addition to such trainee dependent factors shaping entrustment decisions, other factors such as contextual circumstances and the acquaintance and relationship of the supervisor and the trainee also play a critical role.^{23–26,31}

Into this rich scholarly conversation about trainee failure, clinical supervision, and entrustment decisions, recent studies added the insight that supervisors sometimes strategically allow failure when they judge that it would support training learning.^{32,33} Based on interviews with clinical supervisors, the phenomenon of allowing failure was defined as a situation in which, "while supervising a trainee's clinical performance, the supervisor, influenced by both intuition and a non-linear interplay of different factors, detects an imminent trainee mistake, has the opportunity to intervene but chooses not to do so. because the educational gain for the trainee is perceived to outweigh the (potential) consequences for the patient."32,33 This exploration of allowing supervisors decide to allow failure suggested a complex balancing act in which they weigh threats to patient safety against benefits to trainee learning, seeking to minimise the former and maximise the latter.³³ What remains unknown is trainees' perceptions of allowed failure for learning. Therefore, this study aimed to explore whether trainees understand that supervisors allow them to fail, and how they experience such situations. Integrating trainee perspectives is necessary to refine our understanding of this educational phenomenon, and to support critical discussion of this supervisory strategy in the medical education community.

2 | METHODS

2.1 | Design

Because we view allowing failure as social interaction, we used constructivist grounded theory methodology.³⁴ After Charmaz, our work was informed by sensitising concepts, "those background ideas that inform the overall research problem" in a constructivist approach.³⁵ Sensitising concepts derived from our previous research influenced data collection and analysis. In particular, the supervisory decision model of when, why and how to allow failure and the factors considered by supervisors provided a starting point for building analysis and offered us a preliminary way of seeing, organising, and understanding our recent participants' experiences.^{32,33} At the same time, however, we upheld the central grounded theory principle of attending to inductively identified themes; our analysis did not seek to confirm this preliminary conceptualization but rather to elaborate, refine and, as necessary, challenge it.^{36,37} Swissethics (EKOS) waived the need for a detailed ethics approval (Req-2018-00437), whereas the human research ethics of the Western University, Canada (WesternREM) approved the study. The exploration adhered to the tenets of the Declaration of Helsinki.

2.2 | Sampling strategy, setting, and data collection

Given the potentially sensitive nature of the research questions, we conducted individual interviews.³⁸ The interview protocol was designed with two anticipated challenges in mind: trainees' reluctance to discuss failures generally and their lack of awareness of allowed failure specifically. To ease in and build rapport,³⁹ the interview protocol began with questions about learning from failure in their personal lives before asking about learning from failure in clinical training. The first three interviews demonstrated that participants felt more comfortable talking about professional failure than expected, so we dropped the easing-in questions regarding failure in their personal lives. After asking about their experiences of learning from clinical failure, we presented participants with scenarios of allowing failure in clinical training as a clinical vignette: this strategy was intended to deepen the interview conversations in the case that participants were not familiar or confident enough to talk about allowing failure in their own clinical training.^{40,41} Each participant considered two vignettes emerged from our previous interview study with supervisors⁴²: Two examples from a surgical supervisor were presented to surgical participants (including general surgery, paediatric surgery, orthopaedic surgery, urology) and two examples from two internal medicine specialists were presented to participants from other specialties (including internal medicine, anaesthesia, intensive care). We pilot tested the interview guide with two residents (P1, P2), which we included in the dataset because of the richness of their perceptions. Vignettes are available in Table S1.

We recruited participants from a range of clinical specialties in different countries, guided by a combined purposeful and convenient selection strategy. We began interviewing senior trainees because we imagined they might view the issue of allowed failure from the perspectives of both being supervised and providing supervision to more junior team members. Early interviews were conducted with surgical trainees, as JK's surgical training experiences supported rapportbuilding with these participants. As sampling continued, we expanded to include trainees in various training years and different specialties. In general, we expected that awareness and experience of allowed failure might vary according to the specialty culture and the nature of supervisory relationships in a specialty, such as close observation of technical performance in surgery; therefore we included surgery, gynaecology, urology, paediatrics and paediatric surgery, anaesthesiology and intensive-care, and internal medicine.⁴³ Late in the sampling, we purposively selected participants with formal medical education training (e.g., PhD candidate of Medical Education) to explore how such expertise might influence perceptions. In the end, we had recruited 17 participants, but reached sampling sufficiency⁴⁴ with 15 interviews, including trainees with 2–10 years training experience from Switzerland, Germany, the United Kingdom, and Canada.

JK knew most of the participants before the interview but did not have a current hierarchical relationship with the trainees in order to avoid professional conflict. She invited possible participants via personal request (message or in person) to a voluntary interview. With the invitation to the study, JK sent a brief introduction about learning from failure and the strategy of allowing failure in other educational settings. All 17 invited individuals agreed to voluntarily participate in the study, and provided informed consent. The interviews lasted between 44 and 70 minutes, were audio-recorded and transcribed verbatim with identifying details anonymised. Thirteen interviews were conducted in English with native and non-native speakers; two were conducted in German for the participants' convenience and translated professionally afterwards.

2.3 | Data analysis and research team

As constructivist researchers, the research team acknowledges that our orientations shape the work. The international team consisted of three PhD-trained medical education researchers (PT, ED, LL) and one PhD candidate (JK); two team members were clinicians with experience as both trainees and supervisors in surgery (JK) and obstetrics/ gynaecology (PT). We performed an analysis of the interview data iteratively and collaboratively. JK read all anonymised transcripts and developed the initial codes while sharing selected transcripts and the code book with PT, ED, and LL. In regular meetings, two researchers (JK and LL) discussed the transcripts and the list of initial codes, refining and elaborating as new transcripts were added, using a constant comparative approach. This early analysis iteratively informed the interview guide and participant selection for upcoming interviews through theoretical sampling to refine insights into recurring themes. Our analysis was informed by the concepts from our previous interview study with supervisors, particularly the role of patient, trainee, supervisor, and environment factors on allowed failure. However, we emphasised the inductive identification of patterns in the trainee data.³⁵ JK used Quirkos software 2.3.1 for data management and creative visual representation of our evolving conceptual understandings.

3 | RESULTS

Three main insights were identified by our analysis. First, trainees acknowledged failure as an opportunity for learning but were challenged by strong emotions and personal distress that can accompany these experiences. Second, participants perceived that their supervisors had allowed them to fail but reflected that the allowed failure had not been made explicit. Rather, post-failure discussion with supervisors, typically focused on the mechanism and potential response, with no discussion of the supervisor's decision to allow the failure. Last, the outcome of allowed failures depended on trainees' sense-making, in that their interpretations of supervisor intentions and patient risks had a perceived impact on learning.

3.1 | Failures are common and emotional learning opportunities

Participants reported that failure was a common, valuable, and emotional experience during training. Many believed "you have to learn by failure" (P10), viewing it as unavoidable. Others saw failure as valuable because "when I fail, I know my limit, and I know where I should improve". (P12) Learning from failure was perceived to be enhanced by the sense of "responsibility that every physician feels for the patient and for the mistakes they make" (P1). With responsibility, however, came difficult emotions. Trainees shared that they felt "bad and guilty and angry and ... shame" (P1), "disappointed" (P5) and "anxious" (P5), "horrible" (P15), and "guilty" (P4), when it came to failure. These emotions persisted: some participants "felt bad about it for, I don't know, quite a long time. I don't know, a couple of weeks, probably, a month, yeah, a month" (P2).

When trainees reflected on what happened after a failure event, they emphasised the emotional dimension of the experience. One participant explained:

I felt horrible. I felt like I caused this patient's death directly. And not being able to have that debrief afterwards to try to go through, okay, let's talk about it and having that frank discussion. And there's no closure during that case. So, I don't know exactly what had happened and what my role in that case was. (P15)

This participant acknowledged that debriefing might have helped with the emotions, but was missing. Participants also indicated that debriefings could intensify the emotional experience if they were perceived to be handled inappropriately: "I felt like I let down the patient because I did not do what would have made sense. I felt a little, by the attending, because ... he was right, but still, the manner, how he told me, was not very respectful" (P5). Trainees also shared stories of blame and shame following failure experiences: "Yeah, I felt bad about it for, I don't know, quite a long time. I don't know, a couple of weeks, probably, a month, yeah, a month. ... Everybody made fun of me for weeks, and pointed their fingers, and even had an M&M conference about it, so people learned from my failure" (P2). Such experiences were felt to compound the emotional impact of the failure. Coping strategies to deal with these emotional impacts included talking to "family and friends" (P4, P5), peers, or supervisors.

3.2 | Supervisory communications about failure

Supervisory conversations could be particularly important in such coping. For instance, one participant reflected surprise at how constructive their supervisor's feedback was, given that the trainee failed: "Well, the feedback was, in general, that you've got to make the mistake before you learn not to do that again ... it was quite positive, which surprised me because I felt really bad about it." (P10). However, participants' reflections suggested that such supervisory conversations about failures and the potential heavy emotions are uncommon. Trainees reported that their supervisors rarely provided explicit acknowledgement that an event was a supervised failure, although they provided feedback on the mechanism and potential response to failure, but rarely the emotional experience of the trainee. When supervisors did discuss failure, their feedback was technically focused and future oriented: they talked about how to fix the failure or how to prevent it from occurring again. For instance, trainees recalled that supervisors "just [tell] me what I did wrong, and how to solve it, and how to do it better next time" (P2), or offer specific advice such as "how to do it, to find a better angle for the needle, not to give up as quickly." (P11) Such descriptions suggested that supervisors periodically discuss the "what" of supervised failure, but may not explicitly address the "why" it happened.

Recognising failure but rarely having supervisors confirm that a failure was allowed under supervision, participants tried to make sense of such events on their own. Below, we offer a model of this sense-making process (Figure 1). In describing its features, we draw primarily from participants' reflections on their own failures, but we also incorporate participants' reflections on the failure vignettes they considered during the interview where these elaborate our understanding.

3.3 | Making sense of supervised failures

Trainees described different types of supervised failure. They made a distinction between unanticipated failures that neither supervisor nor trainee saw coming and allowed failures that the supervisor anticipated and allowed to happen. For instance, trainees recalled situations where they were not sure about being allowed to fail: "There might have, it's just that I can't remember or didn't realize it ..." (P5). Other times, participants did not recognise that they might have been allowed to fail: "I don't remember that there was a situation like this. I don't think so" (P7) or "But I can't remember a situation when my supervisor was next to me and just observing my failure" (P3).

Due to the focus of our research study, this paper focuses on allowed failure that was perceived by trainees. Trying to make sense of these allowed failures, trainees emphasised the importance of supervisory intention. Their interpretation of intention influenced their judgement of the appropriateness of allowed failure as an educational strategy. It also seemed to influence what—indeed whether trainees learned from the allowed failure.

3.3.1 | Recognition

In general, participants recognised allowed failure as a recurring supervisory strategy. One participant suggested: "I think it happens all the time. I think, actually, it's vital (P13)," whereas another resident explained that "I had the feeling that I was allowed to make a mistake or not to succeed" (P11). They perceived that allowed failure was more likely in some clinical situations than others and recognised it especially in technical procedures, suggesting it as a successful teaching method:

> I think it's better to use this strategy in practical things like suturing or preparing punctions and stuff like this where you have your supervisor who can still tell you,



no, no, like this, this is too dangerous. but maybe when you do something with your hands, it's easier for a supervisor to let you fail and then explain to you how to do it right, more than in other departments maybe. I think this sometimes happens for suturing. (P3)

Trainees were also allowed to fail in other technical procedures: "I think that was one of it was the example with the epidural anesthesia where I was allowed to fail. ... Yes, in that situation, that specific situation where everything was prepared, and I was expected to fail, it wasn't a big deal" (P11). Others described patient management situations such as "making differential diagnosis with a patient ... [where] the supervisor allowed me to make a failure without any bad effect on the patient" (P8). One surgical resident described it in detail why they think "... there's no other way to learn it than by doing it wrong and then you get better from it" (P2):

> Like classicals in surgery, I think. <u>Reducing fractures</u>, that's a good example. That's a really good way to practice this, there's no harm for the patient. And, of course, we all say at the beginning, no matter how much practice you got or how much theory you have, in real life, it's always different. There is muscle pulling the piece apart and you cannot really train this, so there's no way around it. (P2)

Although they offered many personal examples of allowed failure, trainees did not experience that supervisors "communicate openly about it." (P1). Our data contained no instances in which a participant reported being told by their supervisor that their failure had been allowed, yet they perceived situations where they had been allowed to fail. In the absence of such communication, trainees were left to interpret the event on their own.

3.3.2 | Interpretation

As participants shared their interpretations of experiences of allowed failure, they emphasised supervisory intention. Trainees perceived that intention could be constructive or destructive, and distinguished between a supervisor who has the "right motivation to offer the trainee a learning outcome ... without endangering the patient" (P1) and a supervisor who "just wants me to fail. He's just looking for failure, and he just wants to tell me that I'm a failure" (P3). Their reflections suggested that they attribute the difference not to the failure itself, but to the supervisor's behaviour during or following the failure, whether "they try to teach you by failure ... in a nice way or in a mean way. I think this is for me more the difference [than the ethical question], how they try to teach you by failure" (P7). Another trainee described such teaching in detail and what makes the difference: "He (the supervisor) should be interested in teaching and not in humiliating the trainee, because it can release a feeling of, he just wants me to

fail. He's just looking for failure, and he just wants to tell me that I'm a failure" (P3).

Most participants experienced being allowed to fail as constructively motivated by "good supervisors" (P14) who wanted trainees to learn:

> ... the best trainers I've worked for have created a psychologically safe space, such that it's not only okay to fail, but also, it's okay to nearly fail. So, because you know that if you fail, there won't be blame, it will all be about learning. Because you know that they'll never really let you do anything absolutely catastrophic, there's that safety net, so that even if you do screw up, it's not going to be a screw up that's going to change things drastically. (P13)

Trainees characterised the supervisor who constructively allows failure as "reflective, confident, but still knows [their] own limits" (P1). They wondered if personality contributed to the decision to allow failure, as this resident explained:

> So, I can imagine that some supervisors, just their personality type, do not allow for failure of any sort. And other supervisors are more "skilled," I would say, quote/unquote, in knowing which situations they can let the resident do their thing without much repercussion for the patient if there's a failure. And it could be, I think, micro failures too. (P15)

Participants emphasised that such supervisors show character in providing safety both psychologically and technically to support learning.

While the predominance of examples in our data represented supervisor intentions as constructive, participants also shared stories in which they perceived a destructive supervisory intention. These moments in the interviews were emotionally charged and participants used stronger language (e.g., "bullying") then they used in talking about constructive intention. Participants interpreted destructive intention when supervisors engaged in "humiliating the trainee" (P3), and when the supervisory motivation appeared to be "laziness or indifference towards the patient ... or convenience" (P1) rather than a desire to foster learning. Again, supervisor behaviour signalled intention according to participants; for instance, if trainees perceived themselves to be abandoned during the failure, they interpreted destructive intention, describing such supervisors as "mean: like they led you into the situation and they don't help you out of the situation anymore" (P7). Trainees also considered supervisors' tone and language when discerning intention. A surgical resident flagged the problem with disrespectful dialogue between failed trainee and supervisor: "I think it makes it worse because as soon as it gets disrespectful or personal, it's not just your skills on the line, it's yourself and your ego on the line. I think you get immediately either intimidated or defensive. I think both are very destructive traits in a working environment

because it's not about your person, it's just a mistake by not thinking ahead or not knowing. It's just a very different level, I think" (P5).

This quote illustrates that feedback was seen as crucial in general, and even more after an allowed failure. The same resident explained how a supervisor should act after using the strategy of allowing failure: "... talk afterwards where they explain why they let you fail and discuss what you learned from it. I think a supervisor who uses a method like this without explaining or talking afterwards about it might be harmful" (P5). Trainees' understanding and interpretation of such events seem to depend on the supervisors' input and delivery after it.

Trainees' interpretation of supervisor intention appeared to influence the supervisor-trainee relationship. Attributions of intention seem particularly impactful on trainees' trust in their supervisors. One trainee explained that "if I feel like I can trust my trainer and that he or she trusts me, if I respect them and they treat me with respect, like a peer, like a colleague, like an adult …" (P13), then trust was preserved in spite of the allowed failure. Some trainees also asserted that, not only was allowed failure not necessarily a threat to trust, it could strengthen it. As one explained, "if the attending feels like the situation is under control and has the trust in me that I can fix this, or that he or she can overtake in time, I think that … sounds like a good moment to learn." (P5) Allowed failure can signal "trust in" the trainees' ability to handle a situation, which can strengthen rather than erode the supervisory relationship.

3.3.3 | Judgement

Participants saw allowed failure as common and potentially valuable and appreciated the learning opportunity: "I think in those specific incidents and specific training situations they are vital to our education. So, I think they have a high value, otherwise, it would make everything harder, and we would not be able to improve" (P12). However, they did not unequivocally accept it as best practice. Rather, they suggested that they "would not tend to use this strategy in every case" and that "there are other methods to learn" (P14).

Even when it was viewed as appropriate, allowed failure was characterised as a double-edged sword. As one surgical trainee summarised: "I think making mistakes will bring a learner much further and a lot of learning benefit. But allowing mistakes in itself is still a taboo. Doing it is a very different thing than talking about it, at least in medicine nowadays." (P1) Another admitted that "I think it's good. My supervisor allows failure, but it's got to be in a certain range" (P2). The judgement of whether an allowed failure was in the appropriate "range" included issues of patient safety and ethics. Both in relaying their own experiences and in discussing the clinical vignettes we provided, participants emphasised that allowed failure should "... not [be] endangering the patient's life and not risking serious side effects" (P2). Where patient safety was not threatened, allowed failure was viewed as acceptable because "if it doesn't really make a difference for the patient, it's probably good for the trainee to learn from because you're never going to forget that if you made a mistake" (P10).

Participants' reactions to the clinical vignettes shed light on the roles of personal context and subjectivity in trainees' judgements of the appropriateness of allowed failure for learning. For instance, the same vignette could provoke different reactions in participants. For surgical trainees familiar with bleeding during an appendectomy (P1, P10), that situation represented a "good moment to learn" (P12). Others felt differently: "I never had that situation. Interesting. I wouldn't do it with a trainee, I think. I'm sure it will be a very memorable situation for the trainee. It could also be very frustrating. Difficult. Difficult" (P8). As such reflections suggest, trainees' judgements of appropriateness were tied to whether they perceived an allowed failure as supporting or prohibiting learning.

3.3.4 | Perceived learning

Trainees perceived that allowed failure could have a positive learning effect, but it depended on how they understood the event. Some allowed failures were perceived as not only appropriate but necessary for learning: "... there are certain things and there's no other way to learn it than by doing it wrong and then you get better from it." (P2) The emotional dimension was also seen to promote learning: most trainees believed that allowed failures "will lead me to memorize it better ... it will be fixed on your mind even more" (P1). Supervisory intention was perceived to impact learning, too: one participant described that learning depended on "if they stay nice and if they stay with you, and in the end, they say, 'okay that was not good, you should do it like this and that' and it doesn't harm the patient" (P7). As this quote illustrates, patient safety was also considered when trainees considered the potential to learn from allowed failures. Generally, trainees expressed the sentiment that "if it doesn't really make a difference for the patient, it's probably good for the trainee to learn from" (P10). However, the shared value of protecting against patient impact was in tension with the acknowledgement that failures are memorable learning events precisely because they touch patients. As one participant suggested, "I guess probably everything is a bit learned by failing, but it just depends on how big the failure is" (P10), and another posited that "the worse the consequences are for the patient, I think the better you learn from it, given that a trainee is a reflective person who sees the mistake." (P5) Learning, therefore, was a possible but not certain outcome of allowed failure, shaped by multiple factors.

4 | DISCUSSION

Our participants' narratives of supervised failures suggest that these experiences can have a powerful learning effect^{20,32,33} and provide support for the value of personally and professionally failing.^{10,11,21} Our findings resonate with research showing that learning is

intensified when patients' outcome is affected^{10,11} and that the intensity of learning through failure can have emotional consequences.^{12,17}

Our findings also demonstrate that trainees are aware of the supervisory strategy of allowing failure. Participants recounted instances where they believed they had been allowed to fail; what they could not recount was having been told that their failure was allowed, or why. Absent such explicit discussions, trainees made sense of allowed failures on their own. This study offers a model of this sense-making, the process by which participants "try to develop plausible explanations to give meaning to their experiences."⁴⁵ Sensemaking matters because, when individuals commit to the meaning of an experience, it influences their further actions.⁴⁵ However, sensemaking may be problematic in the absence of explicit communication. Organisational research demonstrates that the collective understanding of an experience is improved when individuals communicate,⁴⁶ whereas a lack of communication can create uncertainty and struggles to understand.^{47,48}

Participants' sense-making involved recognising an allowed failure event, interpreting the supervisor's intention in allowing it, and judging its appropriateness, as illustrated in our conceptual model. We offer this model as a rich description of how trainees reflect on allowed failure events, recognising that it requires further refinement. While the model appears linear, we suspect that this arises in part from the retrospective nature of interview data. Sense-making theories have been critiqued for their linear approach to time,⁴⁹ and it is likely that real time sense-making is more iterative and nonlinear than our model suggests. This would fit with current understandings of the complex, nonlinear nature of supervisory interactions.⁵⁰ Further, sense-making is not a reflection of the event: It is subjective at all stages of the process, from recognition to perceived learning as outcome. At the recognition stage, trainees may "misrecognize" as an allowed failure an event that the supervisor, with their greater range of experience, understands not as a failure but rather as a common source of performance variability. The impact on learning is potentially serious if the trainee understands as a mistake what the supervisor intended as an illustration of acceptable variability. At the interpretation stage of the model, as trainees read supervisor behaviour, language and tone of voice, they may also "misinterpret," forming an attribution of intention that the supervisor might not confirm. Whether or not the attribution is accurate is less important than the meaning that they make because if trainees commit to a meaning of a failed experience through their own sense-making, it will influence their actions.⁴⁵ Future research that explores sense-making "in the moment" using observational field research methods instead of interview data could develop this sense-making model further and also uncover mid- or even long-term effect of such experiences.

From our analysis, we would contend that sense-making influences whether the allowed failure experience is understood to be productive or problematic by the trainee. This understanding shapes whether—and what—learning trainees perceive from the experience. In contrast, narratives from a previous supervisory study suggested that supervisors were mainly concerned about trainee learning and patient care.^{32,33} They did not reflect on trainees' interpretations of such events, nor did they discuss how those interpretations might impact the learning that supervisors anticipated. Therefore, we wonder whether supervisors appreciate the sense-making process trainees go through, its influence on both how the trainee views the event and whether it has the learning effect intended.

The interpretation phase of our trainees' sense-making emphasises the question of why the supervisor allowed them to fail as a way of making meaning; this suggests that trainees may find it difficult to learn from what happened if they do not understand why it was allowed to happen. Of particular concern is trainees' attributions of destructive intention behind supervisory decisions to allow them to fail. These attributions were less common in our data, but they seemed to have particular power: These stories were evocatively told by participants who spoke passionately about their negative impacts on the learning environment, the supervisory relationship and the educational benefit. We cannot know if our participants' attributions were accurate; however, even if the attribution of destructive intent is inaccurate, the negative impact on the learning environment is no less real for the trainee perceiving this mistreatment.⁵¹ If allowed failure is experienced as mistreatment, it becomes demoralising. As Bynum has recognised, failures in patient care can be a trigger for a sentinel emotional event and produce shame in the trainee.¹⁷ Such shameful reactions undermine learning and, similarly, allowed failure becomes counterproductive. Future research could explore whether attributions of destructive intentions or perceived mistreatment are more likely in particular circumstances: for instance, when a trainee is new in their placement or a member of a group experiencing systemic inequities.52-54

How can we harvest the educational benefits of allowed failure while ensuring that we avoid trainee mistreatment? We need to start discussing these experiences explicitly and holistically, both in terms of acknowledging the existence of allowed failures and debriefing them. In terms of explicit acknowledgment, both this study and earlier research with supervisors suggest that trainees are not being told that they have been allowed to fail.^{32,33} This silence is problematic, because we know that experiential learning is strengthened when explicit conversations take place between supervisors and trainees.55,56 Without acknowledgement, trainees are left to recognise allowed failure for themselves, and to interpret the supervisor's intent. This may threaten the mutual trust between trainees and supervisors, which is fostered by open and honest learning conversations.²³ In terms of debriefing, our results suggest that supervisors currently approach debriefing conversations in a technical manner focused on solution and prevention. This narrow focus should be expanded to include the emotions of experienced failure as this seems to be a crucial component of perceived learning. We appreciate that constructive learning conversations are hard to achieve, and open discussions of actual errors have been reported to be particularly problematic.¹⁰

We suggest that supervisors acknowledge when they have allowed a trainee to fail; explain why they used this supervisory strategy; debrief the failure; and explore its impact on learning, emotions, and the supervisory relationship. Given trainees' concerns about patient safety in their discussion of clinical vignettes, we also recommend that supervisors make visible their risk/benefit analysis that led them to judge the allowed failure appropriate. Whether or not this supervisory strategy achieves its potential educational benefit depends on the presence, quality and precision of these explicit and constructive learning conversations.⁵⁷

4.1 | Limitations

Two features of our study design-our data collection method and our sampling strategy-constrain our findings and the transferability of our insights. The individual interview method highlights trainees' perceptions and interpretations. It offers access to trainees' interpretation of allowed failure experiences and their sense of the learning that is possible from them. However, it also lends itself to retrospective and linear expressions of sense-making, which will not fully represent the complex, nonlinear, and socially constructed nature of the real time experience of workplace-based learning.⁴⁹ Future research employing observational methods to study trainees and supervisors interacting in their environment could refine these insights. We chose to sample broadly, which is common in CGT research where the aim is to explain a social phenomenon at a conceptual level. However, our results suggest that context matters—for example, trainees viewed an allowed failure as appropriate in some situations but not in others, particularly when engaging with vignettes. Further, our sampling strategy did not represent a specific postgraduate training programme type; therefore, it was unclear if trainees worked in settings with a workplace-based assessment based on entrustment,⁵⁸ and if they had regular supervisor-trainee meetings to discuss trainee learning progress against stated learning outcomes. Sampling across contexts limits our ability to appreciate the influence of contextual features, such as postgraduate programme formative assessment practices and learning culture of the institutions systematically. Future work could sample more robustly in select workplace learning contexts in order to enrich our understanding of how particular contextual features influence what is recognised as an allowed failure, how it is interpreted, whether it is judged appropriate, and how learning is affected. Finally, although interview research with international participants offers a rich dataset, it is complicated by nuances of language, particularly in a study like ours where nuanced distinctions (such as between the terms failure, mistake, and error) cannot be readily solved through translation.59,60

5 | CONCLUSION

Trainees recognise that their supervisors sometimes allow them to fail. They view these failures as potentially valuable for learning, but whether that potential is achieved depends on how they understand the experience. The silence about allowing failure and the narrow, technical nature of debriefings following allowed failure leaves trainees alone in their sense-making about issues such as why a failure was allowed and whether it was an appropriate balance of patient risk and trainee benefit. Supervisors should elaborate their conversations with trainees when they allow them to fail to give them the chance to realise the intended educational benefit of the experience.

ACKNOWLEDGEMENTS

We thank our participants for trusting us to present their perspectives on allowing failure in clinical training.

CONFLICTS OF INTEREST

We do not have to declare competing interests associated with the study.

ETHICS STATEMENT

Research ethics approval was secured (Research ethics CH-2018-00437 and CA-2018-111 869-13 783).

AUTHOR CONTRIBUTIONS

JMK and LAL developed the study. ED and PWT contributed to the study design. JMK collected the data, whereas both JMK and LAL analysed the data. JMK, LAL, ED, and PWT contributed to the interpretation of the data. JMK wrote the first draft of the paper, whereas both LAL and JMK revised the following drafts, and all authors contributed to the process and the final revision.

ORCID

Jennifer M. Klasen D https://orcid.org/0000-0001-8355-1606

REFERENCES

- Ramani S, Leinster S. AMEE guide no. 34: teaching in the clinical environment. *Med Teach*. 2008;30(4):347-364. doi:10.1080/01421590802061613
- Crockett C, Joshi C, Rosenbaum M, Suneja M. Learning to drive: resident physicians' perceptions of how attending physicians promote and undermine autonomy. *BMC Med Educ.* 2019;19(1):293. doi:10. 1186/s12909-019-1732-6
- Hashimoto DA, Bynum WE, Lillemoe KD, Sachdeva AK. See more, do more, teach more: surgical resident autonomy and the transition to independent practice. Acad Med. 2016;91(6):757-760. doi:10.1097/ ACM.000000000001142
- Farnan JM, Johnson JK, Meltzer DO, et al. Strategies for effective oncall supervision for internal medicine residents: the superb/safety model. J Grad Med Educ. 2010;2(1):46-52. doi:10.4300/JGME-D-09-00015.1
- Farnan JM, Petty LA, Georgitis E, et al. A systematic review: the effect of clinical supervision on patient and residency education outcomes. *Acad Med.* 2012;87(4):428-442. doi:10.1097/ACM. 0b013e31824822cc
- Kennedy TJT. Towards a tighter link between supervision and trainee ability. *Med Educ*. 2009;43(12):1126-1128. doi:10.1111/j.1365-2923. 2009.03543.x
- Kilminster S, Cottrell D, Grant J, Jolly B. AMEE guide no. 27: effective educational and clinical supervision. *Med Teach*. 2007;29(1):2-19. doi: 10.1080/01421590701210907
- Finn KM, Metlay JP, Chang Y, et al. Effect of increased inpatient attending physician supervision on medical errors, patient safety, and resident education: a randomized clinical trial. JAMA Intern Med. 2018;178(7):952-959. doi:10.1001/jamainternmed.2018.1244

- Landrigan CP, Rahman SA, Sullivan JP, et al. Effect on patient safety of a resident physician schedule without 24-hour shifts. N Engl J Med. 2020;382(26):2514-2523. doi:10.1056/NEJMoa1900669
- Fischer MA, Mazor KM, Baril J, Alper E, DeMarco D, Pugnaire M. Learning from mistakes: factors that influence how students and residents learn from medical errors. J Gen Intern Med. 2006;21(5): 419-423. doi:10.1111/j.1525-1497.2006.00420.x
- Wu AW, Folkman S, McPhee SJ, Lo B. Do house officers learn from their mistakes? *Jama*. 1991;265(16):2089-2094. doi:10.1001/jama. 1991.03460160067031
- Shepherd L, LaDonna KA, Cristancho SM, Chahine S. How medical error shapes physicians' perceptions of learning: an exploratory study. *Acad Med.* 2019;1(8):1157-1163. doi:10.1097/ACM.000000000 002752
- Kroll L, Singleton A, Collier J, Rees JI. Learning not to take it seriously: junior doctors' accounts of error. *Med Educ.* 2008;42(10):982-990. doi:10.1111/j.1365-2923.2008.03151.x
- 14. Walling HW, Veremakis C. Ordering errors by first-year residents: evidence of learning from mistakes. *Mo Med.* 2004;101(2):128-131.
- Walsh KE, Miller MR, Vinci RJ, Bauchner H. Pediatric resident education about medical errors. *Ambul Pediatr.* 2004;4(6):514-517. doi:10. 1367/A04-009R1.1
- Engel KG, Rosenthal M, Sutcliffe KM. Residents' responses to medical error: coping, learning, and change. Acad Med. 2006;81(1):86-93. doi: 10.1097/00001888-200601000-00021
- Bynum WE, Artino AR, Uijtdehaage S, Webb AMB, Varpio L. Sentinel emotional events: the nature, triggers, and effects of shame experiences in medical residents. *Acad Med.* 2019;94(1):85-93. doi:10. 1097/ACM.00000000002479
- Wu AW. Medical error: the second victim. The doctor who makes the mistake needs help too. BMJ. 2000;320(7237):726-727. doi:10.1136/ bmj.320.7237.726
- Vohra PD, Johnson JK, Daugherty CK, Wen M, Barach P. Housestaff and medical student attitudes toward medical errors and adverse events. *Jt Comm J Qual Patient Saf.* 2007;33(8):493-501. doi:10. 1016/S1553-7250(07)33053-5
- Klasen JM, Lingard LA. Allowing failure for educational purposes in postgraduate clinical training: a narrative review. *Med Teach*. 2019;7: 1-7.
- Bradley CK, Fischer MA, Walsh KE. Trends in medical error education: are we failing our residents? *Acad Pediatr.* 2013;13(1):59-64. doi:10.1016/j.acap.2012.10.004
- Scott SD, Hirschinger LE, Cox KR, McCoig M, Brandt J, Hall LW. The natural history of recovery for the healthcare provider "second victim" after adverse patient events. *Quality and Safety in Health Care*. 2009;18(5):325-330. doi:10.1136/qshc.2009.032870
- Gin BC, Tsoi S, Sheu L, Hauer KE. How supervisor trust affects early residents' learning and patient care: a qualitative study. *Perspect Med Educ.* 2021;10(6):327-333. doi:10.1007/s40037-021-00674-9
- Sheu L, Kogan JR, Hauer KE. How supervisor experience influences trust, supervision, and trainee learning: a qualitative study. *Acad Med.* 2017;92(9):1320-1327. doi:10.1097/ACM.00000000001560
- Hauer KE, ten Cate O, Boscardin C, Irby DM, lobst W, O'Sullivan PS. Understanding trust as an essential element of trainee supervision and learning in the workplace. *Adv in Health Sci Educ.* 2013;19: 435-456. doi:10.1007/s10459-013-9474-4
- ten Cate O, Hart D, Ankel F, et al. Entrustment decision making in clinical training. Acad Med. 2016;91(2):191-198. doi:10.1097/ACM. 000000000001044
- ten Cate O, Chen HC. The ingredients of a rich entrustment decision. Med Teach. 2020;42(12):1413-1420. doi:10.1080/0142159X.2020. 1817348
- Ten Cate O, Billett S. Competency-based medical education: origins, perspectives and potentialities. *Med Educ.* 2014;48(3):325-332. doi: 10.1111/medu.12355

- Kennedy TJT, Lingard L, Baker GR, Kitchen L, Regehr G. Clinical oversight: conceptualizing the relationship between supervision and safety. J Gen Intern Med. 2007;22(8):1080-1085. doi:10.1007/ s11606-007-0179-3
- Kennedy TJT, Regehr G, Baker GR, Lingard LA. 'It's a cultural expectation ...' The pressure on medical trainees to work independently in clinical practice. *Med Educ*. 2009;43(7):645-653. doi:10.1111/j.1365-2923.2009.03382.x
- ten Cate O. Trust, competence, and the supervisor's role in postgraduate training. BMJ. 2006;333(7571):748-751. doi:10.1136/bmj. 38938.407569.94
- Klasen JM, Driessen E, Teunissen PW, Lingard LA. 'Whatever you cut, I can fix it': clinical supervisors' interview accounts of allowing trainee failure while guarding patient safety. *BMJ Qual Saf.* 2020; 29(9):727-734. doi:10.1136/bmjqs-2019-009808
- Klasen JM, Teunissen PW, Driessen EW, Lingard LA. 'It depends': the complexity of allowing residents to fail from the perspective of clinical supervisors. *Med Teach*. 2021;11:1-10.
- Charmaz K. Constructing Grounded Theory. Thousand Oaks, Calif: Sage Publications; 2006.
- 35. Bowen GA. Grounded theory and sensitizing concepts. *Int J Qual Methods*. 2006;5(3):12-23. doi:10.1177/160940690600500304
- Tavakol M, Torabi S, Akbar ZA. Grounded theory in medical education research. *Med Educ Online*. 2006;11(1):4607. doi:10.3402/meo.v11i. 4607
- Watling CJ, Lingard L. Grounded theory in medical education research: AMEE guide no. 70. Med Teach. 2012;34(10):850-861. doi: 10.3109/0142159X.2012.704439
- DiCicco-Bloom B, Crabtree BF. The qualitative research interview. Med Educ. 2006;40(4):314-321. doi:10.1111/j.1365-2929.2006.02418.x
- Prior MT. Accomplishing "rapport" in qualitative research interviews: empathic moments in interaction. *Applied Linguistics Review*. 2018; 9(4):487-511. doi:10.1515/applirev-2017-0029
- Törrönen J. Using vignettes in qualitative interviews as clues, microcosms or provokers. QRJ. 2018;18(3):276-286. doi:10.1108/QRJ-D-17-00055
- Jenkins N, Bloor M, Fischer J, Berney L, Neale J. Putting it in context: the use of vignettes in qualitative interviewing. *Qualitative Research*. 2010;10(2):175-198. doi:10.1177/1468794109356737
- 42. Sampson H, Johannessen IA. Turning on the tap: the benefits of using 'real-life' vignettes in qualitative research interviews. *Qualitative Research*. 2020;20(1):56-72. doi:10.1177/1468794118816618
- Watling C, Cristancho S, Wright S, Varpio L. Necessary groundwork: planning a strong grounded theory study. J Grad Med Educ. 2017;9(1): 129-130. doi:10.4300/JGME-D-16-00693.1
- LaDonna KA, Artino AR, Balmer DF. Beyond the guise of saturation: rigor and qualitative interview data. J Grad Med Educ. 2021;13(5): 607-611. doi:10.4300/JGME-D-21-00752.1
- Kramer MW. Sensemaking. In: Scott CR, Barker JR, Kuhn T, Keyton J, Turner PK, Lewis LK, eds. The International Encyclopedia of Organizational Communication [Internet]. 1st ed. Wiley; 2016:1-10. [cited 2022 Mar 2]. https://onlinelibrary.wiley.com/doi/10.1002/9781118955567. wbieoc185
- Fenwick T. Understanding relations of individual—collective learning in work: a review of research. *Manag Learn*. 2008;39(3):227-243. doi: 10.1177/1350507608090875
- Ilgen JS, de Bruin ABH, Teunissen PW, Sherbino J, Regehr G. Supported Independence: the role of supervision to help trainees manage uncertainty. *Acad Med.* 2021;96(11S):S81-S86. doi:10.1097/ACM. 000000000004308
- Ilgen JS, Regehr G, Teunissen PW, Sherbino J, Bruin ABH. Skeptical self-regulation: resident experiences of uncertainty about uncertainty. *Med Educ.* 2021;55(6):749-757. doi:10.1111/medu.14459
- 49. Dawson P, Sykes C. Concepts of time and temporality in the storytelling and sensemaking literatures: a review and critique. *International*

9

10

Journal of Management Reviews. 2019;21(1):97-114. doi:10.1111/ ijmr.12178

- 50. Klasen JM, Lingard LA. The butterfly effect in clinical supervision. *Perspect Med Educ*. 2021;10:145-147.
- Leisy HB, Ahmad M. Altering workplace attitudes for resident education (A.W.A.R.E.): discovering solutions for medical resident bullying through literature review. *BMC Med Educ*. 2016;16(1):127. doi:10. 1186/s12909-016-0639-8
- Umoetok F, Van Wyk JM, Madiba TE. Does gender impact on female doctors' experiences in the training and practice of surgery? A single centre study. S Afr J Surg. 2017;55(3):8-12.
- Myers SP, Hill KA, Nicholson KJ, et al. A qualitative study of gender differences in the experiences of general surgery trainees. J Surg Res. 2018;228:127-134. doi:10.1016/j.jss.2018.02.043
- Liang R, Dornan T, Nestel D. Why do women leave surgical training? A qualitative and feminist study. *Lancet*. 2019;393(10171):541-549. doi:10.1016/S0140-6736(18)32612-6
- Yardley S, Teunissen PW, Dornan T. Experiential learning: transforming theory into practice. *Med Teach*. 2012;34(2):161-164. doi:10. 3109/0142159X.2012.643264
- Yardley S, Teunissen PW, Dornan T. Experiential learning: AMEE guide no. 63. Med Teach. 2012;34(2):e102-e115. doi:10.3109/ 0142159X.2012.650741
- Teunissen PW, Atherley A, Cleland JJ, et al. Advancing the science of health professions education through a shared understanding of terminology: a content analysis of terms for "faculty". *Perspect Med Educ.* 2021;11:22-27. [cited 2021 Nov 18]. https://link.springer.com/ 10.1007/s40037-021-00683-8

- Rekman J, Gofton W, Dudek N, Gofton T, Hamstra SJ. Entrustability scales: outlining their usefulness for competency-based clinical assessment. Acad Med. 2016;91(2):186-190. doi:10.1097/ACM. 000000000001045
- Helmich E, Cristancho S, Diachun L, Lingard L. 'How would you call this in English?': being reflective about translations in international, cross-cultural qualitative research. *Perspect Med Educ*. 2017;6(2): 127-132. doi:10.1007/s40037-017-0329-1
- Lingard L. Language matters: towards an understanding of silence and humour in medical education: language matters. *Med Educ.* 2013; 47(1):40-48. doi:10.1111/medu.12098

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Klasen JM, Teunissen PW, Driessen E, Lingard LA. Trainees' perceptions of being allowed to fail in clinical training: A sense-making model. *Med Educ*. 2022;1-10. doi:10.1111/medu.14966