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RESEARCH ARTICLE

Exploring nurses' role in guiding residents' workplace learning: A mixed-method study

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Abstract

Introduction: Understanding residents' workplace learning could be optimized by not only considering attending physicians' role but also the role of nurses. While previous studies described nurses' role during discrete activities (e.g. feedback), a more profound understanding of how nurses contribute to residents' learning remains warranted. Therefore, we used the educational concept of guidance and explored the extent to which residents' and nurses' perceptions align regarding nurses' guiding role and which reasons they provide for their perceptions.

Methods: This mixed-method study was conducted at four Dutch university medical centres in 2021. We simultaneously collected quantitative and qualitative data from 103 residents and 401 nurses through a theory-informed questionnaire with a Likert-scale and open-ended questions. We analyzed quantitative data to explore respondents' perceptions of nurses' guiding role by using ANOVA. The thematically analyzed qualitative open comments explored respondents' reasons for their perceptions.

Results: Nurses indicated to provide significantly more support ($p = .01$) and guidance on learning from patient care ($p < .01$) than perceived by residents. Moreover,

Previous presentations Preliminary results were presented at the Association of Medical Education in Europe (AMEE) (online).

nurses indicated that attending physicians did not always involve them in guiding residents, whereas residents perceived nurses were being involved ($p < .001$). Themes suggest that nurses and residents could be divided into two groups: (i) respondents who felt that guiding was inextricably linked to good interprofessional collaboration and patient care and (ii) respondents who saw the guiding role as limited and emphasised the distinct fields of expertise between nurses and physicians.

Conclusions: Residents and nurses felt that nurses played an important role in guiding residents' workplace learning. However, some residents did not always perceive to be guided. To further capitalise on nurses' guiding role, we suggest that residents can be encouraged to engage in the learning opportunities nurses provide to achieve optimal team-based patient care.

1 | INTRODUCTION

Workplace learning is considered the backbone of postgraduate medical education. Residents gradually develop into competent health care professionals who provide safe and high-quality patient care by participating in day-to-day clinical practice within health care teams and being supervised by attending physicians.[1,2] Given the fact that the demands of clinical practice largely shape residents' learning during postgraduate medical education, researchers and educators alike have sought various ways to optimise workplace learning. The role of attending physicians in optimising residents' workplace learning has received ample attention and has been recognised as highly instrumental.[3–5] This instrumentality resides in attending physicians' role in helping residents to navigate their trajectory into the community of physician practice through role modelling, coaching, scaffolding and general supervision.[6–8] However, only considering the role of attending physicians in this navigation process might offer a limited perspective on how residents learn during workplace learning and which other members of the health care team are involved in this process.[8,9]

The potential of widening our perspective on residents' workplace learning and who is involved in this process is informed by sociocultural theories on learning. These theories posit that learning occurs through interaction and participation.[6,10–12] Considering the situated nature of residents' workplace learning, one of the key health care team members residents interact with on a daily basis besides attending physicians are nurses.[13] Several studies have confirmed the role of nurses in residents' workplace learning through, for example, demonstrating specific skills[14–18] and supporting residents' socialization through enculturation within clinical departments.[9,19] Other studies have highlighted nurses' unique feedback perspective on residents' performance regarding communication with patients and families as well as their collaboration within the health care team.[20–22] Despite this empirical evidence pointing to the highly relevant role of nurses in residents' learning, our understanding of nurses' role remains underexplored.[8] A more profound understanding of nurses' role in residents' learning may help further optimise residents' workplace learning.[8]

Thus far, research has described the role of nurses in residents' workplace learning in discrete activities like giving (informal) feedback, demonstrating skills and enabling socialization.[9,14–22] A potential concept that may help capture nurses' roles in residents' workplace learning more fully is that of 'guidance'.[12] Derived from the work of Billett on workplace learning,[12] guidance is described as a process through which more experienced members of a workplace guide novice employees to become effective members of that workplace. Guidance entails enabling workplace participation, directing novices to learning opportunities and socialising them within the workplace. Research on workplace learning in medical education has typically used umbrella concepts like supervision[3,5,23] and teaching[7,24] to describe the activities of attending physicians. Both concepts invoke the image of deliberate and formal activities geared towards residents' learning. By using the concept of guidance, we aim to focus on the formal and informal role of nurses as experienced members within the clinical workplace in facilitating residents' learning and development to become effective health care team members.

In this study, we set out to explore the extent to which the interactions between nurses and residents are perceived as guidance from the perspective of both residents and nurses. We have chosen to incorporate both perspectives as research has pointed out that might have difficulty valuing and accepting the role of nurses in their learning.[20,25,26] We therefore pose the following questions: (i) To what extent do residents' and nurses' perceptions align regarding the guiding role of nurses during residents' workplace learning? and (ii) which reasons provide nurses and residents for their perceptions regarding the guiding role of nurses during residents' workplace learning?

2 | METHOD

In this mixed-method study, we simultaneously collected quantitative and qualitative data from residents and nurses through a questionnaire. The quantitative component was the primary method in this study and was used to assess whether the perceptions of residents and nurses aligned regarding nurses' guiding role.[27] However, the reasons behind their perceptions could not be discerned and

informed the qualitative component, which was the secondary method.[27] The qualitative component was collected with the questionnaires' open-ended questions and provided insight into the reasons behind nurses' and residents' perceptions regarding the guiding role of nurses. By using a mixed-method methodology specifically, we could understand better what the guiding role of nurses in clinical practice looked like and complement this understanding by exploring both nurses' and residents' explanations of their perceptions.[27] Integration of the quantitative and qualitative results occurred during data analysis; the initial quantitative results influenced the focus of the qualitative analysis.[28]

2.1 | Setting

This study was conducted among residents and nurses at four university medical centres (UMCs) in the Netherlands. During the 4 to 6 years of residency training, residents follow various rotations in UMCs and (several) non-UMC teaching hospitals. Residents are part of the health care team and work alongside various health care professionals, including nurses. The team of attending physicians, directed by a programme director, are ultimately responsible for training residents and guiding them towards independent practice.[29] Similar to other countries, programmatic assessment is implemented in Dutch residency programmes, meaning the routine collection and analysis of information about residents' competencies and progress. This information is collected through several instruments such as Entrustable Professional Activities (EPAs), multi-source feedback and performance surveys.[29–31] Generally, four types of nurses with different roles and responsibilities are distinguished within the Dutch health care system. Vocational nurses (VNs) and registered nurses (RNs) are trained respectively 3 and 4 years; they are concerned with giving and organising direct nursing care. Some have had additional training and specialization (e.g. diabetic nurses). The number of Master degree nurses is growing, and they could be trained as advanced nurse practitioners (ANPs) who are concerned with care on the cutting edge of the nursing and medical domain and quality improvement.[32] Physician assistants (PAs) also hold a master degree but belong to the medical domain and can perform (complex) risky (medical technical) interventions.[33] In the Netherlands, RNs are available 24/7, whereas NPs and PAs are present in the daytime during weekdays. NPs play a bridging role, and their work is complementary to residents' work. On the other hand, PAs work solely in the medical domain and have taken over some of the clinical tasks of residents. All types of nurses work alongside and together with residents and attending physicians; however, compared with general hospitals, nurses in UMCs often hold higher educational degrees.

2.2 | Sample and procedures

From February to August 2021, we approached residents and nurses to participate in a web-based online questionnaire using the platform Castor Electronic Data Capture (EDC) (version: 1.6) and LimeSurvey. We recruited residents and nurses through convenience sampling, meaning that all nurses (VNs, RNs, NPs, and PAs) and residents from different specialties could participate in the questionnaire. We only requested participation when nurses or residents regularly collaborated with each other to assure they were able to provide information on the guiding role of nurses. We checked this by asking key informants and through an item in the questionnaire. We recruited residents via residency training programme directors and hospital-wide education committees (responsible for monitoring and promoting the quality of residency training within a teaching hospital).[34] Nurses were recruited via nursing managers within the UMCs. Both were invited and reminded up to three times through e-mails.

2.3 | Development questionnaire

As there was no suitable questionnaire measuring the construct of guidance, the research team developed a new questionnaire (see Fig. 1). Mirroring the literature on workplace guidance,[1,12,35] clinical supervision[3,36,37] and interprofessional collaboration,[8,9,18,38] we first conceptualised and defined guidance as 'all that nurses do

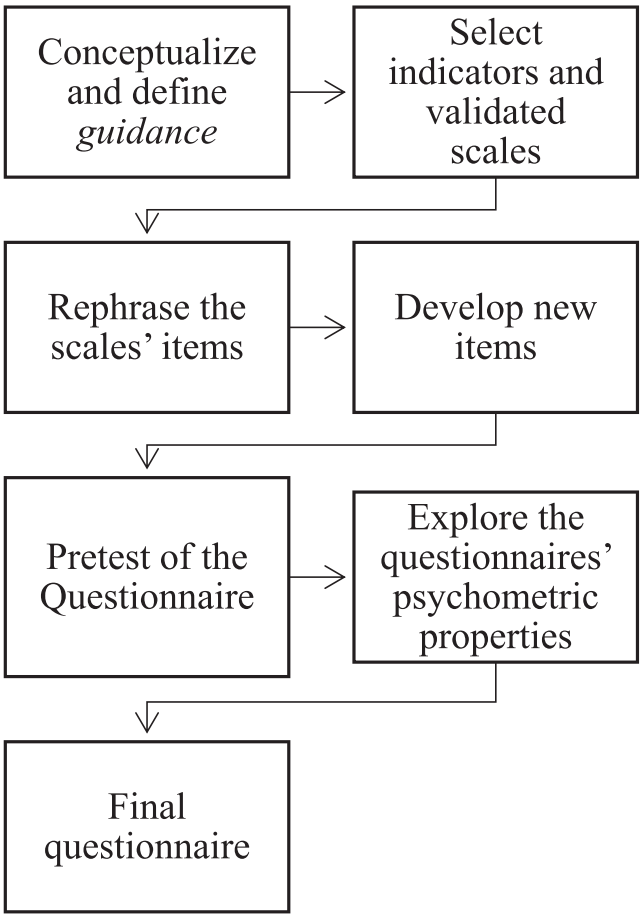

FIGURE 1 The stepwise guidance questionnaire development

(or intentionally not do) to support residents' professional development towards independent medical practice'. We determined relevant indicators of guidance and selected scales to represent these indicators from the following validated questionnaires: System of Evaluation of Teaching Qualities (SETQ),[37] the Maastricht Clinical Teaching Questionnaire (MCTQ),[36] and Dutch Residents Educational Climate Test (D-RECT).[39] We then rephrased the scales' items to incorporate the nurse; for example, the item 'attending physicians provide positive feedback to residents'[37] was rephrased as 'nurses provide positive feedback to residents'. Finally, we added newly developed items to fill in missing information about the guiding role of nurses; for instance, we added items about whether guidance by nurses is (formally) recognised and acknowledged by residents and attending physicians. The questionnaire contained the same questions for both nurses and residents; only the wording was altered (for the complete questionnaire, see Appendix S1). We piloted the preliminary questionnaire on five nurses and four residents in an individual online interview using the think-aloud technique and verbal probing.[40,41] That is, researcher (IJ) asked participants to verbalise every thought while answering the questionnaire's items. The interviewer also used probe questions to elicit specific information on whether items were unclear, inappropriate or misunderstood (e.g. is there a section or question on this page that is unclear to you?).[41] Participants' feedback led to minor modifications in the wording of the demographic variables, and we added three items (Items 8, 15 and 25). Based on theory[1,3,8,9,12,18,35–38] and face validity, which was determined using the expertise present in the research team, we identified seven subscales: Demonstrating, Feedback, Support, Socialization, Learning from Patient Care, Engagement and Involvement in Evaluation. Psychometric properties of each of the subscales were analyzed using principal component analysis (PCA) with oblimin rotation. All items had a factor of loading >0.5 (ref: field) (see Appendix S2: Tables A and B). For the internal consistency, we calculated Cronbach's α statistics. We removed one item from the domain Support to improve the overall reliability of the domain. The structure of the domain Support was still satisfactory after rerunning the PCA (see Appendix S2: Table C). The final questionnaire consisted of 25 items measuring the guiding role of nurses across seven scales: *Demonstrating* (e.g. nurses demonstrate how compassionate patient care is performed), *Feedback* (e.g. nurses give me positive feedback), *Support* (e.g. nurses emphasise that I can ask them for help), *Socialization* (e.g. nurses support me in familiarising with the departments' organizational aspects), *Learning from Patient Care* (e.g. nurses assess my competence when I perform certain clinical routines), *Engagement* (e.g. during my training, nurses play an important role in guiding me) and *Involvement in Evaluation* (e.g. nurses are asked by attending physicians to provide feedback on my performance). Responses were recorded on a 5-point Likert scale (1 = *never*; 2 = *seldom*; 3 = *sometimes*; 4 = *regularly*; and 5 = *always*). Only the scale *Engagement* was measured on a 5-point Likert scale, where 1 = *strongly disagree* and 5 = *strongly agree*. We also analyzed the following data: residents' postgraduate year (years 1 to 6) and nurses' work experience in years.

2.4 | Quantitative analysis

First, we used a 50% missing data cut-off, meaning that participants were excluded from further analyses if they missed more than 13 items. The remaining missing data were imputed using the expectation–maximization (EM) algorithm. We did not impute the 'not applicable' answer option as we considered this answer as valid rather than a missing value.[42] For all seven scales separately, total mean scores were calculated using the mean of the scales' corresponding items. To examine whether nurses' and residents' perceptions aligned on the guiding domains, we conducted a one-way ANOVA. Second, to examine the difference in guiding domains between residents' postgraduate years (PGYs) and nurses' work experience, we conducted a one-way ANOVA. We categorised PGY into three groups using the 33rd percentile and the 66th percentile: junior = resident not in formal residency training/PGY 1; intermediate = PGY 2/3; and senior = PGY 4/5/6. We categorised nurses' work experience into three groups using the same approach: early-career = 0–7 years, mid-career = 8–22 years and late-career = ≥23 years. For all analyses, the significance level was adjusted for the number of comparisons completed (Bonferroni method). We used Statistical Package for the Social Sciences (SPSS) version 26 (IBM Corp. 2019, New York, United States) for the statistical analysis.

2.5 | Qualitative component

2.5.1 | Sample

The open-ended questions within the domains *Engagement* and *Involvement in Evaluations* had elicited the longest, descriptive and in-depth answers from participants and were selected for thematic analysis. These domains contained three open-ended questions that were presented to both nurses and residents. The open-ended questions asked participants to further elaborate on their thoughts about the (non) importance of the guiding role and how nurses were in another way involved in guiding residents (see Appendix S1).

2.5.2 | Qualitative analysis

Participants' comments were analyzed using thematic analysis.[43] First, the principal researcher (IJ) open coded roughly one third of residents' and nurses' comments to get a general impression of the data and constructed initial codes. Using these codes, two researchers (IJ and GG) coded the same batch of residents' and nurses' comments. Together with another researcher (RS), they discussed the codes and constructed themes resulting in an initial template. IJ and GG independently applied the template to a different batch of comments and refined the themes iteratively during online discussions until they reached thematic sufficiency in addressing the second research question.[44] Then, IJ wrote a draft results section on how the themes relate to each other, facilitating a discussion within the research team. As a

result, the template was not further modified; IJ coded the remaining comments and refined the draft results. In two meetings with nurses, attending physicians and residents, IJ presented the results, which were recognised and further explained by the participants aiding the interpretation of the results. MAXQDA (version Max Qualitative Data Analysis [MAXQDA] Plus 2020, Verbi, Berlin, Germany) supported data analysis.

2.6 | Reflexivity

The research team represented different fields of expertise brought together to represent the phenomenon of guiding adequately. IJ and GG are both pursuing a Ph.D. in medical education. IJ is a sociologist (IJ), and GG is a resident anaesthesiologist. MS is a health scientist and a mixed-methods research fellow in medical education, and RS is an assistant professor and an educationalist with significant expertise in qualitative methodology and mixed-methods research. Both RS and IJ have used socio-cultural lenses before to study residents' workplace learning. KL, SG and HV are all full professors and hold research chairs on physicians' professional performance (KL), internal medicine and quality of care (SG) and nursing science (HV). SG is also a programme director at a department of internal medicine at a UMC. The research teams' multifaceted perspectives resulted in in-depth conversations about how to interpret data from both the perspective of the residents and the nurses.

2.7 | Ethics

The institutional ethical review board of the Amsterdam UMC of the University of Amsterdam provided a waiver declaring that the Medical Research Involving Human Subjects Act (WMO) did not apply for the project (reference number W20_538 # 20.597). Informed consent was asked in the questionnaire. Participation in the study was anonymous and voluntary at all times.

3 | RESULTS

A total of 103 residents and 401 nurses completed the questionnaire. Most responding residents were woman (73; 71%) and all postgraduate years were equally represented. Of the responding nurses, 346 (86%) were woman. One hundred ninety-five nurses (49%) had 15 years or more work experience (see Table 1). Ninety eight residents and 260 nurses responded to the selected open-ended questions.

TABLE 1 Demographics of resident and nurse participants

	Residents *N* (%)	Nurses *N* (%)
Gender		
Man	30 (29%)	55 (14%)
Woman	73 (71%)	346 (86%)
Age (years)		
≤30	46 (45%)	138 (34%)
31–40	56 (54%)	81 (20%)
41–50	1 (1%)	67 (17%)
≥51	-	115 (29%)
Specialty		
Surgical	22 (22%)	149 (44%)
Internal medicine	56 (56%)	181 (53%)
Remaining	22 (22%)	7 (2%)
PGY		
Residents not in training/1	32 (32%)	
2/3	31 (31%)	
4/5/6	38 (38%)	
Years of experience		
≤7		138 (34%)
8–22		129 (32%)
≥23		134 (34%)
Total	103 (100%)	401 (100%)

Abbreviation: PGY, postgraduate year.

3.1 | RQ #1. Alignment of the guiding domains

In total, 70 residents (68%) and 303 nurses (76%) perceived nurses' guiding role as important ($M_{residents} = 3.8$ [0.9]; $M_{nurses} = 4.0$ [0.9]). While the differences in scores between nurses and residents were not significant for the domains *Demonstrating*, *Feedback* and *Socialization*, nurses scored higher compared with residents (see Table 2). The differences in scores between nurses and residents were significant for the domains *Support* ($F(1.495) = 6.09$; $p = .01$) and *Learning from Patient Care* ($F(1.494) = 7.94$; $p < .01$). Residents scored significantly higher compared with nurses on the domains *Engagement* ($F(1.499) = 5.89$; $p = .02$) and *Involvement in Evaluations* ($F(1.502) = 27.60$; $p < .001$). Finally, residents' years of postgraduate training did not result in a significant difference in any domain (data not presented). Nurses' years of working experience were significant in the four domains of *Demonstrating* ($F(2.387) = 3.68$; $p = .03$), *Feedback* ($F(2.391) = 5.34$; $p < .01$), *Engagement* ($F(2.395) = 19.56$; $p < .001$) and *Involvement in Evaluations* ($F(2.398) = 25.37$; $p < .001$). Nurses with more years of work experience applied these three guiding domains more often than nurses with less years of work experience (see Table 3).

3.2 | RQ #2. Provided reasons for respondents' perceptions regarding nurses' guiding role

Despite statistical differences in some domains between nurses' and residents' perceptions regarding the guiding role of nurses, the reasons both provided for their perceptions could be clustered in similar

TABLE 2 Mean scores for residents and nurses demonstrating differences between guiding perceptions

Domain[a]	Residents		Nurses		*F* value	p value*
	M (SD)	No.	M (SD)	No.		
Demonstrating[b]	3.25 (0.69)	100	3.42 (0.97)	390	2.93	.09
Feedback[b]	3.14 (0.64)	99	3.19 (0.72)	394	0.35	.56
Support[b]	3.13 (0.82)	101	3.36 (0.86)	396	6.09	**.01**
Socialization[b]	3.10 (0.76)	101	2.96 (0.89)	387	2.05	.15
Learning from Patient Care[b]	2.73 (0.85)	99	3.00 (0.84)	397	7.94	**<.01**
Engagement[c]	2.93 (0.76)	103	2.72 (0.78)	395	5.89	**.02**
Involvement in Evaluation[b]	2.56 (0.78)	103	2.13 (0.72)	401	27.60	**<.001**

Abbreviations: M, mean; No., number; SD, standard deviation.
[a]See Supplemental Digital Appendix S1 for corresponding items.
[b]Responses were on a 5-point Likert scale (1 = *never*; 2 = *seldom*; 3 = *sometimes*; 4 = *regularly*; and 5 = *always*).
[c]Responses were on a 5-point Likert scale (1 = *strongly disagree*; 2 = *disagree*; 3 = *neutral*; 4 = *agree*; and 5 = *strongly agree*).
*p values in bold represent statistically significant values (<.05).

TABLE 3 Mean scores for nurses' work experience demonstrating differences between guiding perceptions

Domain[a]	Early-career		Mid-career		Late-career		*F* value	p value*	Significantly different groups*,[d]
	M (SD)	No.	M (SD)	No.	M (SD)	No.			
Demonstrating[b]	3.24 (1.05)	134	3.50 (0.90)	125	3.53 (0.94)	131	3.68	**.03**	Early vs. late (p = .04)
Feedback[b]	3.02 (0.79)	133	3.28 (0.64)	129	3.27 (0.70)	132	5.34	**<.01**	Early vs. mid (p = .01) Early vs. late (p = .02)
Support[b]	3.28 (0.91)	134	3.39 (0.78)	129	3.41 (0.89)	133	0.84	.43	
Socialization[b]	2.89 (0.88)	132	3.02 (0.91)	128	2.97 (0.88)	127	0.72	.49	
Learning from Patient Care[b]	2.89 (0.86)	135	3.10 (0.81)	129	3.00 (0.85)	133	2.13	.12	
Engagement[c]	2.41 (0.74)	136	2.79 (0.71)	128	2.97 (0.77)	134	19.56	**<.001**	Early vs. mid (p < .001) Early vs. late (p < .001)
Involvement in Evaluation[b]	1.81 (0.58)	138	2.20 (0.64)	128	2.39 (0.81)	134	25.37	**<.001**	Early vs. mid (p < .001) Early vs. late (p < .001)

Abbreviations: M, mean; No., number; SD, standard deviation.
[a]See Supplemental Digital Appendix S1 for corresponding items.
[b]Responses were on a 5-point Likert scale (1 = *never*; 2 = *seldom*; 3 = *sometimes*; 4 = *regularly*; and 5 = *always*).
[c]Responses were on a 5-point Likert scale (1 = *strongly disagree*; 2 = *disagree*; 3 = *neutral*; 4 = *agree*; and 5 = *strongly agree*).
[d]Tukey post-hoc test.
*p values in bold represent statistically significant values (<.05).

themes. We could group the provided reasons of both nurses' and residents' perceptions regarding nurses' guiding role under two response types: respondents who acknowledged the guiding role of nurses (majority of respondents) and respondents who perceived the guide role as limited (minority of respondents). Table 4 provides an overview of the (sub)themes and quotes.

3.2.1 | Response type 1: acknowledging the guiding role of nurses

Nurses

Nurses guided residents because they felt that guiding was inextricably linked with good collaboration and, in turn, contributed to safe and high-quality patient care. Providing residents with insights into the nursing profession was another frequently mentioned reason by nurses to guide residents. Providing insight could create an understanding for residents about what they could expect and ask from nurses, aiding high-quality patient care. Nurses also highlighted how they could teach residents from their own humanistic expertise and experience, which they recognised as complementary to the expertise of attending physicians. For example, nurses taught 'how the human aspect works when dealing with the sick and their loved ones' (Nurse 532). Finally, nurses considered introducing residents to the departments' processes as necessary, especially junior residents, as they were not or hardly onboarded by attending physicians and 'thrown in at the deep end' (Nurse 498). To safeguard patient care, nurses felt compelled to instruct residents themselves.

TABLE 4 Overview of two response types from the thematic analysis

Response type		Theme	Description	Quote
Acknowledging the guiding role of nurses	Nurses	Guiding contributes to good collaboration and patient care	Guiding residents was inextricably bound up with good collaboration; contributing to safe and high-quality patient care.	Investing in guiding residents contributes to good collaboration between residents and nurses and improves the quality of care. (Nurse 665)
		Providing insight into the nursing profession	Through guidance, nurses could provide insight into their nursing roles, expertise and work routines, aiding high-quality patient care.	Because it [providing insight] leads to a better understanding of each other's work and the departmental processes, ultimately resulting in better and safer patient care. (Nurse 479)
		Teaching residents	Nurses teach residents from their own expertise and experiences, which was complementary to the expertise of attending physicians.	Nurses can also play a role in supporting/guiding [residents] with regard to conversations with patients and relatives. (Nurse 954) Communication with patients is something that attending physicians do not always observe. (Nurse 338)
		Introducing residents to the departments' processes	This includes explaining work agreements, rules and protocols, how the team usually works together or how residents should perform the ward. Some nurses mentioned that attending physicians did not introduce residents well, and these nurses felt compelled to introduce residents themselves to safeguard patient care.	Every few months, a new resident starts, who is not yet familiar with the department's processes. I think it is nice and important to support them in this. (Nurse 634) The onboarding of residents is often poor. Investing in guiding residents contributes to good collaboration between residents and nurses and improves the quality of patient care. (Nurse 665)
	Residents	Patient care is a team effort	Patient care is a team effort requiring good collaboration between all health care team members.	Good collaboration between residents and nurses is essential for good patient care. Therefore I also like feedback from nurses about the way of communicating etc. (Resident 1193)
		Nurses teach valuable knowledge and experience	Nurses helped residents develop clinical reasoning skills, communication with patients, understanding the departments' rules and common practices and specific knowledge (e.g. psychosocial aspects of patient care). This knowledge was a valuable addition to the knowledge of attending physicians.	A nurse is well-positioned to help develop residents' clinical view and help them to learn to collaborate within a multidisciplinary team. (Resident 71) The experience and knowledge of the nurse are different and a valuable addition to attending physicians. (Resident 61)
Limited guiding role of nurses	Nurses	Not being involved	Attending physicians rarely actively involved nurses in residents' guidance by, for instance, asking nurses about their impression of residents.	Nurses are not involved enough, if at all, in guiding residents. This is a missed opportunity because, especially in the early stages, we [nurses] can contribute to the learning process [of residents]. (Nurse 498)

(Continues)

TABLE 4 (Continued)

Response type		Theme	Description	Quote
		High workload	A high workload prevented nurses from guiding residents due to a shortage of staff and the responsibility to guide nursing students.	We already have our hands full with 10 to 15 nursing students. I often cannot take it in the day [to guide residents]. (Nurse 924)
		Not my responsibility	Guiding residents was not seen as nurses' responsibility. Instead, it was the responsibility of the medical profession itself.	Guidance is the main responsibility of attending physicians and not one of the nurses. (Nurse 904)
		Unclear what guiding entails	Nurses' written answers revealed aspects that could be considered as guiding by the definition of the concept used in this study, although nurses said not to guide residents.	I am not a residents' attending physician, however, I can advise from my own experience. (Nurse 167).
	Residents	Professional roles and knowledge are too distinct	Professional roles, knowledge and expertise of nurses and physicians are too distinct as both have studied for another profession.	Giving nurses a big role within residency training in terms of knowledge is not a good idea because nurses have a lot of knowledge that is not necessarily relevant during the training toward a medical specialist. (Resident 81)
		Workplace affords little guidance	The workplace did not always afford guiding situations as, for instance, nurses were only present during the night shifts.	There is sometimes only once-a-week contact with nurses when you have night shifts. (Resident 107)
		Unclear what guidance entails	Residents' written answers revealed aspects that could be considered as guiding by the definition of the concept used in this study, although residents said nurses did not guide them.	Guidance is not necessary, but feedback on collaboration is useful. (Resident 48)

Residents

Residents too underlined that guidance from and collaboration with nurses could not be seen as separate. For residents, guidance also contributed to their professional development towards an attending physician as 'health care is teamwork, so that must be reflected in the workplace and during residency training' (Resident 54). Furthermore, residents described how through nurses' knowledge and experience, residents could develop clinical reasoning skills, their 'gut feeling' (Resident 147) and the departments' 'common practice' (Resident 42). Residents described this expertise, which 'cannot be learned from the books' (Resident 140), as a valuable addition to the medical-related knowledge of attending physicians. A few residents struggled with how to relate to nurses as 'nurse practitioners know certain things much better than I do and I can learn a lot from them, but in other things, they ask me for supervision […] which makes it sometimes difficult to know what your position and responsibility is [in relation to nurses]' (Resident 18).

3.2.2 | Response type 2: the limited guiding role of nurses

Nurses

Nurses often felt that they were not being involved by attending physicians in guiding residents. For instance, attending physicians did not ask them about their impression of a resident. Nurses saw this as a missed opportunity because information on residents' professional development could be lost. Nurses described that not being involved and a high workload prevented them from having an active role in guiding residents. Moreover, some nurses felt that guiding was not their responsibility. Instead, they felt that guidance belonged to medical professionals themselves. Finally, for some nurses, it was unclear what guiding meant as they said 'not to guide residents' (Nurse 167), while their written answers revealed aspects that could be considered as guiding by the definition used in this study.

Residents

Most residents who described the guiding role of nurses as limited stressed how the professional roles, knowledge and expertise of nurses and physicians are too distinct, given their different professional disciplines and backgrounds. A few residents experienced the nursing expertise as less relevant for their learning trajectory, and some residents stated they needed to guide nurses instead. However, other residents differentiated explicitly between specific types of nurses and described how the expertise of physician assistants was highly relevant, and they could serve as 'attending physicians' (Resident 95). A few residents stated that the workplace afforded little situations for guidance, which was recognised as a shortcoming as they felt guidance was valuable. Finally, for a few residents, it was unclear what guidance entailed.

4 | DISCUSSION

Residents' workplace learning may be optimised by incorporating the role of nurses in this process. Using mixed methods, we examined to what extent residents' and nurses' perceptions align on the guiding role of nurses and which reasons they provided for their perceptions regarding nurses' guiding role. The perceptions on the extent to which guidance took place differed; nurses indicated to provide significantly more practical and emotional support (domain *Support*) and guidance on safe and high-quality patient care (domain *Learning from Patient Care*) than perceived by residents. We also found that nurses indicated that attending physicians did not always involve them in guiding residents, whereas residents perceived nurses were being involved (domain *Involvement in Evaluation*). Thematic analyses of the open-ended question suggest that answers of both nurses and residents could be categorised into two themes: (i) respondents who saw the need for guidance as they felt that guidance was inextricably linked to good interprofessional collaboration and patient care and (ii) respondents who saw the need for guidance as limited and emphasised the distinct fields of expertise and professional roles between nurses and physicians.

Our results both confirm and build on previous studies focusing on the role of nurses in residents' learning.[9,14–22] Our results confirm previous research pointing to the unique perspective of nurses on medicine and residents' competence.[17,22] The novel perspective our study brings is nurses' role in providing residents with crucial insights into the nursing profession, including the nature of their nursing roles, expertise and work routines. By providing these insights, nurses can make their (for residents often invisible) role within the workplace more visible[13] and help residents understand better what they could expect and ask from nurses. Providing these insights seemed to serve two purposes: enabling better teamwork with residents as residents were more familiar with the nurses' workflow, aiding patient safety,[17,45] and enabling residents' understanding of their own physician role and the nurses' role within the health care team.[38] Through this understanding, residents develop the knowledge and skills how to be a reliable member within the health care team, which is essential in their journey to become a future attending physician.[8,38,46]

Notably, residents' perceptions about whether they were being guided by nurses differed. Based on our results, residents' perception on whether they were guided by nurses seemed to align with their perspective on what it entails to be a physician and who could help them to navigate their trajectory towards the physician community of practice.[8] Residents who did not see a guiding role for nurses referred to nursing as a distinct field in comparison to the medical field and therefore saw the transferability of the nursing perspective as limited. Residents who acknowledged the guiding role of nurses emphasised the collaborative nature of health care and the value of varying perspectives on care. These results echo role differences in professional boundaries and inform which learning opportunities residents notice or classify as credible and relevant.[20,26,35,47] The medical gaze remained dominant for several of the resident respondents.[20,26,47] Encouraging residents to seek guidance across professional boundaries might take away some biases towards nurses and could make resident–nurse encounters more effective for learning.[48] This could practically be done by explicitly promoting interprofessional collaboration as a learning goal and by highlighting specific learning opportunities for residents that arise in resident–nurse encounters.[49,50]

Nurses in our study highlighted the gatekeeper role of attending physicians in (not) gaining access to guide residents, which points to the hierarchical nature of learning in the workplace and the power that resides between the boundaries of the different communities of practice.[8,47,50] Nevertheless, some nurses took on the guiding role towards residents, even if they felt that attending physicians did not involve them in doing so. An implication for attending physicians would be to explicitly involve nurses, as residents may then be more inclined to fully appreciate nurses and their contributions to residents' workplace learning.[22,51,52] Attending physicians are powerful role models who can encourage residents to seek guidance from nurses as well as value and engage in the afforded learning opportunities by nurses.[22,53] Moreover, attending physicians could stimulate team inclusiveness,[49,54] which is known to benefit interprofessional collaboration, through explicitly inviting nurses to play a role in residents' workplace learning.[17] By doing so, attending physicians legitimise the guiding role of nurses, thereby helping residents understand the valuable contributions nurses can make to their workplace learning and professional development.[17,22,55] Finally, given the influence of power and hierarchy, our results suggest that establishing workplace structures, such as formal curricula, could enable meaningful interprofessional education and collaboration.[8,55]

5 | LIMITATIONS

When interpreting the results, it is important that we only included nurses and residents working in UMCs in the Netherlands. This means that the nurses in our sample have all completed advanced training, more so than the average nursing workforce in general hospitals. Therefore, residents in this study may have rated the guidance of

nurses more positively, especially considering that residents might perceive nurses with higher educational levels as part of their own profession, and literature on feedback shows that residents find the feedback from within their own profession more reliable.[20,21,26] Future research could quantitatively and qualitatively explore how residents and various nurse types (PAs, NPs and RNs) might interact differently concerning their different educational levels and corresponding roles. Another limitation is that, due to the recruitment strategy, we were unable to calculate the response rate. Through discussions with experts such as residents, nurses and attending physicians, as well as conversations within the research team, we assured to the best of our ability that the findings are representative of the Dutch practice. Lastly, participants provided different interpretations of the concept of guiding, despite our best efforts to define the concept when introducing the study to participants. This may point to potential underlying social and cultural forces influencing how the concept of guiding is conceptualised. Qualitative research is needed to explore these underlying forces and the conceptualization of guidance in different contexts to capture guidance activities within interprofessional health care teams. In terms of future research, we also suggest to further explore the role of other allied health care professionals, such as physiotherapists, dietitians, OR nurses and anaesthesia workers in residents' workplace learning.

6 | CONCLUSION

Residents and nurses felt that nurses played a critical role in guiding residents' workplace learning and professional development. However, some residents did not always perceive to be guided, seemingly informed by their perception of who is instrumental in their learning. To further capitalise on nurses' guiding role, our study suggests that residents can be encouraged to engage with the learning opportunities provided by nurses to achieve optimal team-based patient care. Moreover, attending physicians are advised to explicitly involve nurses to guide residents and work towards legitimising the valuable contributions of nurses within residents' workplace learning.

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CONFLICT OF INTEREST

Not applicable.

ETHICAL APPROVAL

The institutional ethical review board of the Amsterdam UMC of the University of Amsterdam provided a waiver declaring that the Medical Research Involving Human Subjects Act (WMO) did not apply for the project (reference number W20_538 # 20.597). Informed consent was asked in the questionnaire. Participation in the study was anonymous and voluntary at all times.

AUTHOR CONTRIBUTIONS

Iris Jansen collected, analyzed and interpreted the data, wrote the first draft of the manuscript and revised the manuscript after feedback from all authors. Milou E.W.M. Silkens, Kiki M.J.M.H. Lombarts and Renée E. Stalmeijer contributed to the data analysis and data interpretation and critically reviewed and revised the manuscript several times. Iris Jansen, Milou E.W.M. Silkens, Kiki M.J.M.H. Lombarts and Renée E. Stalmeijer are responsible for the design of the research. Gerbrich Galema contributed to the data analysis and data interpretation and critically reviewed and revised the manuscript several times. Hester Vermeulen and Suzanne E. Geerlings contributed to the data interpretation and reviewed and revised the manuscript. All authors approved the final version of the manuscript and agree to be accountable for all aspects of the work.

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SUPPORTING INFORMATION

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

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