

Who Wants Feedback? An Investigation of the Variables Influencing Residents' Feedback-Seeking Behavior in Relation to Night Shifts

Pim W. Teunissen, MD, Diederik A. Stapel, MSc, PhD, Cees van der Vleuten, MSc, PhD, Albert Scherpbier, MD, PhD, Klarke Boor, MD, and Fedde Scheele, MD, PhD

Abstract

Purpose

The literature on feedback in clinical medical education has predominantly treated trainees as passive recipients. Past research has focused on how clinical supervisors can use feedback to improve a trainee's performance. On the basis of research in social and organizational psychology, the authors reconceptualized residents as active seekers of feedback. They investigated what individual and situational variables influence residents' feedback-seeking behavior on night shifts.

Method

Early in 2008, the authors sent obstetrics–gynecology residents in the Netherlands—both those in their first two years of graduate training and those gaining experience between

undergraduate and graduate training—a questionnaire that assessed four predictor variables (learning and performance goal orientation, and instrumental and supportive leadership), two mediator variables (perceived feedback benefits and costs), and two outcome variables (frequency of feedback inquiry and monitoring). They used structural equation modeling software to test a hypothesized model of relationships between variables.

Results

The response rate was 76.5%. Results showed that residents who perceive more feedback benefits report a higher frequency of feedback inquiry and monitoring. More perceived feedback costs result mainly in more feedback

monitoring. Residents with a higher learning goal orientation perceive more feedback benefits and fewer costs. Residents with a higher performance goal orientation perceive more feedback costs. Supportive physicians lead residents to perceive more feedback benefits and fewer costs.

Conclusions

This study showed that some residents actively seek feedback. Residents' feedback-seeking behavior partially depends on attending physicians' supervisory style. Residents' goal orientations influence their perceptions of the benefits and costs of feedback-seeking.

Acad Med. 2009; 84:910–917.

Feedback plays a pivotal role in graduate medical education (GME).^{1,2} Residents learn by working, and their

Dr. Teunissen is a medical doctor and a PhD student in medical education, Free University Medical Centre, Amsterdam, the Netherlands.

Dr. Stapel is director, Tilburg Institute for Behavioral Economics Research (TIBER), and professor of social psychology, Tilburg University, Tilburg, the Netherlands.

Dr. Van der Vleuten is chair, Department of Educational Development and Research, director, School of Health Professions Education (SHE), and professor of medical education, University of Maastricht, Maastricht, the Netherlands.

Dr. Scherpbier is head, Maastricht Institute for Medical Education, and professor of medical education, University of Maastricht, Maastricht, the Netherlands.

Dr. Boor is a medical doctor and a PhD student in medical education, St. Lucas Andreas Hospital, Amsterdam, the Netherlands.

Dr. Scheele is a gynecologist, St. Lucas Andreas Hospital, Amsterdam, Netherlands, and professor of medical education, Free University Medical Centre, Amsterdam, the Netherlands.

Correspondence should be addressed to Dr. Teunissen, Vechtstraat 98hs, 1079JN Amsterdam, the Netherlands; e-mail: (pwteunissen@gmail.com).

attending physicians' have the responsibility as supervisors to monitor them and provide them with feedback regarding their performance.^{3–5} Monitoring residents and providing feedback serves several purposes, from ensuring patient safety and efficient, effective, high-quality care, to guiding residents' development towards becoming proficient medical specialists.^{1,3} In the Netherlands, this supervisory practice also holds for residents-not-in-training (a post situated between undergraduate and graduate medical training during which junior doctors gain practical experience and improve their chances of entering their preferred residency programs). From the current literature on feedback in clinical medical education, one can conclude that feedback is an important resource for both faculty and residents.⁶ A recent article that provided an overview of the literature defined feedback as “specific information about the comparison between a trainee's observed performance and a standard, given with the intent to improve the trainee's

performance.”⁷ This definition reflects the predominant concern in the medical education literature, emphasizing the intentions and active role of the feedback giver. Researchers have tried to find answers to questions such as “What feedback should be given?” “Who should give the feedback?” and “When should it be given?” all in order to improve a trainee's performance. This research focuses on generating “advice on how supervisors and formal appraisal systems can best deliver feedback to the individual.”⁸ This literature casts the supervisor as the active participant, producing feedback to provide to the resident, and casts the resident as a passive participant, simply receiving the feedback.

As many as 25 years ago, Ashford and Cummings^{9,10} criticized the literature on feedback in the field of organizational psychology for the very same situation. They argued that individuals are not just passive recipients of feedback.⁸ People work and learn in information-rich environments, and they actively seek

information about their own performance.¹¹ Ashford and Cummings¹¹ reconceptualized feedback as an individual resource. In different contexts, individuals have different reasons to look for feedback (e.g., to improve their performance or to bolster their self-image), they have preferences for feedback from certain sources, and they make choices concerning where and how they seek feedback. Since then, research on feedback-seeking behavior in social and organizational psychology has focused on aspects of feedback-seeking processes and outcomes—not just the process of giving feedback.^{10,12}

Studying feedback as a resource for residents is a valuable tool for increasing the understanding of working and learning in GME.¹³ In this report, we present a study that investigated what individual and situational variables influence residents' feedback-seeking behavior.

A Hypothetical Model

Organizational psychology studies human relationships and interactions within organizations—for instance, teamwork within a single department or the relationship between individual employees and their executive bosses. The field draws heavily on theoretical insights from social psychology regarding the interaction between humans and their (perceived) social environments. Drawing on the organizational and social psychological literature and on studies of workplace learning in GME, we used both individual and situational variables to develop a hypothetical model of residents' feedback-seeking behavior (Figure 1). The individual variables that we investigated are the perceived costs and perceived benefits of feedback-seeking and trainees' goal orientation. Situational variables used in this model are attending physicians' supervisory styles.

Research on feedback-seeking behavior has distinguished two ways in which people can obtain performance-related information.^{14,15} Individuals can ask for it directly (*inquiry*), or they can take in self-relevant information from their environment by observing the behavior of others (*monitoring*). These two methods may result in different kinds of information, partly because monitoring

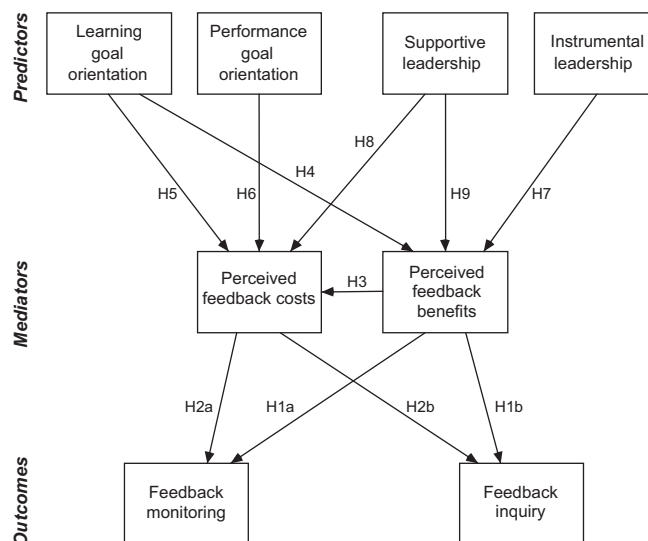


Figure 1 Hypothetical model of residents' feedback-seeking behaviors in relation to night shifts. The authors studied four predictor variables (learning and performance goal orientation and supportive and instrumental leadership) and how they relate to two mediator variables (perceived costs and benefits of feedback-seeking) to influence the frequency of residents' feedback monitoring and feedback inquiry (the two outcome variables). The "H" followed by a number corresponds with the hypothesis in the text.

requires people to interpret and derive meaning from any presented information by themselves. We used frequency of both inquiry and monitoring as the feedback-seeking outcome variables in this study.

Individual variables

Empirical evidence shows that most individual and situational factors influence feedback-seeking behavior indirectly through modifying the expected costs and benefits of feedback-seeking,¹⁰ while research in various settings has shown that an assessment of the costs and benefits associated with feedback-seeking directly influences individuals' feedback-seeking behavior.^{14,16–18} Feedback may provide benefits for individuals because the information they obtain can help them "meet their goals and regulate their behavior" (informational value).¹⁰ Feedback may also be beneficial because it allows people to maintain a positive self-view (ego-enhancement).¹⁹ In line with this reasoning, we propose the following hypothesis:

Hypothesis 1a: Perceived feedback benefits positively correlate to feedback monitoring.

Hypothesis 1b: Perceived feedback benefits positively correlate to feedback inquiry.

Feedback inquiry and monitoring may also present costs to individuals. People tend to avoid (or distort) information that does not fit their self-image (ego costs).¹⁹ According to Ashford and colleagues,¹⁰ if people expect nonverifying feedback, "they would be more likely to monitor for feedback than to use an inquiry strategy." Another cost comes from contexts where individuals feel that asking for feedback may make them look incompetent (self-presentation costs). They then tend to refrain from feedback-seeking through inquiry; some researchers found that people engage more in monitoring behavior under such conditions.^{16,18} On the basis of these research findings, we hypothesized that

Hypothesis 2a: Perceived feedback costs positively correlate to feedback monitoring.

Hypothesis 2b: Perceived feedback costs negatively correlate to feedback inquiry.

Because of the theoretical interrelatedness between perceived feedback benefits and costs, we also hypothesize an inverse relationship between these two variables:

Hypothesis 3: Feedback benefits negatively correlate to feedback costs.

Perceived costs and benefits of feedback are contingent on the situation in which people find themselves and, therefore,

vary. Other, relatively more stable personal attributes of residents—for instance, their goal orientations—may also affect the cost–benefit assessment. Goal orientations reflect one’s preferences in achievement situations.¹⁷ Stemming from work on the impact of goals and achievement motives on personality, Dweck²⁰ identified two major goal orientation anchors. A higher learning goal orientation reflects “a desire to learn new skills, master new tasks, or understand new things,” and a higher performance goal orientation is “about winning positive judgments of your competence and avoiding negative ones.”²⁰ In general, people with a learning goal orientation want to get smarter, and they believe they can continuously develop their abilities through effort and experience.^{17,20} In contrast, individuals with a higher performance goal orientation want to “look smart and avoid looking dumb,” and they believe ability to be a fixed entity that is hard to develop.^{17,20} They want to demonstrate the adequacy of their ability by seeking favorable judgments and trying to avoid negative judgments.

Ashford and Cummings¹¹ already suggested that goal orientations might be important influences on feedback-seeking behavior. In line with this assumption, research in different settings has found that individuals with a higher learning goal orientation perceived greater feedback benefits and fewer costs, leading to more feedback-seeking.^{17,18} Therefore, we hypothesize

Hypothesis 4: A positive relationship exists between a higher learning goal orientation and the perceived benefits of feedback.

Hypothesis 5: A negative relationship exists between a higher learning goal orientation and the perceived costs of feedback.

Although a scenario study with business students by VandeWalle and Cummings¹⁷ did show that people high in performance goal orientation do perceive more feedback costs,²¹ the literature on the relationship between performance goal orientation and perceived feedback benefits and costs is not unequivocal, possibly because of difficulties in adequately measuring performance goal orientation.^{22,23}

Theoretically, for trainees who have a higher performance goal orientation, the potential benefit of favorable judgments might counterbalance a tendency to avoid negative judgments. Consequently, we do not predict a relationship between higher performance goal orientation and perceived feedback benefits, but we do hypothesize the relationship between performance goal orientation and perceived feedback costs:

Hypothesis 6: A positive relationship exists between a higher performance goal orientation and perceived feedback costs.

Situational variables

In their roles as residents’ role models, assessors, and clinical supervisors, attending physicians play an important role in GME and are arguably a primary source of feedback for residents.^{24–26} Their attitudes and behavior towards residents are central in creating the culture in which trainees need to function.²⁷ In line with this perspective, we incorporated two widely used supervisory styles from the leadership literature: instrumental and supportive leadership.^{28,29} Instrumental leadership in this context reflects the degree to which supervisors organize and structure the work of residents during night shifts. Supervisors with a higher instrumental leadership style are clear about what they expect of residents, and they require residents to adhere to specific guidelines and procedures.³⁰ Such behavior leads to clear goals for residents. As research by VandeWalle and colleagues¹⁸ shows, this leads supervisees, in this case residents, to seek feedback in order to check goal progress. Moreover, a study by Ashford and Cummings¹¹ found that supervisors with a more instrumental leadership style give more feedback, which in turn increases feedback-seeking. Therefore, we argue that trainees in a context with supervisors with a higher instrumental leadership style will seek more feedback because of a higher perceived feedback benefit. This leads to the following hypothesis:

Hypothesis 7: A positive relationship exists between a higher instrumental leadership style and the perceived benefits of feedback-seeking.

The second supervisor style is supportive leadership. House and Dessler²⁸ characterized supportive supervisors as

“friendly and approachable, and considerate of the need of subordinates.” Studies have shown that feedback from sources who have a more supportive leadership style lead to an increase in feedback-seeking behaviors in their supervisees, probably because individuals who are comfortable with a feedback source perceive fewer costs.^{10,18} Research in clinical medical education indicates that residents highly value attending physicians who are receptive to residents’ personal matters.^{25,26} This leads residents to trust and respect the opinions of these attending physicians.²⁵ Therefore, we propose that residents also perceive more feedback benefits when it concerns the opinion of supervisors who are high in supportive leadership. The resulting hypotheses are

Hypothesis 8: A negative relationship exists between a more supportive leadership style and perceived feedback costs.

Hypothesis 9: A positive relationship exists between a more supportive leadership style and perceived feedback benefits.

To test our hypothetical model of residents’ feedback-seeking behavior, we conducted a cross-sectional survey of obstetrics–gynecology residents, examining the variables that led to more feedback-seeking through inquiry and to more feedback-seeking through monitoring.

Method

Study context, participants, and procedure

In the Netherlands, six years of undergraduate medical training leads to the MD degree and a basic qualification to practice medicine.³¹ Those interested in clinical medicine will then have to apply for a post in the residency program of their choosing. In this study we focused on junior doctors working in obstetrics–gynecology because this specialty incorporates aspects of both surgery and medicine. We included all Dutch obstetrics–gynecology residents-not-in-training (those who have completed their undergraduate medical education but who have not yet begun their graduate clinical training) and all Dutch obstetrics–gynecology residents in the first two years of the six-year GME

training period. We refer to both as residents.

The questions in our survey pertained to residents' feedback-seeking behavior on night shifts. Night shifts are a prime example of a clinical situation in which attending physicians are usually not present to observe trainees' activities.³² Moreover, attending physicians may not even have an accurate perception of what tasks residents do during night shifts.³²⁻³⁴ Thus, the *trainee* must seek additional performance-related information. The absence of direct faculty observation in this context makes feedback-seeking, especially feedback inquiry, all the more important to ensure patient safety and to promote learning from night shifts.^{3,5} We studied the subset of junior obstetrics-gynecology residents because we presumed this group to be relatively more focused on the development of their night shift work than more experienced residents.

In the Netherlands, 44 hospitals (including eight university medical centers) contribute to obstetrics-gynecology residency programs. In February 2008, one of us (F.S.) contacted the gynecologist responsible for the obstetrics-gynecology residents at each hospital, both to explain the purpose of the study and to ask for the names of eligible residents. All 44 gynecologists supported the study, but one university medical center did not have any eligible residents, and three others eventually failed to provide any residents' names. Following this, in March and April 2008, a total of 217 residents received a questionnaire and a letter that explained the purposes of the study, guaranteed the confidentiality of all data, and asked residents for their cooperation. After two weeks, we reminded nonresponders to send in the questionnaire if they were willing to participate. Although this study was exempt from ethical approval according to Dutch law, we dedicated considerable attention to the interests of our participants, fully informing them of our research aims, ensuring anonymity, and compensating them for their efforts with gift certificates worth €30.

Measures

The social and organizational psychology literature offered measures for all eight variables in our hypothetical model. We adapted these

Table 1

Examples of Items for Each of the Eight Measures Used to Study Residents' Feedback-Seeking Behaviors, 2008

Measure (number of items)	Sample item
Learning goal orientation (5)	I enjoy challenging and difficult tasks at work where I'll learn new skills.
Performance goal orientation (8)	I'm concerned about taking on a task at work if my performance would reveal that I had low ability.
Perceived feedback benefits (6)	Feedback on my performance during night shifts helps me to improve my work.
Perceived feedback costs (8)	It is not a good idea to ask your clinical supervisors for feedback; they might think you are incompetent.
Supportive leadership (9)	My clinical supervisor is friendly and approachable.
Instrumental leadership (7)	My clinical supervisor asks that residents follow standard rules and regulations.
Frequency of feedback inquiry (6)	How often do you ask your clinical supervisor for feedback on your performance during night shifts?
Frequency of feedback monitoring (6)	How often do you try to read the behavior of your clinical supervisor to find out how (s)he thinks you are doing?

measures for the current study context where necessary (Table 1), translated them to Dutch, and pilot-tested the complete questionnaire with four residents. For all measures, we averaged the scores on the items that together comprised the variable measure in order to calculate a variable score. We assessed learning goal orientation with a five-item measure and performance goal orientation with an eight-item measure that were both developed and validated by VandeWalle and Cummings¹⁷ (there is some debate around different goal orientation measures, but VandeWalle's measure is widely used²¹). These 13 items used six-point Likert-like scales ranging from 1 (strongly disagree) to 6 (strongly agree). We assessed perceived benefits of feedback with a six-item scale based on work by Ashford¹⁴ and Fedor and colleagues.¹⁶ To measure perceived costs of feedback, we constructed an eight-item scale that combined measures used by Ashford¹⁴ and by VandeWalle and Cummings.¹⁷ For both measures, the response scales ranged from 1 (strongly disagree) to 6 (strongly agree). To assess residents' perceptions of attending physicians' supervisory style, we adopted two measures from House and Dessler's²⁸ path-goal theory of leadership. The supervisors' supportive leadership scale consisted of nine items, and their instrumental leadership during night shifts had seven items. Response scales consisted of seven-point Likert-type scales ranging from 1 (never) to 7 (always). As outcome variables, we asked

residents to report how frequently they sought feedback through inquiry from attending physicians and how frequently they engaged in feedback monitoring, using two six-item measures derived from work by Fedor and colleagues¹⁶ and Ashford and Tsui.³⁵ The items used seven-point Likert-like scales ranging from 1 (never) to 7 (always).

Analysis

After replacing missing values using two-way imputation for separate scales,³⁶ we used Cronbach alpha to assess the internal consistency of our measures. Descriptive statistics and Pearson correlation coefficients allowed us to screen the data and assess the relationships between pairs of variables. We used Mann-Whitney tests to look for differences between men and women on the variable scores. The complexity of the hypothetical model, with multiple mediators and outcome variables, led us to use structural equation modeling (SEM).³⁷ SEM is a powerful statistical tool that builds on techniques such as correlation, regression, factor analysis, and analysis of variance (for an explanation of SEM, see Violato and Hecker³⁸; we used AMOS 7.0 software, SPSS Inc., Chicago, Illinois). SEM enabled us to test the significance of the hypothesized relationships between variables and the fit of the overall model. Regression weights were deemed significant at an alpha level of .05. To assess different aspects of the overall model fit, we used several indices. These

are the chi-square index (which itself should not be significant) divided by degrees of freedom (CMIN/*df*), which should be less than 3 for a good model fit. The root mean square error of approximation (RMSEA) should be less than or equal to .05. PCLOSE is the corresponding *P* value that tests the null hypothesis that the RMSEA is no greater than .05. The comparative fit index (CFI) compares the covariance matrix of our empirical model to the observed covariance matrix. A CFI close to 1 indicates a very good fit.

Results

Of the 217 questionnaires we sent to residents in the 40 participating hospitals, 166 correctly completed questionnaires were returned, giving us a response rate of 76.5%. The participants consisted of 142 women (85.5%) and 24 men (14.5%), which is comparable to the overall Dutch obstetrics–gynecology resident population. We detected no differences on any of the variable means based on gender. Of the residents in our study sample, 140 (84.3%) were working in a general hospital and the rest were employed at a university hospital; 75 (45.2%) were residents-in-training. The average age was 28.4 years (SD 2.9), and residents had, on average, an experience of 21.6 months (SD 15.2) in the field of obstetrics–gynecology. Table 2 presents the means, standard deviations, Cronbach alphas, and correlations among variables in the hypothetical model.

We tested the hypothetical model of individual and situational variables that influence residents’ feedback-seeking behaviors on night shifts (Figure 1) with SEM. This resulted in the model depicted in Figure 2, which shows the relationships that proved significant along with their standardized regression weights. The fit indices for the model are as follows:

- chi-square = 20.00, *df* = 16, *P* = .22,
- CMIN/*df* = 1.25,
- RMSEA = .04, PCLOSE = .60, and
- CFI = .98

A CFI of .98 indicates that 98% of the covariance in the data is accounted for by the model.³⁸

The model in Figure 2 shows that our results confirmed hypotheses 1a, 1b, and 2a. The greater the perceived benefits of feedback, the more residents seek feedback through either inquiry or monitoring. Likewise, more perceived costs of feedback relate to more feedback monitoring. However, we did not find a significant relationship between perceived costs of feedback and the frequency of feedback inquiry (hypothesis 2b). A negative relationship does exist between the perceived benefits and costs of feedback, confirming hypothesis 3. Except for one (hypothesis 7), we confirmed hypotheses 4 through 9, which concerned the relationships between the four predictor variables and perceived feedback benefits and costs. No

relationship exists between a supervisor’s more instrumental leadership style and the perceived benefit of feedback, ruling out perceived benefit of feedback as a variable that mediates the effect of an instrumental leadership style on feedback-seeking behavior. But, as Figure 2 shows, a direct and positive relationship does exist between a more instrumental leadership style and feedback inquiry. In a similar fashion, we found that although a higher learning goal orientation is positively mediated by perceived feedback benefit (hypothesis 4) and negatively mediated by perceived feedback costs (hypothesis 5), there remained an unmediated effect of a higher learning goal orientation on feedback monitoring. Further, among the four predictor variables, a significant correlation exists between a more supportive and more instrumental leadership style (Table 2, Figure 2). In the perception of the residents, supervisors who display supportive leadership characteristics are also more directive in their supervisory style. We accounted for this in the model in Figure 2. The resulting model explains 31% of the variance on the perceived feedback costs variable, 13% of the variance on perceived feedback benefits, 24% of the variance on feedback monitoring, and 21% of the variance on feedback inquiry. In other words, almost a fourth of the differences in residents’ frequency of feedback monitoring and a fifth of the differences in their feedback inquiry rate are explained by the model.

Discussion and Conclusions

Starting from the conclusion that the current literature on feedback in clinical medical education predominantly treats trainees as passive recipients of feedback, we turned to the social and organizational psychology literature to study residents as active seekers of feedback. We investigated factors that influence Dutch obstetrics–gynecology residents’ feedback-seeking behavior in relation to their work on night shifts. There is a tradeoff in which the more perceived feedback benefits are associated with fewer perceived feedback costs. Residents who perceive more feedback benefits report a higher frequency of both feedback inquiry and feedback monitoring. More perceived feedback costs result mainly in more feedback monitoring. Residents who enter

Table 2
Means, Standard Deviations (SDs), Cronbach Alphas of, and Correlations Among the Eight Variables Included in the Model of Residents’ Feedback (FB)-Seeking Behavior

Variable	Mean (SD)	Cronbach alpha	Correlations						
			1	2	3	4	5	6	7
1. Learning goal	4.48 (0.52)	.70							
2. Performance goal	2.88 (0.56)	.78	.08						
3. Supportive leadership	4.94 (0.82)	.87	.14	-.10					
4. Instrumental leadership	4.90 (0.69)	.76	.10	-.07	.53 [†]				
5. Perceived FB costs	2.46 (0.68)	.81	.25 [†]	.33 [†]	.32 [†]	-.19 [†]			
6. Perceived FB benefits	4.54 (0.52)	.67	.21 [†]	-.13	.35 [†]	.23 [†]	-.46 [†]		
7. FB monitoring	5.24 (0.97)	.87	.19 [†]	.14	.12	.19 [†]	.04	.38 [†]	
8. FB inquiry	4.06 (1.18)	.89	.18 [†]	-.06	.35 [†]	.39 [†]	-.23 [†]	.33 [†]	.23 [†]

Data were obtained through a cross-sectional survey of Dutch obstetrics–gynecology residents in 2008.

[†] *P* < .05.

[‡] *P* < .01.

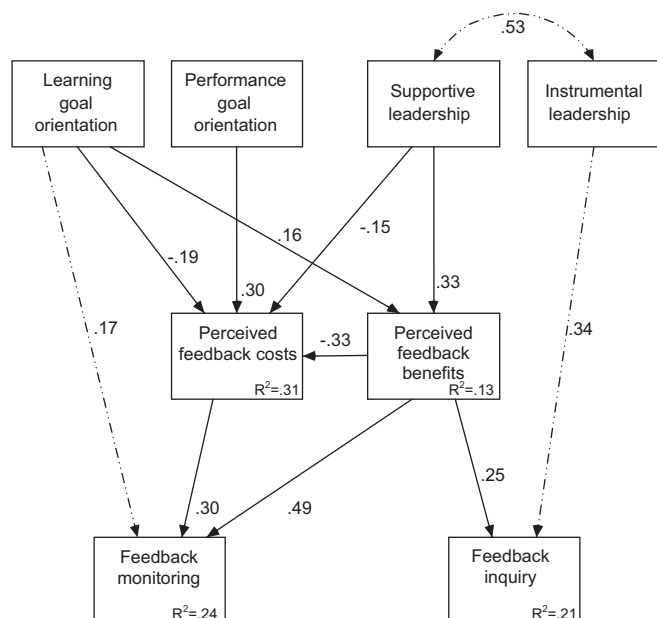


Figure 2 Model explaining residents' feedback-seeking behaviors in relation to night shifts. The model is based on data analysis completed with structural equation modeling software. Reported path values are standardized regression weights. Standardized regression weights $< .19$ are significant at the $P = .05$ level; regression weights $> .20$ are significant at the $P = .001$ level. R^2 is the percentage of variance explained for that specific variable. Solid paths are the confirmed hypothesized relations. Hypotheses H2b and H7 were not confirmed and are not shown. The dotted paths represent nonhypothesized but significant relations.

achievement situations with a goal orientation toward learning perceive more benefits of feedback and fewer costs. The more residents want to “look smart and avoid looking dumb” (a performance goal orientation), the more feedback costs they perceive.¹⁷ Approachable (i.e., supportive) attending physicians who are considerate of residents' needs lead to more perceived feedback benefits and fewer costs. This supervisory style is related to attending physicians' tendency to be clear about expectations and to help structure and organize residents' work during night shifts, which leads trainees to ask for more feedback from these attending physicians.

This study sheds some light on how situational (attending physicians' supervisory style) and personal factors (goal orientations) influence a resident's personal interpretation of the benefits and costs of feedback-seeking in relation to night shifts, and how these personal interpretations subsequently influence behavior. The importance of these kinds of factors and their interactions with one another in the clinical environment is consistent with both qualitative and quantitative research showing that residents interpret and learn different

things based on their frames of reference and the influence of others who are significant at the workplace.^{25,39}

Our findings have several practical implications. First of all, a reconsideration of the underlying motives that lead trainees to “seek, select, process, and react to self-relevant information” is in order.¹² Most clinical supervisors and medical education researchers (implicitly) assume that residents want feedback in order to improve their knowledge or skills, which would be indicative of a self-improvement motive.⁶ Indeed, psychological research has found that people may seek feedback because they are motivated to improve abilities or skills, regardless of the implications of the information for the self or for self-conceptions.^{12,40,41} This is consistent with our findings on the effect of a learning goal orientation. However, in our study, residents high in performance goal orientation perceived more feedback costs, suggesting that other motives might play a role as well. Literature from the field of social psychology offers two motives that might explain this. First, residents high in performance goal orientation might act from a desire to “increase the positivity, or decrease the

negativity, of one's self-concept.”^{42,43} This is called a self-enhancement motive.¹² Self-enhancement motives are thought to contribute to some well-studied phenomena. For instance, in an effort to maintain a positive self-image, people tend to attribute positive events to their own accomplishments and negative events to factors beyond their control.⁴⁴ Second, residents high in performance goal orientation might act out of a self-verification motive. Self-verification is the tendency “to prefer and seek out information that is consistent with existing self-views.”⁴² Performance goal orientation is related to perceived costs, which in turn is related to feedback monitoring and not to feedback inquiry. Feedback monitoring allows the resident to interpret self-relevant information in ways that validate existing self-views. Janssen and Prins⁴¹ substantiated this latter explanation in their study of the types of feedback information sought by 170 Dutch residents from different specialties. Clinical supervisors should take into account that trainees have multiple, possibly conflicting, motives that influence whether or not they seek self-relevant information.

Another practical implication comes from the role an attending physician's supervisory style plays in residents' decisions to ask for feedback. Of course, one way in which clinical supervisors can ensure patient safety and promote a resident's development is by giving unsolicited feedback to residents.²³ However, supervisors should realize that their behavior towards residents influences the residents' tendency to actively ask for feedback. Our findings showed that supervisors who combine a supportive supervisory style with an instrumental one are most successful in making clear to residents how valuable directly asking for feedback can be. In settings such as night shifts, in which it is imperative that residents actively ask for feedback, supervisory style might be an additional way in which supervisors can ensure both patient safety and residents' development.

In this study, we used well-reported measures from psychological research on feedback-seeking behaviors. Nonetheless, we had to adapt some of the measures to the context of clinical medical education and obstetrics–gynecology night shifts. This may have led to some resulting measures, such as the perceived benefits

of feedback, that did not fully capture the breadth of the concept. Perceived feedback benefits had a relatively low Cronbach alpha, and the amount of variance explained on the perceived feedback benefits variable was only 13% (Figure 2). A better conceptualization of perceived feedback benefits might have caused instrumental leadership to exert its effect on feedback-seeking through this mediating variable. Future research could explore the concept of perceived feedback benefits within GME. A second limitation of our study is that the data were obtained through self-report. Self-report leads to concerns that common method variance may be partly responsible for the coherence of the results. However, our findings are consistent with literature on feedback-seeking in other settings and with other methods.⁴⁵ One of the strengths of this study is our relatively large and nationwide sample of residents, adding to the generalizability of our model for obstetrics–gynecology; however, we confined our study to just that specialty, which allowed us to focus on feedback-seeking behavior in relation to the relevant task of night shifts. Therefore, we cannot extrapolate our results to other tasks or specialties. Another area for future research is the concept of goal orientations, which is not widely used within medical education but looks promising for enhancing the understanding of how residents' personal attributes influence their work and development in the clinical workplace. Further research might also explore if other variables, such as task characteristics (high risk versus low risk), the presence of clear educational goals and requirements, or residents levels of self-efficacy, influence residents' feedback-seeking behaviors. (Self-efficacy has been studied as a predictor of feedback-seeking behavior as well as an outcome of the feedback-seeking process.⁸) Finally, we had to treat both residents-not-in-training and residents-in-training as one group to have a large enough sample for SEM. This pooling prevented us from analyzing differences based on training status or experience. Future research could investigate whether different feedback-seeking models hold for different groups of residents.

In conclusion, we conducted a nationwide study based on the premise that residents are not just passive

recipients of, but also active seekers of, feedback. The feedback-seeking behavior of obstetrics–gynecology residents in relation to their work on night shifts partly depends on residents' goal orientations and attending physicians' supervisory style. Clinical supervisors should realize that residents seeking feedback might have self-improvement, but also self-enhancement or self-verification motives, and that supportive supervisors who are clear about goals and expectations lead residents to actively seek feedback more frequently.

Acknowledgments

The authors would like to thank the residents who participated in this study. The authors also thank Henk van Berkel and Rachel Isba for their help with this report.

References

- Ende J. Feedback in clinical medical education. *JAMA*. 1983;250:777–781.
- Wood BP. Feedback: A key feature of medical training. *Radiology*. 2000;215:17–19.
- Kilminster SM, Jolly BC. Effective supervision in clinical practice settings: A literature review. *Med Educ*. 2000;34:827–840.
- Irby DM, Papadakis M. Does good clinical teaching really make a difference? *Am J Med*. 2001;110:231–232.
- Teunissen PW, Boor K, Scherpbier AJ, et al. Attending doctors' perspectives on how residents learn. *Med Educ*. 2007;41:1050–1058.
- Veloski J, Boex JR, Grasberger MJ, Evans A, Wolfson DB. Systematic review of the literature on assessment, feedback and physicians' clinical performance: BEME guide no. 7. *Med Teach*. 2006;28:117–128.
- van de Ridder JM, Stokking KM, McGaghie WC, ten Cate OT. What is feedback in clinical education? *Med Educ*. 2008;42:189–197.
- Davis W, Fedor DB. The Role of Self-Esteem and Self-Efficacy in Detecting Responses to Feedback. Available at: (<http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA349452&Location=U2&doc=GetTRDoc.pdf>). Accessed March 24, 2009.
- Ashford SJ, Cummings LL. Proactive feedback seeking: The instrumental use of the information environment. *J Occup Psychol*. 1985;58:67–79.
- Ashford SJ, Blatt R, VandeWalle D. Reflections on the looking glass: A review of research on feedback-seeking behaviour in organizations. *J Manag*. 2003;29:773–799.
- Ashford SJ, Cummings LL. Feedback as an individual resource: Personal strategies of creating information. *Organ Behav Hum Perform*. 1983;32:370–398.
- Anseel F, Lievens F, Levy PE. A self-motives perspective on feedback-seeking behavior: Linking organizational behavior and social psychology research. *Int J Manag Rev*. 2007;9:211–236.
- Kennedy TJ, Regehr G, Baker GR, Lingard LA. Progressive independence in clinical training: A tradition worth defending? *Acad Med*. 2005;80:S106–S111.
- Ashford SJ. Feedback seeking in individual adaptation: A resource perspective. *Acad Manag J*. 1986;29:465–487.
- Roberson L, Deitch EA, Brief AP, Block CJ. Stereotype threat and feedback seeking in the workplace. *J Vocat Behav*. 2003;62:176–188.
- Fedor DB, Rensvold RB, Adams SM. An investigation of factors expected to affect feedback seeking: A longitudinal field study. *Pers Psychol*. 1992;45:779–805.
- VandeWalle D, Cummings LL. A test of the influence of goal orientation on the feedback-seeking process. *J Appl Psychol*. 1997;82:390–400.
- VandeWalle D, Ganeson S, Challagalla GN, Brown SP. An integrated model of feedback-seeking behavior: Disposition, context and cognition. *J Appl Psychol*. 2000;85:996–1003.
- Baumeister R. The self. In: Gilbert D, Fiske S, Lindzey G, eds. *Handbook of Social Psychology*. Boston, Mass: Oxford University Press; 1998.
- Dweck CS. *Self-Theories: Their Role in Motivation, Personality, and Development*. Philadelphia, Pa: Psychology Press; 1999.
- McKinney AP. *Goal Orientation: A Test of Competing Models* [PhD thesis]. Blacksburg, Va: Virginia Polytechnic Institute and State University; 2003.
- VandeWalle D. Development and validation of a work domain goal orientation instrument. *Educ Psychol Meas*. 1997;57:995–1015.
- VandeWalle D. A goal orientation model of feedback-seeking behavior. *Hum Resour Manage Rev*. 2003;13:581–604.
- Ullian JA, Bland CJ, Simpson DE. An alternative approach to defining the role of the clinical teacher. *Acad Med*. 1994;69:832–838.
- Teunissen PW, Scheele F, Scherpbier AJ, et al. How residents learn: Qualitative evidence for the pivotal role of clinical activities. *Med Educ*. 2007;41:763–770.
- Cruess SR, Cruess RL, Steinert Y. Role modelling—Making the most of a powerful teaching strategy. *BMJ*. 2008;336:718–721.
- Hoff TJ, Pohl H, Bartfield J. Creating a learning environment to produce competent residents: The roles of culture and context. *Acad Med*. 2004;79:532–539.
- House RJ, Dessler G. The path—goal theory of leadership: Some post hoc and a priori tests. In: Hunt JG, Larson LL, eds. *Contingency Approaches to Leadership*. Carbondale, Ill: Southern Illinois University Press; 1974.
- Judge TA, Piccolo RF, Ilies R. The forgotten ones? The validity of consideration and initiating structure in leadership research. *J Appl Psychol*. 2004;89:36–51.
- Stogdill RM. *Manual for the Leader Behavior Description Questionnaire—Form XII*. Columbus, Ohio: State University, Bureau of Business Research; 1963.
- Ten Cate O. Medical education in the Netherlands. *Med Teach*. 2007;29:752–757.
- Chalasan K, Nettleman MD, Moore SS, MacArthur S, Fairbanks RJ, Goyal M. Faculty misperceptions about how residents spend their call nights. *JAMA*. 2001;286:1024.
- Wood VC, Markert RJ, McGlynn TJ. Internal medicine residents' perceptions of the

- balance between service and education in their night-call activities. *Acad Med.* 1993;68: 640–642.
- 34 Moore SS, Nettleman MD, Beyer S, et al. How residents spend their nights on call. *Acad Med.* 2000;75:1021–1024.
- 35 Ashford SJ, Tsui AS. Self-regulation for managerial effectiveness: The role of active feedback seeking. *Acad Manag J.* 1991;34: 251–280.
- 36 Van Ginkel JR, Van der Ark LA, Sijtsma K. Multiple imputation for item scores when test data are factorially complex. *Br J Math Stat Psychol.* 2007;60:315–337.
- 37 Arbuckle JL, Wothke W. *Amos Users' Guide.* Version 4.0. Chicago, Ill: Small Waters Corporation; 1999.
- 38 Violato C, Hecker KG. How to use structural equation modeling in medical education research: A brief guide. *Teach Learn Med.* 2007;19:362–371.
- 39 Teunissen PW, Stapel DA, Scheele F, et al. The influence of context on residents' evaluations: Effects of priming on clinical judgment and affect. *Adv Health Sci Educ Theory Pract.* 2009;14:23–41.
- 40 Trope Y, Pomeranz EM. Resolving conflicts among self-evaluative motives: Positive experiences as a resource for overcoming defensiveness. *Motiv Emot.* 1998;22: 53–72.
- 41 Janssen O, Prins J. Goal orientations and the seeking of different types of feedback information. *J Occup Organ Psychol.* 2007; 80:235–249.
- 42 Leary MR. Motivational and emotional aspects of the self. *Annu Rev Psychol.* 2007; 58:317–344.
- 43 Sedikides C, Herbst KC, Hardin DP, Dardis GJ. Accountability as a deterrent to self-enhancement: The search for mechanisms. *J Pers Soc Psychol.* 2002;83: 592–605.
- 44 Blaine B, Crocker J. Self-esteem and self-serving biases in reactions to positive and negative events: An integrative review. In: Baumeister RF, ed. *Self-Esteem: The Puzzle of Low Self-Regard.* New York, NY: Plenum; 1993.
- 45 Butler R. Effect of task- and ego-achievement goals on information-seeking during task engagement. *J Pers Soc Psychol.* 1993;65:18–31.

Teaching and Learning Moments

More Old People Classes

As I sat in the classroom during my first year, my head swimming with physiology and biochemistry, I longed for the time I would interact with patients on a daily basis. "If only I could be a third year already," I thought. Partway through my first year, I had to decide how I would spend my "last summer of freedom." Ultimately, I joined a geriatrics education study, despite the deep temptation to lounge by the pool enjoying a book that did not weigh 10 pounds.

The study evaluated third-year medical students' competence in caring for geriatric patients and emphasized injury, including falls, and medications. I would spend my days following the very third-year students I envied as they interacted with patients.

Going in, I was fully expecting some rejection. However, everyone was very welcoming and didn't seem to mind that I kept making checks on my observation sheet, which included whether the student asked the patients about their medications. The third-year students just seemed happy

to finally have someone following *them* around for a change, to have someone to whom they could show the ropes. During down time, they even gave me study tips for the next year.

All was well until I had an encounter with one particular student. She, like her classmates, was more than helpful to me. Her interactions with the patients were always cordial, and she took time to listen to their concerns. However, at the end of my observation, guessing that my project was focused on geriatric patients, she emphatically stated, "I don't want to have more old people classes."

I was shocked. How could such a nice and welcoming student have such an attitude? More "old people classes?" What in the one training year that separated us caused her to feel this way? Could this be me one year from now? Did she not realize that no matter what specialty she would eventually enter she would have geriatric patients? All these questions blasted into my head as I tried to hide my utter disbelief in her response. I left

the clinic that day questioning our interaction, the study, and my own education.

Originally, I viewed the project as a chance to explore my interests, to learn how to do an observational study, and to have a glimpse of the future that seemed so far away. After this student's striking comment, however, I realized how desperately we need to change how medical students learn about older adults. The geriatric patients I saw were clinically complex, with varied perspectives, and rich with life experiences. As I returned to the classroom ready for the next round of classes and exams, I thought about the patients I will help in the not-too-distant future and realized that *they* are the reason why I gladly look forward to "more old people classes." I only hope that I can get my fellow students to see their geriatric patients as more than just "old people."

Maria Burzynski

Ms. Burzynski is a third-year student, Medical College of Wisconsin, Milwaukee, Wisconsin; (mburzyns@mcw.edu).