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From feedback to action: Physicians’ teaching performance in residency training
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Summary
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Chapter 1 forms the introductory chapter of this thesis. We describe and define professional performance of clinicians, the role of feedback and the importance of high quality teaching performance in light of residency training. By sketching the historical development of medical education with several landmark reports, the current state of residency training and future expectations of clinicians’ professional performance we provide context to the outline of our research.

The changes in society and healthcare, as well as residency training, are nothing short of a revolution. To keep a good perception of clinicians’ professional performance is crucial, as societal trust depends on professional performance. Maintaining or developing one’s own professional performance is an essential basic element of what constitutes performing as a professional. Feedback is a vital element in the process of maintenance and development of performance. Two important reviews on feedback show that (1) feedback does not always work and (2) formative feedback is best suited for learning. In medical education, it is widely assumed that high quality training is essential for high quality patient care. Faculty (physicians working in residency training) are responsible for the training of residents to become high performing specialists in the future while ensuring patient care today. To support faculty in this demanding task, they receive residents’ feedback on their teaching performance in order to identify possible areas for improvement.

This thesis adds to the knowledge on measuring teaching performance and explaining teaching performance improvement of faculty working in residency training through the use of residents’ feedback.

In Chapter 2 we report the findings of a systematic literature review. We gathered available evidence on the assumption that better training would result in better patient outcomes. We focused on two aspects of this assumption: (1) ‘are residents who received a ‘better’ training also able to achieve better patient outcomes in their work after finishing residency training?’ and (2) ‘what are the patient outcomes of care provided during residency training?’ Overall, we aimed to investigate the effect of residency training aspects on patient outcomes. However, only one study examined the first aspect of our aim, whereas the second aspect was investigated in the other 96 studies we retrieved. It appears that July is a time to be alert in the US and UK, when graduates collectively start their residency training. Nonetheless, the individual progress of residents when proceeding through their training positively impacts patient outcomes. Conditions for these positive effects are extra time to perform an operation and receiving adequate supervision. Adequate supervision entails the supervision to be adjusted to the training level of the resident and the complexity of the patient case.

We presented a psychometric study in Chapter 3 to assess the quality of the measurement instruments that were developed to provide faculty with individual teaching performance feedback. The System for Evaluation of Teaching Qualities (SETQ) contains two instruments as part of a cyclical improvement system: a resident-completed questionnaire and a
self-evaluation that is completed by faculty. In order to use feedback for improvement, it is vital that the feedback can be regarded as valid, reliable and specific. Therefore, we focused on the specialty-specific SETQ instruments of obstetrics and gynecology. We used different psychometric analyses to test the quality of the instruments. Based on an exploratory factor analysis, we identified five factors: learning climate, professional attitude towards residents, communication about learning goals, evaluation of residents and giving feedback. Other outcome measures of the psychometric analysis confirmed the validity and reliability of the instruments when an average of 4 to 6 evaluations was combined into one feedback report.

In Chapter 4 we focused on the narrative feedback that is frequently requested at the end of questionnaires, which is also the case in the SETQ instruments. In this mixed-methods study, both qualitative as well as quantitative methods were combined: we counted the number of narrative feedback comments per evaluation and analyzed these numbers using multi-level analysis. In the resident-completed questionnaire, residents are asked to formulate strengths and suggestions for improvement of the teaching performance of this particular faculty. By examining the frequency and determinants of the number of comments, we aimed to identify residents’ use of narrative feedback and the amount of narrative feedback received by faculty. On average, faculty received thirteen positive comments and five suggestions for improvement. The mean score calculated based on the numerical feedback (answers on a five point Likert scale) was seen as the strongest predictor for the type and number of comments faculty received. Faculty receiving a high mean score –implicating high teaching performance- also received more positive comments, compared to lower scoring faculty. Vice versa, lower scoring faculty received more suggestions for improvement.

To further our understanding of the narrative feedback, we explored the content and specificity of the suggestions for improvement in Chapter 5. Although this was also a mixed-methods study, we focused mainly on the qualitative coding of the suggestions for improvement through the development of literature-based coding schemes. We found that for approximately 80% of all faculty who receive suggestions for improvement within their feedback report, these suggestions regard their teaching skills or teaching attitude. For 30% of faculty, residents (also) formulated suggestions for improvement on their personal characteristics. Since feedback on personal characteristics is less likely to stimulate improvement, we continued with the teaching skills and attitude feedback to explore the specificity of these suggestions for improvement. Specificity of the narrative feedback is important to accept and apply the suggestions in teaching performance improvement. We found that the majority of residents positively formulated the suggestions for improvement: ‘leave more freedom to the residents’ compared to ‘less interruption’. Additionally, residents described a location or situation of the observed teaching, presented concrete tips and/or added the (expected) effect of faculty’s teaching skills or attitude. However, these additional aspects of specificity could be increased, which may result in more specific feedback that could facilitates faculty’s interpretation and implementation of the suggestions for improvement.
In Chapter 6 of this thesis, we combined the different aspects of the SETQ in a longitudinal study on the effect of these aspects on subsequent teaching performance one year later. The predictor variables were (1) the numerical feedback score of residents on faculty’s teaching performance, (2) the number of positive narrative feedback and (3) the number of suggestions for improvement phrased by residents, and (4) completing a self-evaluation or not. Because reflection on one’s own performance is thought to be important for improvement, we did not only use residents’ input, but also faculty’s self-evaluation. The main outcome measure was residents’ perception of faculty’s teaching performance improvement after one year. The SETQ showed to support teaching performance improvement of faculty in residency training. Receiving suggestions for improvement was seen as a predictor for the first SETQ wave as well as in a second SETQ wave.

In Chapter 7 we describe the study in which we investigated the effect of residents’ feedback on teaching performance of faculty. This qualitative study differs from the quantitative study in Chapter 6 by its focus on understanding faculty’s response to feedback rather than the effect on improvement. We interviewed faculty of different specialties from different hospitals to clarify how they (re)act to and upon feedback. Prochaska’s trans-theoretical framework served as a basis to clarify faculty’s responsiveness to feedback. The framework consists of four interacting concepts important in behavioral change: (1) stages of change, (2) processes of change, (3) the balance between pros and cons and (4) self-efficacy. These four constructs were visible in our data from the interviews and extensive examination and discussion within the research team led to insight into faculty’s responsiveness to residents’ feedback. Faculty strongly vary in their reaction to feedback and hence their responsiveness and action. However, feedback is a crucial starting point for the processes and stages of change and thus towards eventually taking action.

Chapter 8 contains twelve tips to make the best use of feedback. Feedback is essential for learning, but this does not mean that all feedback ‘works’. Feedback is often too vague and receiving negative feedback can be challenging to still get to areas for improvement rather than dismissing it on feelings of failure. We based 12 tips on existing literature and expert discussions. The twelve tips can support faculty and other people receiving feedback to address the feedback and decide on the best strategies to identify possible areas for improvement. It is important to become quiet and take the time to read and postpone judgment in order to get an overview of the feedback. Separating content from the relation with the one who provided the feedback can stimulate identification of areas for improvement. Within this process, the balance between confidence and being humble, keeping professional goals an attitude in mind and taking the subject of the feedback seriously are essential. The common goals of the feedback giver and receiver, possibly in a conversation about the feedback with each other or with peers, can help making the best use of feedback. Finally, picking out the pearls is as important as deliberately rejecting feedback that is not helpful.

In Chapter 9 the results of the above-described studies are discussed and placed in the context of the research field as well as a broader theoretical perspective of the literature.
on feedback and the (inter)national developments. After evaluating the strengths and limitations of our work, we finish with opportunities for future research and implications for practice. First, future research should focus on the continuous validation of measurement instruments, which will also be focused on different countries with the European SETQ project. Second, the further analysis of the effect of narrative feedback on teaching performance improvement is an important research topic. Third, reflective practice is an area of great interest and interventions should be tested for their evidence. Finally, we should broaden the scope of research to identify possible explanations for the level of teaching performance and the impact on patient care. This thesis holds practical implications for faculty and residents. Furthermore, there are ways to move forward, which include using the cyclical character of the SETQ system to embed quality control of residency training and also safeguarding and further developing the collaboration with practice, government and other fields to adhere to the needs of residency training quality.