

Multi-source feedback
for physician learning and change

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Multi-source feedback for physician learning and change

Proefschrift

ter verkrijging van de graad van doctor
aan de Universiteit Maastricht,
op gezag van de Rector Magnificus,
Prof. mr. G.P.M.F. Mols
volgens het besluit van het College van Decanen
in het openbaar te verdedigen op
donderdag 21 september 2006 om 14.00 uur

door

Joan Mary Sargeant

ISBN 0-9781130-0-4

Copyright: Joan Sargeant, Bedford, Nova Scotia, Canada
Design: Chris Reardon, Halifax, Nova Scotia, Canada
Printing: Halcraft Printers Inc., Halifax, Nova Scotia, Canada

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TABLE OF CONTENTS

Chapter 1	Introduction	1
Chapter 2	Responses of rural family physicians and their colleague and coworker raters to multi-source feedback: A pilot study	19
Chapter 3	Exploring family physicians' reaction to MSF performance assessment: Perceptions of credibility and usefulness	29
Chapter 4	Challenges in multi-source feedback: Intended and unintended outcomes	43
Chapter 5	Understanding the influence of emotions and reflection upon multi-source feedback acceptance and use	59
Chapter 6	Learning in practice: Experiences of high scoring physicians	77
Chapter 7	Conclusions and Discussion	93
	Summary	119
	Samenvatting	125
Appendix A	Multi-source feedback (MSF) documents used in this research	133
Appendix B	Summary of meta-analysis of longitudinal studies of multi-source feedback MSF (Smither et al, 2005)	149
	Acknowledgements	155
	Curriculum vitae	158

Chapter 1



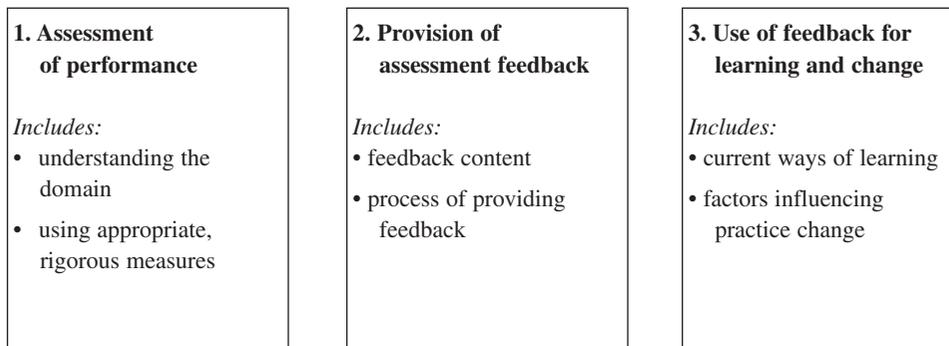
Introduction

Society's demands and the profession's response

Medicine as a self-regulating profession is accountable to the public for ensuring the provision of competent, appropriate care. To this end, professional regulatory organizations are legislated to protect patients and ensure physician competence, which they do by implementing appropriate monitoring and assessment programs. Canada where this thesis originates has followed the same path. More recently, some organizations have also recognized a responsibility to enhance physicians' performance, not just assess it, and are adopting programs of a more formative nature.¹

The enhancement approach is consistent with changing philosophical perspectives in the fields of education and assessment, moving from notions of summative assessment to the adoption of more constructivist approaches.²⁻⁴ Within a constructivist context, formative performance assessment is central.^{2,3,5-7} It involves conducting an assessment and providing feedback on that assessment to inform learners and practitioners about their performance and guide their continued learning and practice improvement. The steps involved are presented very simply in Figure 1:

Figure 1: Steps included in formative assessment



This model is helpful in understanding formative assessment and examining what is involved in each of the three steps. For example, “*Assessment of performance*” involves understanding the performance domains being assessed and use of appropriate assessment measures for each domain. “*Provision of assessment feedback*” includes two components, the process used for providing feedback and the feedback content. “*Use of feedback for learning and change*” includes appre-

ciation of ways in which physicians usually continue to learn and remain competent, and of factors which influence their decisions to change their practice.

One example of a performance assessment and enhancement approach recently adopted by professional, regulatory and educational institutions is multi-source feedback (MSF).⁸ MSF use by physicians is the topic of this thesis. Research on MSF has led to better understanding of it as a type of formative assessment. Considering the first step of formative assessment, *Assessment of professional performance*, substantial bodies of literature in both industry and medical education have investigated MSF measures and contributed to the rigour of their psychometric properties. However, less evidence is available especially within medical education to inform Step 2, *Provision of assessment feedback* and this evidence is particularly limited for Step 3, *Use of feedback for learning and practice change*. Therefore we directed our research into these fields, particularly wishing to learn more about the responses of physicians to their feedback and the uses they made of it.

In the following sections we review the general literature linked to formative assessment and the specific literature describing MSF, and describe in more detail the context, questions and design for our research.

Formative assessment

The following includes a brief overview of the literature informing each of the three steps of formative assessment.

ASSESSMENT OF PROFESSIONAL PERFORMANCE

Effective professional performance requires competence in a number of domains. Epstein and Hundert defined professional competence as “as the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values and reflection in daily practice for the benefit of the individual and community being served” (p.226).⁵ They suggest that domains or functions include the cognitive, technical, integrative, interpersonal, affective/ moral, and reflective. Competence is domain and context specific, dynamic and developmental, and its maintenance requires continued learning throughout a physician's career.

Professional and regulatory bodies in several countries, recognizing the multiple facets of professional performance, have identified and defined the competencies involved in medical practice. For example, the Royal College of Physicians and Surgeons of Canada used the original work of the “Educating Physicians for Ontario (EFPO)” initiative which conceptualized physician roles through discussions with professionals and the public,⁹ to develop the CanMEDS competency framework. It describes and identifies expectations of each of seven physician roles: medical expert, communicator, collaborator, scholar, manager, health advocate, professional.¹⁰ Other organizations have developed similar frameworks, including the American Board of Medical Specialties,¹¹ Accreditation Council on Graduate Medical Education in the US,¹² and General Medical Council in the UK.^{13,14}

Recognizing that professional performance is multi-dimensional and context specific has also led to new ways of thinking about its assessment.^{15, 16} To date, traditional domains like clinical knowledge and skills have been more adequately assessed than the more recently recognized ones such as interpersonal and professional skills. Performance in the latter domains is best assessed in the practice setting and requires new assessment approaches involving patients, peers, coworkers, and self-assessment. Assessment of professional performance must also be multi-dimensional and use multiple measures.^{7,16} As for any assessment, these measures must be rigorous and meet criteria for content, construct and criterion validity, reliability and feasibility. However the emphasis upon linking assessment to learning and performance improvement has led to recognition that the consequential validity of these assessments; i.e., their ability to produce the desired outcomes with respect to performance change and learning, needs also to be considered.^{2,7,17}

PROVISION OF ASSESSMENT FEEDBACK

The second step, provision of the assessment feedback to the recipient includes two components, the feedback content and the process of providing it. Research in cognitive psychology and medical education inform criteria for both components.¹⁸⁻²² Effective feedback *content* should be clear, mutually understood by both receiver and provider, specific, and relevant to the recipient’s practice. With regard to *process*, effective feedback is timely, offered in an interactive and non-judgmental manner, accompanied by explanation to increase understanding and use, recognizes the recipient’s perspectives and feelings, and fosters the development of an action plan. In medical education, performance feedback is frequently reported to be incomplete and too

general or too late to be helpful.²³ Residents reported never or infrequently receiving corrective feedback from their attending physicians²⁴ and when it was received, they reported that concerns regarding faculty credibility influenced their receptivity to the feedback.²⁵ Faculty, especially in clinical settings, often do not recognize the potential of feedback as a developmental and learning tool, and rarely facilitate reflection upon feedback and experiences to promote learning.²⁶ Clinical faculty are often uncomfortable giving negative feedback and are reluctant to fail the failing student.^{27,28}

USE OF FEEDBACK FOR CONTINUED LEARNING AND PRACTICE CHANGE

The third step in the formative assessment process is the use of the feedback by the physician for learning and change. This too is complex, first requiring understanding of how physicians normally carry on learning throughout their professional lives and factors influencing their learning and changing in practice. Society expects physicians to remain competent throughout their careers. Professional bodies expect them to be lifelong learners capable of assessing their own knowledge, skills and performance to direct their continued learning. The College of Family Physicians of Canada and the Royal College of Physicians and Surgeons of Canada provide continuing education guidelines and programs, and monitor continuing education standards as a requirement for certification for family and specialist physicians, respectively. However, physicians learn in different ways. Most frequently recognized approaches involve learning formally through structured continuing medical education or continuing professional development activities such as lectures and workshops.²⁹ Physicians also learn through informal activities such as reading journals and consulting with colleagues, and through experience. Some of this learning may even be unconscious or implicit and less is known about these types of learning.³⁰⁻³⁵ Considering the domains of professional performance, clinical knowledge and technical skills have been more comprehensively taught, are more explicit in the curriculum and hence perhaps are better understood by physicians, than more recently identified domains like interpersonal skills.³⁵

The expectation is that physicians will use new learning they have acquired to modify their practice behaviour and improve their performance in an appropriate manner. Study of formal continuing medical interventions demonstrates that some interventions appear to be more effective than others in this regard.^{36,37} But physician practice and behaviour, and changing them, are influenced by diverse personal, professional and health system factors as well as by formal and informal learning.³⁸⁻⁴² There is not one guaranteed approach that will bring about change.

In summary, formative assessment can be thought of as three linked steps: performance assessment, provision of feedback, and subsequent use of that feedback for learning and performance change. On the surface the process and each step may appear quite straight forward, but this brief review of the literature in the three areas suggests otherwise. We will now turn to a review of the literature on multi-source feedback and briefly describe below its history and development, within the context of formative assessment.

Multi-source feedback (MSF)

Multi-source feedback, also known as 360-degree feedback, is a type of performance assessment which provides feedback on various tasks and behaviours from various reviewers. Its intent is to be formative and developmental to guide behaviour change and performance improvement.^{8,43} Developed in the business sector, it is a questionnaire-based process involving rating of multiple performance domains and items by various reviewer groups (e.g., supervisors, peers, subordinates, customers) and by self-assessment. It was initiated in response to the growing complexity of managerial and professional performance, and recognition that performance is comprised of several roles or domains and that different reviewer groups can provide different insights into performance of others. It is intended not as a single event but as an ongoing, regular quality improvement process supported by the organization.^{8,43}

Research in MSF in business settings spans the three steps of formative assessment to varying degrees (*assessment of performance, provision of assessment feedback, and use of feedback for learning and change*). In brief, MSF questionnaires use Likert-type rating scales and specific items pertinent to the domain being assessed, and undergo psychometric testing to ensure reliability and validity. Questionnaires are intended for use by reviewers working with the person being assessed and able to observe the behaviour in question. Reviewer training increases understanding of the domains being assessed and of assessment tools and scales.^{8,43} Recipients receive an individual report presenting for each item and domain assessed, their self-assessment scores and mean scores for each reviewer group, and in many cases, scores of a relevant norm group for comparison purposes. Feedback of the compiled report should be facilitated. The role of the facilitator is to maximize feedback acceptance and use and more broadly, to enhance the recipient's self-assessment and reflective capacities, and to promote personal and professional growth.⁴⁴⁻⁴⁶ Recipients of MSF have used their

feedback to change and improve their performance. Various factors appear to influence MSF use, including perceptions of familiarity with reviewers, credibility of process, and relevance of competencies being assessed,^{8,43,47} discrepancies between self and reviewers ratings,⁴⁸ feedback culture,⁴⁹ manner of providing feedback and reviewing feedback with one's reviewers.^{50,51}

In the early 1990's MSF was developed for use with medical residents and internists⁵²⁻⁵⁵ and shortly after this in Canada, the College of Physicians and Surgeons of Alberta (CPSA) developed and standardized the Physician Achievement Review (PAR) MSF program for family physicians.⁵⁶⁻⁵⁹ Other jurisdictions have more recently designed and implemented MSF programs for physicians and residents.⁶⁰⁻⁶⁸ In 2000, the College of Physicians and Surgeons of Nova Scotia (CPSNS) decided to adopt the Alberta PAR MSF program for family physicians.⁶⁹

In medicine, MSF is believed to be particularly appropriate for assessing communication skills and the humanistic and collegial components of performance and professionalism.^{10,12} Reviewer groups for physicians include medical colleagues, coworkers and/ or patients, and self-assessment. Questionnaires for each group are designed to encompass domains best observed by the respective group; e.g., patient questionnaires would include more items addressing how their physician communicated with them, and medical colleague questionnaires would include more on collegial communication and clinical skills. Ratings are compiled into an individual feedback report using tables and graphs to present the individual's and aggregate mean scores for each reviewer group, and self-assessment scores. Through comparing their own and group scores, the expectation is that recipients will have a clearer sense of their current performance, identify needs for continued learning and improvement, and act accordingly by developing and implementing plans to meet these needs.

Research in MSF in medicine has focused on the first step of formative assessment, *assessment of performance* and particularly, assessment measures. MSF instruments require careful and thorough development and assessment of their psychometric properties to ensure reliability, generalizability and validity.⁵⁹ Instrument reliability assessed using Cronbach's alpha to determine internal consistency has been found to be high; i.e., >.90.⁵⁷⁻⁵⁹ Generalizability analysis is a more sophisticated assessment of reliability and determines whether an instrument includes sufficient raters and items and identifies sources of error. Within MSF research, a minimum generalizability coefficient of .70 has been consid-

ered appropriate.^{52,54,57} Achieving this level appears to be influenced by two factors. The first is the domain being assessed; e.g., more attending physician raters were needed to reliably assess residents' patient relationships than their clinical competence.⁵⁵ The second is the nature of the relationship of the raters with the physician; e.g., more patients than nurses or attending physicians were needed to rate residents.⁵⁵ Similarly, Ramsey et al,⁵² assessing a group of physicians, achieved a generalizability coefficient of .70 with an 11-item scale and 10-11 peer physician raters, while Wenrich et al⁵⁴ required 10-15 nurses to achieve .70 with a 13-item instrument assessing the same group of physicians. For the Alberta College of Physicians and Surgeons PAR MSF instruments, the MSF program used in this research, Violato et al achieved .70 with longer instruments and fewer raters for medical peer colleague reviewers (6 raters, 26 items), coworkers (6 raters, 17 items) and for patients, 22 raters and 45 items.⁵⁷

Efforts to ensure the face and content validity of instruments have included involving the target population and content experts in their design and development.^{59,63,68} As each group observes behaviours differently, questionnaire items should be appropriate for each specific reviewer group⁵⁵ and low correlations among reviewer groups suggest that each provides unique data.^{52,54,68} These findings lend support to the construct validity of items and questionnaires. Few measures of criterion validity of MSF; i.e., its correlation with other measures of the same domain, ideally a "gold standard", have been conducted in medicine but researchers identify the need for this and suggest viable ways to do it.^{57,60,68} Regarding consequential validity; i.e., the use recipients make of their feedback, physicians have reported using their MSF for performance improvement, but these studies did not explore factors influencing use.^{62,65,70} In medicine, the feedback process may be facilitated⁶⁵ or not^{57,62,68} but the influence of facilitation upon feedback use has not been studied. A recent review of instruments for peer assessment of physicians, including MSF instruments involving peers, identified the need for further assessment of their validity.⁷¹

Of interest, MSF requires the use of both peer and self-assessment, skills which to date have not been especially well taught or practiced in medicine.⁷¹⁻⁷³ Although in medical education and practice we freely refer to using and developing "self-assessment" skills and consider them a requirement for lifelong learning, a recent review demonstrates that self-assessment is not well conceptualized and requires extensive further study.⁷² An earlier important study of self-assessment suggested that individuals with the least knowledge and skill; i.e., those with the greatest need for improvement, may be most at risk for incorrectly self-assessing their performance

strengths and weaknesses. But, informing these individuals about the domain in question and increasing their competence in it, can increase their insight and ability to self-assess.⁷⁴ Feedback is crucial in helping learners develop accurate self-assessment within a domain.⁷⁵

Peer assessment by medical colleagues can make a valued contribution if proper training is provided and clear criteria developed.⁷⁶ A strength of peer assessment compared to assessment by a sole faculty member or preceptor is that several assessments are aggregated, adding to the reliability of the rating. However, in spite of this, van Rosendall and Jennett⁷⁷ found that residents were reluctant to become peer assessors as they felt the assessor role undermined peer collegial relationships. Freidson suggests that physicians are reluctant to provide constructive feedback to colleagues due to the collegial nature of the medical profession.⁷³ These findings are supported by more recent research with medical students.^{78,79} Evans and Elwyn called for caution when involving peers in assessing complex domains such as humanism, querying the number of peers who realistically have adequate knowledge of another to make informed decisions in this domain. They also emphasized the centrality of perceived fairness and credibility of assessment procedures to feedback acceptance and consequential validity, and suggested that when assessment lacks fairness and credibility, even face validity can be lost.⁷¹

In summarizing the literature, we return to the three-step model of formative assessment, *assessment of performance, provision of assessment feedback and use of feedback for learning and change*. MSF research within business settings conducted by organizational and cognitive psychologists has investigated each of the three steps. Their study contributes to the psychometric rigour of assessment measures and provides direction for more intensive study of the last two steps, particularly the influence of feedback facilitation and other factors upon MSF use. Within medical education, most MSF research has been limited to the first step, the testing of MSF assessment measures, and little research has addressed the provision of assessment feedback and the use of MSF for learning and change.

MSF for physicians in Nova Scotia: Research context, questions and overview

This thesis investigates the final step of formative assessment, "What use is made of MSF for learning and practice change?". We study the experiences and use of MSF by family physicians in one Canadian province, Nova Scotia.

RESEARCH CONTEXT

In 1996, the Federation of Medical Regulatory Associations of Canada developed a comprehensive model for the Maintenance and Enhancement of Professional Performance (MEPP). Constructivist in nature, it is based upon the three steps of formative assessment and includes conducting a performance assessment and providing feedback on the assessment to enable its use for performance improvement.⁸⁰

In Canada, the College of Physicians and Surgeons in each province is the regulatory body legislated to monitor physician performance and ensure public safety. To achieve this, the College of Physicians and Surgeons of Nova Scotia (CPSNS) had until recently used peer office review, a process by which 2 physician peers visited a physician's office and conducted a detailed assessment of medical record keeping, clinical care as reflected in medical records, office facilities and administrative procedures. While a thorough process, it was resource intensive and limited in impact as only about 40 physicians a year could be assessed, and the process provided little feedback to the physician. Consistent with changing philosophical perspectives on physician assessment, the CPSNS wished to adopt a more formative approach based on the principles of quality improvement, to inform and enhance the practice of all NS physicians. The College of Physicians and Surgeons of Alberta (CPSA) had recently developed and standardized the Physician Achievement Review (PAR) MSF program for family physicians.^{57,58} Working with the Universities of Calgary and Alberta through a comprehensive consultative process involving physicians, patients and other health care professionals, and extensive psychometric testing and analysis of tools, the CPSA had developed and refined broad categories of physician performance domains and specific questionnaire items within those domains.^{57,58} More recently, using a similar process, the CPSA has developed and implemented PAR programs for surgeons,^{81,82} pediatricians,⁸³ anaesthetists⁸⁴ and international medical graduates.⁸⁵

In 2000, the CPSNS decided to adopt the Alberta PAR MSF program and initiated an extensive testing, communication and orientation process prior to its implementation. They invited the Office of Continuing Medical Education, Dalhousie University to conduct research related to program feasibility, acceptance and outcomes. Importantly, CPSNS also viewed the research as an opportunity for NS family physicians to anonymously share their concerns and suggestions for the implementation of MSF in the province.

In the PAR MSF program, physician participants identify 8 medical colleague and 8 coworker reviewers, and are instructed to randomly select 25 patient reviewers. Physicians receive an orientation to the program and all reviewers receive brief written guidance for completing questionnaires, but formal training in using the questionnaires is not provided. Reviewers rate physicians on multiple questionnaire items using a five-point Likert scale and an "unable to assess" option. Participating physicians complete a self-assessment questionnaire using the same items as the medical colleague questionnaire. Performance domains include communication with patients, collegiality and communication with medical colleagues and coworkers (team communication), professional self-management, clinical competence, and practice management. Of 40 items on the patient questionnaire, just over half address physician-patient communication and information-sharing, and the remainder, practice management and professionalism issues. For the medical colleague questionnaire, the 31 items are divided more or less equally among the patient communication, clinical competence, coworker and colleague communication, and professional self-management domains. Of the 17 items on the coworker questionnaire, 8 address communication with patients and 9, collegiality and coworker and colleague communication.

Participants receive their compiled feedback by mailed confidential report providing individual mean scores for each item by reviewer group, and individual and aggregate means scores and ranges in graph format for each domain. It also provides a table presenting their self-assessment scores with means of their medical colleague and aggregate medical colleague scores. Scores above the 90th percentile are noted by a small "commendation" flag, and below the 10th percentile plus a score less than "4", a small "information" flag. Feedback is not facilitated, but participants can request assistance with their reports by contacting the CPSNS or the Dalhousie University Office of CME. The CPSNS MSF program (entitled NSPAR, Nova Scotia Physician Achievement Review) questionnaires and report format are included in Appendix A and are available on the CPSNS website at www.nspar.ca.⁵⁶

RESEARCH QUESTIONS AND OVERVIEW OF STUDIES

By studying the question, "What use do physicians make of MSF for learning and practice change?", we believed we could contribute to the understanding of MSF as a means for performance assessment, feedback, learning and change. We proposed studying physicians' responses to their feedback and the kinds of use they made of it, and the influences upon these uses. We also proposed studying physi-

cians' usual strategies for continued learning in practice as we believed that understanding how they learned in practice could inform the use of MSF for learning.

The first broad research question explored physicians' responses to MSF. Specific questions were:

1. How did physicians use their MSF for learning and practice change?
2. What conditions influenced their use of MSF for learning and practice changes?

The second broad question explored how physicians learned in practice. Specific questions included:

3. How did physicians perceived to be performing well learn in practice?
4. How does this learning compare with the learning and responses to MSF described by physicians receiving negative feedback?

As little evidence was available in these areas, we chose exploratory investigative approaches and conducted several studies. Chapters 2, 3, 4, 5 describe studies addressing research questions 1 and 2 regarding physicians' use of MSF and conditions influencing use. Chapter 2 describes the feasibility study for the MSF program and is primarily quantitative in nature. It was undertaken to explore physician participants' initial responses to MSF, including their assessment of its value and that of the contributions of each reviewer group, and their use of the feedback for practice change. It also assessed reviewers' responses to MSF.

Results from the study in Chapter 2 led to the design of a qualitative study described in Chapter 3, to explore in more detail findings related to physicians' responses to, valuing of and use of their MSF feedback, and the influences upon these. We conducted focus groups with three groups of physician participants two to three months after they had received their feedback reports in the mail. The findings of Chapter 3 illuminated the complexity of the processes under study and led to awareness that multiple factors influenced responses to and use of feedback from MSF. Also of note, the findings highlighted physicians' sensitivities to participating in MSF and using the feedback they received.

The results of the study reported in Chapter 3 pointed to the need for further in-depth exploration of physicians' uses of MSF and the factors influencing these. We recruited a larger purposive sample of family physicians who had participated in the

feasibility study, to represent participants who had received scores across the range from high to low. We conducted interviews with 28 physicians for the studies reported in Chapters 4 and 5. Building upon Chapter 3, the purpose of the study in Chapter 4 was to increase understanding of the specific feedback and domains of performance which stimulated physicians to use their feedback and undertake learning and/or practice change, and the factors influencing use.

The purpose of the study reported in Chapter 5 was to explore in more depth physicians' sensitivities to MSF. Several physicians in the Chapter 3 study who had received negative feedback had responded with negative emotion and were very reflective about the MSF process and their reports. This study explored emotional and reflective responses to MSF, the sources of these emotions and their influence upon accepting and using the feedback.

In Chapter 6, we undertook a qualitative study to address the third research question, "How do physicians learn in practice?". We conducted in-depth interviews with 12 family physician participants receiving high scores in the MSF feasibility study. We reasoned that the learning approaches reported by physicians rated highly by their medical colleagues, coworkers and patients (i.e., physicians seen to be performing well) could offer insights into successful approaches for continued learning and maintaining competence. We were particularly interested in how these physicians learned in practice and maintained their competence, and how they learned about the interpersonal or communications skills domain specifically.

In Chapter 7, Conclusions and Discussion, we summarize our findings in response to research question 1 regarding how physicians used MSF for learning and change and the conditions influencing this. We also summarize our conclusions to the first part of research question 2, how physicians seen to be performing well learn in practice. We then answered the second part of research question 2 by comparing ways of learning described by these physicians to learning responses described by physicians receiving negative MSF, identified salient points and discussed them in light of the literature on learning. Synthesizing the findings of both research questions 1 and 2, we propose two models for clarifying understanding of physician use of MSF, and a third model which suggests the addition of a new step to the current three-step view of formative assessment. Finally, we suggest implications of our conclusions for medical education and assessment practice and research in MSF.

We remind our readers that this thesis was based on journal articles, and therefore, some repetition of content across chapters is unavoidable.

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Chapter 2



Responses of rural family physicians and their colleague and coworker raters to a multi-source feedback process: A pilot study

Published as:

Sargeant J, Mann K, Ferrier S, Langille D, Muirhead P, Sinclair D. Responses of Rural Family Physicians and their Colleague and Coworker Raters to Multi-source Feedback: A Pilot Study. *Acad Med.* 2003; 78(10 Supplement):S42-44.

Abstract

PURPOSE: To describe responses of family physicians, their medical colleagues and coworker raters, to a multi-source feedback assessment process.

METHODS: Data collection tools included multi-source feedback self-assessment and medical colleague, coworker and patient rating forms; and program evaluation physician and rater questionnaires.

RESULTS: 142 physicians and their raters completed the pilot study; 113 (80 %) physicians completed evaluations. Positive correlations were found between familiarity scores and medical colleague and coworker mean ratings. Peer medical colleagues were significantly more familiar with physicians than consultants. Consultants were unable to rate items most frequently. Physicians disagreed with colleague feedback more frequently. Agreement was positively correlated with scores.

CONCLUSIONS: Familiarity, ability to observe physicians appropriately to rate them, and physicians' responses to feedback are factors to consider when using multi-source feedback.

Introduction

Medicine is accountable to the public for ensuring the provision of competent, appropriate care, yet many physicians have limited opportunities to receive formal performance assessment feedback. Licensing and professional organizations are developing assessment approaches for screening of all physicians. A basic premise of these programs is quality improvement by providing formative feedback for continuing professional development. The challenge is to use valid, reliable, systematic, cost-effective processes that also facilitate professional development.

Multi-source feedback, also known as 360-degree feedback, is a questionnaire-based process developed in the private sector. Using medical colleagues, coworkers and/or patients, it is a valid and reliable means of assessing and providing feedback to physicians.^{1,2,3,4,5,6} Feedback stimulates practice improvement.^{7,8} It is especially appropriate for assessing communication skills, the humanistic and collegial components of physician practice, which are attributes of performance both important and under-assessed.^{9,10}

Findings from studies that investigate the association between rater familiarity and physician scores are inconclusive.^{1,5,6,8} Physician selection of raters does not appear to bias results.¹ Low correlations among rater groups suggest that each provides unique data^{1,5,8} and therefore questionnaire items should be appropriate for specific raters.³ Responses to performance appraisal feedback vary with about one-third of recipients improving their behaviour.¹¹ Improved behaviour can result from both negative and positive feedback, but negative feedback alone tends to result in discouragement and lessened motivation.^{12,13}

The College of Physicians and Surgeons of Nova Scotia (the College) undertook a pilot study using the multi-source feedback program of the College of Physicians and Surgeons of Alberta, known as the Physician Achievement Review (PAR). Specific study questions dealt with the responses of physician volunteers and their medical colleague and coworker raters to the Alberta review process and tools. They were: (1) What were raters' responses to the review? (2) Are the family physicians known well enough by a sufficient number of medical colleagues and coworkers, so that the physicians may be rated appropriately? (3) What were physicians' responses to the process generally, each rater group and their feedback?

Method

The Dalhousie Office of Continuing Medical Education (Dalhousie) conducted the study, and invited all family physicians practicing in Nova Scotia for five years or more (N=709) to participate. Two sets of data collection tools were used. The first were the standardized rating forms of the Alberta PAR process; i.e., a 31-item self-assessment rating form completed by each physician, and rating forms completed for each physician by 25 patients (40 items), 8 medical colleagues (31 items), and 8 non-medical coworkers (17 items). All used 5-point Likert scales, with an additional “unable to assess” (UA) option. Colleague and coworker forms also asked how well the rater knew the physician. The second set of tools included program evaluation questionnaires for physicians and raters developed by Dalhousie CME. The medical colleague /coworker program evaluation included 8 closed items addressing relationship, familiarity with the physician, items difficult to answer, and opinions about the review process. The physician program evaluation included 25 closed questions addressing their responses to rater participation, personal feedback report, and general review process. Closed items used “yes”/ “no” responses or a 5-point Likert scale. The research team reviewed tools for content validity. Two family physicians tested the physician questionnaire.

Customer Information Services, which administered the review process for the Alberta College, managed data collection and compiled physician reports from PAR rating forms. Physicians randomly selected patients visiting their office and patients completed rating forms in the office. Physicians mailed contact information for medical colleagues and coworkers to Customer Information Services, which mailed questionnaires directly to them. Physician reports contained individual scores with aggregate mean scores and ranges.

Dalhousie managed data collection and analysis for the program evaluation. Evaluations were distributed to raters and physicians. Respondents mailed completed program evaluations to Dalhousie.

Analyses, using SPSS, included descriptive statistics for Likert scales; frequency distributions for non-continuous data; analysis of variance to determine effects of raters’ familiarity with or relationship to the physician on mean PAR scores; Pearson correlations to determine relationships between scores and physicians’ evaluation responses, and scores and raters’ familiarity; and stepwise regression analysis to examine variability in mean scores. Findings significant at the $p < .01$

level are reported. Internal consistency of PAR rating forms was calculated using Cronbach’s alpha.

Results

The pilot sample comprised 142 physician volunteers who completed PAR rating forms and received reports. Of these, 113 (80%) also completed the program evaluation. Volunteers were similar to the provincial family physician population (males 71% vs. 64%; 65% vs 60% were aged 41-55 years; 79% of both populations graduated from medical school between 1970-1989), except more worked in rural areas (71% vs. 45%).

For the 142 physicians, the anticipated sample for each of medical colleagues and coworkers was 1136 (142 physicians x 8 raters). For medical colleagues, 930 (82%) completed PAR rating forms and 855 (75%) completed program evaluations. For coworkers, 964 (85%) completed rating forms, 959 (84%) completed program evaluations.

Similar to other multi-source feedback studies, mean scores on all questions on PAR rating forms were high (>4.0 for 85 of 88 items). Scales demonstrated strong internal consistency with Cronbach’s alpha >.90.

Medical colleagues (N= 799, 86%) and coworkers (N= 935, 97%) believed that the review process was helpful for providing physicians with feedback about their practice. Colleagues (N= 768, 89%) and coworkers (N=912, 95%) felt comfortable or somewhat comfortable with the process.

Table I presents levels of familiarity of medical colleagues and coworkers with the physicians, and means of their PAR scores. ANOVA revealed a significant positive effect of familiarity on mean scores for both rater groups ($p < .001$). Scheffe post hoc analyses identified that colleagues and co-workers knowing physicians well or very well gave significantly higher scores than those knowing them somewhat well ($p < .001$). Those knowing physicians very well gave higher scores than those knowing them well ($p < .001$). Medical colleague relationship; i.e., whether a peer or consultant colleague, also had a significant effect on familiarity scores: peers (N=301) were significantly more familiar with physicians than consultants (N=288)

Table 1: Rater familiarity ratings and Physician Achievement Review (PAR) scores

Familiarity rating	Medical Colleagues (n=930)		Coworkers (n=964)	
	N (%)	Mean (SD)	N	Mean (SD)
Not Well	11 (1.2%)	3.87 (.6)	2 (.1%)	4.03 (1.0)
Somewhat	122 (13.1%)	3.90 (.5)	111 (11.5%)	4.06 (.6)
Well	333 (35.8%)	4.26 (.5)	343 (35.6%)	4.33 (.5)
Very Well	262 (28.2%)	4.41 (.5)	276 (28.6%)	4.63 (.4)
No familiarity rating	202 (21.7%)	4.33 (.6)	232 (24.1%)	4.48 (.5)

($p < .001$). Stepwise regression analysis revealed that familiarity accounted for 12.7% of variance in coworker mean scores and 11.0% for medical colleagues.

Both medical colleagues and coworkers responded “unable to assess” to some rating form items. For coworkers, only one item, “use of community resources for psychological illness” received “UA” from more than 30% of raters. For medical colleagues (Table 2), however, consultant physicians were unable to assess significantly more of the 31 items (21%) than peer physicians (9%) ($p < .001$). Over 30% of consultants responded “UA” for nine items, three in the “psychosocial management of patients” attribute. In the evaluation, 44% of medical colleagues and 24% of coworkers reported difficulty answering questions, mainly because the item was “not applicable to relationship with physician.”

Physicians completed the program evaluation after reviewing personal reports of their PAR scores. They agreed that, of the three rater groups, patients were most appropriate to assess their practice, and further, they agreed most strongly with patient feedback. For coworkers, 89% agreed with their inclusion, 81% were comfortable recruiting, 80% agreed with their results, and 20% had difficulty recruiting them. Responses to medical colleagues, however, varied: 91% of the physicians agreed with inclusion; 79% were comfortable recruiting; 66% agreed with results; and 18% had difficulty recruiting. Physician agreement with colleagues’ scores correlated positively with overall mean scores from colleagues ($r = .48$, $p < .001$). Associations were found between receiving high scores and agreement with colleague feedback, and receiving lower scores and being neutral to or disagreeing with these results.

Table 2: Number (%) of “unable to assess” (UA) responses to Physician Achievement Review (PAR) rating form items, by more than 10% of medical colleagues

Rating form item	N (%) of Unable to Assess		
	All medical colleagues (N=930)	Peers only (N=340)	Consultants only (N=325)
Clinical competency:			
Perform technical procedures skillfully	308 (33.1%)	58 (17.1%)	154 (47.4%)
Consultation communication:			
Handles transfer of care	96 (10.3%)	25 (7.4%)	47 (14.5%)
Communicates referral information to patients	211 (23.1%)	107 (31.5%)	62 (19.1%)
Provides understanding for patient care responsibility	98 (10.5%)	49 (14.4%)	34 (10.5%)
Patient interaction:			
Communicates effectively with patient’s family	171 (18.4%)	36 (10.6%)	82 (25.2%)
Maintains confidentiality	178 (19.1%)	22 (6.5%)	104 (32%)
Respects patient’s rights	109 (11.7%)	13 (3.8%)	59 (18.2%)
Professional Self Management:			
Maintains quality medical records	274 (29.5%)	38 (11.2%)	158 (48.6%)
Involved with professional development	176 (18.9%)	21 (6.2%)	99 (30.5%)
Accepts responsibility	104 (11.2%)	19 (5.6%)	50 (15.4%)
Manages resources efficiently	161 (17.3%)	38 (11.2%)	81 (24.9%)
Manages stress	283 (30.4%)	45 (13.2%)	153 (47.1%)
Aware of shortcomings	195 (21.0%)	37 (10.9%)	101 (31.1%)
After hours call system	139 (14.9%)	12 (3.5%)	79 (24.3%)
Psychosocial Management of Patients:			
Recognizes psychological aspects of illness	137 (14.7%)	12 (3.5%)	77 (23.7%)
Makes appropriate use of community resources for psychological aspects of care	343 (36.9%)	59 (17.4%)	183 (56.3%)
Appropriate referral for psychological aspects of illness	378 (40.6%)	61 (17.9%)	207 (63.7%)
Manages patients with complex psychosocial problems	331 (35.6%)	53 (15.6%)	177 (54.5%)

Most physicians (N=100, 89%) believed the report provided useful information, and 61% indicated they had or planned to make practice changes in response. Of 75 changes identified, almost three-fourths addressed communication, mainly with patients but also with medical colleagues and coworkers. Most frequently identified changes concerned written communication (n=14), patient phone communication and availability (n=11) and patient wait times and accessibility (n=10).

Mean scores, demographic variables, and agreement with feedback did not differ between those who did and did not report they would make changes.

Discussion

The purpose of the pilot study was to explore the responses of physician volunteers and their raters to a multi-source feedback process. This sample included family physicians, similar to the Alberta sample (83% family physicians), while other samples were internists.^{1,2,5,6} Only 28% of respondents lived in communities larger than 50,000, while in the Alberta study, 65% lived in urban areas. Rural representation is a unique feature of our study. Although Nova Scotia is predominantly rural, 55% of family physicians practice in urban areas. The sample was otherwise representative of provincial family physicians, although the volunteer nature of participants also limited the study.

Familiarity was positively associated with scores; i.e., raters knowing physicians well rated them higher. This differs from findings of the Alberta pilot study,^{6,8} which reported no relationship between scores and familiarity, but is consistent with internist studies which found low but significant positive correlations between familiarity variables and scores.^{1,2,5} Familiarity explained 9% of score variability in Ramsey's study 1 and 11% to 13% in this study. Familiarity appeared especially influential for consultant medical colleagues, who knew physicians less well than peers. Additionally, they were unable to assess 21% of rating form items and over 45% could not assess the same six items, mainly because items were not pertinent to their relationships. By comparison, less than 10% in the Alberta review program pilot study could not assess items.⁶ This highlights a primary tenet of multi-source feedback; i.e., that raters must be able to observe physicians in order to rate them. Nova Scotia consultants may be constrained by the province's rural nature, as most work in urban areas and may only know referring family physicians through referral letters. It may be helpful for raters to indicate the nature and degree of familiarity with the physician being reviewed on the rating form, as long as confidentiality is maintained. Also, frequently identified "UA" items could be excluded; however, their inclusion stresses their importance for physician practice. Alternatively, a specific questionnaire could be created for consultants, but this has implications for rater recruitment and was deemed impractical in the Alberta pilot study.⁶ In summary, our findings related to familiarity and frequency of "unable to assess" items in a provincial setting suggest the need for

further research regarding factors that construct familiarity in relationships between rural family physicians, peers and consultants, and use of these factors in multi-source feedback.

The goals of multi-source feedback are to provide physicians with a broad perspective of their practice and encourage professional development. Over 60% of respondents indicated that, stimulated by feedback, they either had already made changes or intended to do so. These proportions were similar to earlier reports.^{5,7} Physicians agreed with feedback from medical colleagues less than that of other raters and agreement decreased as scores decreased. A better understanding of this would be instructive. Understanding the potential detrimental effects of negative feedback also emphasizes the need to ensure valid results and consider the method of providing feedback.^{13,14} Currently, physicians being reviewed receive feedback in isolation as a written report. Incorporating features of effective feedback, perhaps through a facilitator, may enhance the acceptance of feedback.

Notwithstanding sample limitations, this pilot study highlights advantages and disadvantages of using multi-source feedback for family physicians and continuing professional development in a rural area. It suggests important areas for further research: assessing and reporting rater familiarity, understanding disagreement with feedback, and using multi-source feedback to facilitate physicians' professional development.

Acknowledgements

We acknowledge financial support of the College of Physicians and Surgeons of Nova Scotia; administrative support of Customer Information Services, Alberta, and review of our paper by Jocelyn Lockyer PhD and Cees van der Vleuten PhD.

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Chapter 3

Exploring family physicians' reactions to multi-source feedback: Perceptions of credibility and usefulness

Published as:

Sargeant J, Mann K, Ferrier S. Exploring family physicians' reaction to MSF performance assessment: perceptions of credibility and usefulness. *Med Educ*. 2005; 39:497-504.



Abstract

PURPOSE: Physician performance is comprised of several domains of professional competence. Multi-source feedback (MSF) or 360-degree feedback is an approach used to assess these, particularly the humanistic and relational competencies. Research studying responses to performance assessment shows that reactions vary and can influence how performance feedback is used. Improvement does not always result, especially when feedback is perceived as negative. This small qualitative study undertook preliminary exploration of physicians' reactions to MSF, and perceptions influencing these and the acceptance and use of their feedback.

METHODS: We held focus groups with 15 family physicians participating in an MSF pilot study. Qualitative analyses included content and constant comparative analyses.

RESULTS: Participants agreed that the purpose of MSF assessment should be to enhance practice and generally agreed with their patients' feedback. However, responses to medical colleague and coworker feedback ranged from positive through negative. Several participants who responded negatively did not agree with their feedback nor were inclined to use it for practice improvement. Reactions were influenced by perceptions of accuracy, credibility and usefulness of feedback. Factors shaping these perceptions included: recruiting credible reviewers, ability of reviewers to make objective assessments, use of the assessment tool, and specificity of the feedback.

CONCLUSION: Physicians' perceptions of the MSF process and feedback can influence how and if they use the feedback for practice improvement. These findings are important, raising the concern that feedback perceived as negative and not useful will have no or negative results, and highlight questions for further study.

Introduction

Physician performance is multi-faceted, comprised of a number of domains of professional competence. Among these, knowledge and basic skills have traditionally been more adequately taught and assessed than the integrative, relational, affective, and reflective aspects of professional competence.¹ Recently, 360-degree or multi-source feedback (MSF) has been introduced as a formative assessment and quality improvement approach to enhancing performance in multiple domains of practice.^{2,3} A questionnaire-based process using self-assessment and medical colleague, coworker, and/or patient reviewers, MSF can be an effective means of assessing residents and physicians⁴⁻⁹ and has stimulated practice improvement.^{10,11}

However, performance assessment is not simply an objective, cognitive process. The following quote, although dated with respect to gender, reminds us of its affective component: "Performance appraisal touches on one of the most emotionally charged activities in work life – the assessment of a man's contribution and ability. The signals he receives about this assessment have a strong impact on his self-esteem and subsequent performance." Reactions to performance assessment vary and can influence how the feedback is used. Although the intent is to improve performance, improvement does not always result, particularly when feedback is perceived as negative.

Our understanding of these responses is informed by research in organizational psychology. An analysis of over 600 management performance appraisal studies showed that about one-third of the managers improved their behaviour, one-third stayed the same and one-third decreased their performance. Managers receiving negative feedback often became discouraged and not motivated to change.¹³ Assessment results which compared peer rankings tended to generate some loss of positive feelings on the part of those not in the upper part of the distribution, even for those ranked "satisfactory" as compared to those who excelled.¹⁴ Individuals being assessed may not see the need for change when unfavourable performance feedback is inconsistent with self-perceptions.¹⁵ More recently, a study of MSF demonstrated that negative ratings were not seen as accurate or useful, and resulted in negative reactions such as anger and discouragement and not in increased awareness.¹⁶ But, MSF has also been found to be useful, and managers who focused on positive aspects were more likely to improve their own performance.^{17,18}

Various factors appear to influence acceptance of assessment feedback. For managers, these included perceptions of familiarity with reviewers, objectivity of assessment, credibility of process, relevance of competencies being assessed, and manner in which feedback is delivered.² Similarly, medical residents' receptivity to feedback in the clinical setting was influenced by sender credibility, in turn influenced by method of feedback delivery, feedback content, and perceptions of sender characteristics.¹⁹

Within medicine, MSF studies have shown familiarity with colleague and coworker reviewers to be positively associated with scores; i.e., those knowing physicians well rated them higher.^{4,5,9,20} Moreover, physicians' agreement with feedback decreased as their scores decreased,²⁰ and they believed that reviewer bias reduced the credibility of their feedback.²¹ What stimulated these responses? Do these responses influence use of feedback? This small qualitative study was undertaken to explore questions such as these, and, specifically, physicians' reactions to the MSF process and feedback, and perceptions influencing these and the acceptance and use of feedback.

Method

STUDY BACKGROUND

In 2002, the College of Physicians and Surgeons of Nova Scotia (NS) undertook a pilot study of MSF using the standardized process and questionnaires of the College of Physicians and Surgeons of Alberta program, Physician Achievement Review. The goal of this program is formative review and quality improvement.^{22,23} The NS target population was family physician volunteers. Using the program guidelines for reviewer selection, physicians identified 8 medical colleague and 8 coworker reviewers, and randomly selected 25 patient reviewers. Reviewers completed the questionnaires by rating the physician on multiple items, and participating physicians completed similar self-assessment questionnaires. Questionnaires used 5-point Likert scales, with an additional "unable to assess" option. Colleague and coworker forms also asked how well the rater knew the physician. The 142 participants received their feedback by mailed confidential report presenting, in tables and graphs, their individual mean scores compared to the NS aggregate mean scores, for each item and by competency. Scores above the 90th percentile received "commendation" flags, and below the 10th percentile,

"information" flags. The report also compared self-assessment scores with medical colleague scores. Additionally, participants and reviewers completed brief program evaluation questionnaires soliciting their opinions about the MSF process.²⁰

STUDY DESIGN

We used focus groups with MSF physician participants to explore their responses to the assessment. Focus groups enable participants to describe experiences and perceptions meaningful to them and through discussion with others, reflect and respond to those of others, and potentially create new understanding.²⁴

We sent invitation letters to the 113 of the 142 volunteer physicians who completed evaluations to participate in the focus groups. Of 42 from across the province who volunteered, 15 were able to participate in three focus groups, others being prevented by distance, scheduling and funding constraints.

We sent the study questions to participants beforehand, to encourage reflection upon their experiences before the focus groups. We held the focus groups in December 2002, facilitated by two members of the research team. Each was 1-1.5 hours long, audio-recorded and transcribed. The study was approved by the Dalhousie University Research Ethics Board.

DATA ANALYSIS

Focus group questions addressed participants' general expectations of the MSF process, overall response to their feedback and to specific reviewer groups and domains assessed, use of feedback for practice improvement and learning, and overall opinion of the process as a tool for both assessing and enhancing physician performance. Analysis proceeded at two levels using accepted qualitative procedures. Using content analysis, the two researchers facilitating the focus groups independently coded data by question and developed categories describing physicians' reactions.²⁴ They compared findings and resolved any differences. Then, using a constant comparative approach²⁵, one researcher compared and contrasted data in and among categories, to understand linkages and relationships and determine central themes. Although the majority of responses were positive, participant reactions to medical colleague and coworker feedback in particular appeared to be influenced by two central concepts: perceived accuracy of the data

and credibility of the process, and perceived usefulness of their feedback. The second researcher reviewed these conceptual decisions. To confirm them, we carefully re-analysed the data. To further ensure trustworthiness of the analytic process, we compared focus groups findings with participant and reviewer evaluation results.²⁴

Results

Participants were office-based family physicians, including 5 women and 10 men. Six were from urban areas (population > 30,000), and 9 from rural communities, 8 of these with populations of 5,000 or less. They represented 7 of the 9 provincial health districts. Of note, this was an experienced group of family physicians, having graduated from medical school an average of 23 years ago (range 10-39 years).

REACTIONS TO MSF

Participants agreed that the overall purpose of a review process like MSF should be practice enhancement and quality improvement; i.e., to identify ways to help individual physicians improve their practice. But, a few also expressed distrust and concern that it was not being used for quality improvement but to “weed out bad apples.” There was strong consensus that patients as consumers should participate in the MSF process and participants generally agreed with patient feedback.

Responses to feedback received from medical colleagues and coworkers varied. Although the majority viewed this generally as positive and helpful, a few did not, and others questioned particular aspects. Feedback perceived as being strongly negative generally evoked emotional responses, including anger and discouragement. Being surprised, i.e., receiving feedback that differed from self-perceptions, seemed to contribute to this. The following quotes illustrate the scope of responses:

“It was pretty much reasonable throughout, so I must say I didn’t have a huge big surprise. ... I kind of got what I expected.” (Rural 1)

“People probably already guessed I wasn’t very happy with it!! I just sent it around to a half dozen of my colleagues in our end of Nova Scotia, all of whom sent me letters back saying, ‘This is completely off the wall; out to lunch; that’s not how we feel about you at all.’ ... So where’s the validity!” (Rural 2)

The two central emerging concepts; i.e., that these reactions were influenced by perceptions of 1) accuracy and credibility of the data and process and 2) usefulness of feedback, are discussed in the following sections.

PERCEPTIONS OF ACCURACY OF DATA AND CREDIBILITY OF MSF PROCESS

Three factors contributed to perceptions of accuracy and credibility. These included selecting unbiased yet informed reviewers, reviewers’ ability to observe and effectively assess them, and use of the assessment tool.

Selecting unbiased yet informed reviewers.

Selecting coworker and medical colleague reviewers was problematic for many participants. The challenge appeared to be a balancing act, a tension between selecting reviewers who knew them well enough to respond to the questionnaire items and provide a broad perspective of their practice, while avoiding those who knew them so well that responses might be biased. The following quote describes this:

“... you have to have someone who can adequately evaluate you... it may be our responsibility to choose people who know you well enough. But the other side of that coin, is, you don’t want to influence by choosing someone you know. So that’s a real difficult issue, and I don’t know what the solution is. ...I don’t know how to get from one extreme to the other.” (Rural 1)

Strategies to manage this tension varied. Some felt strongly that it was important to choose colleagues and co-workers who knew them sufficiently well. One participant added that he also chose the ones he “knew for a long time and knew what their personalities are like ... the ones who would actually do an honest job.” (Urban 1)

Conversely, others felt that it was important to avoid biased responses. One participant did this by asking his staff to randomly select reviewers. Two others deliberately did not invite colleagues and coworkers they knew well:

“I work in a group of six doctors, but I particularly didn’t want to use all those five doctors who work with me because I felt if this was a proper assessment I wanted a broader view of what was going on.”
(Urban 2)

These three physicians were disappointed by their results: two, because feedback was more negative than anticipated, and one, because insufficient medical colleagues responded to provide a rating for that section.

Reviewers' ability to observe and effectively assess

Central to participants' concerns about recruiting medical colleague and coworker reviewers was the opportunity for reviewers' to observe their performance, to make objective assessments. This ability appeared key to perceptions of credibility and accuracy. It seemed dependent upon practice context and specific performance items being assessed.

Surprisingly, participants' practice setting (rural or urban) or type of practice (solo or group) did not independently determine participants' ability to recruit reviewers who knew them well enough to assess them. Instead, it seemed to be the individual practice context and professional relationships which determined this. Working regularly in a hospital or nursing home seemed to enhance the number and richness of relationships for some. The following quotes describe varying relationships:

“...we have a core of nurses that I work with more hours of the week than I care to recount and the same with our local pharmacists, there’s essentially only three in the area that I deal with. So you do have much more of a working relationship with them ...” (Rural 1)

“... it’s easier for people who are in a community hospital who have a group of people they refer to and deal with every day, to find cohorts who are able to assess you.” (Rural 3)

In contrast, a participant in practice with another physician in a city where family physicians do not have general hospital privileges, described her professional relationships as follows:

“Just a comment on the assumption that because you live in “X” city there’s lots of coworkers. The problem here is that when I send patients with a prescription, they go to one of, I don’t know, hundreds of pharmacies and there’s no one pharmacist that I have a relationship with. There’s no one physiotherapist, there’s no one nurse.” She summarized by saying, “Actually, I’ve heard the comment that ‘there’s nothing as isolated as a city GP’.” (Urban 3)

Another urban physician reflected:

“There’s so many specialists that we don’t always have a close relationship with them. So you don’t know how well they actually know you.” (Urban 4)

Some participants suggested that distance need not be a barrier to assessing performance. They agreed that consultants to whom they referred patients, and communicated solely through referral letters and telephone, could come to know them well enough over time to assess many aspects of their performance. There was the belief that, “They get a pretty good sense of you from your notes...” (Urban 5)

There was consensus across groups that some components of care were infrequently observed and hence more difficult to assess. One of these was the ability to assess family physicians' “management of patient psycho-social issues”, although others suggested that even this was possible to assess at a distance, conveyed through “the flavour of the [referral] letters.” (Rural 5) Another component was record-keeping. One participant questioned the score received for this: “It was a real slap in the face and I don’t know how anybody would really know what my medical records were like!” (Urban 6) Others questioned colleagues' and coworkers' ability to assess “technical competence.” While physicians whose practice included direct patient care in hospitals or nursing homes described being frequently observed by others, physicians who were solely office-based did not have opportunities for others to observe them.

Participants suggested reviewers should be encouraged to use the “unable to assess” option on the scale, if they were unable to observe the behaviour or had insufficient data to assess it objectively. They wanted to be assured that assessments were made as objectively as possible.

Use of the assessment tool

Lack of clarity about interpretation and use of the Likert scale caused some participants to question the objectivity and accuracy of assigned scores, especially if scores were low. Participants who had also been reviewers for others expressed particular reservations: "I would never presume to judge other physicians because I don't know where they're coming from" (Rural 3), or "... you want to positively evaluate people. You don't want to fail them." (Rural 4) They also were concerned about the tendency for reviewers to not discriminate among items and score all the same: "It's a lot easier to put a '3' if you don't want to think about it very much" (Urban 6), or "... if you're a little ambivalent you put '3'." (Rural 1)

Additionally, the concept of "average", and what constituted "being average", appeared unclear. There was general consensus that on a 5-point scale, "3" should be average, "4" above average, and "5" exceptional. Most felt they were average in their performance. However, the aggregate means of scores reported were "4" or above for most items. Hence, if one was scored as "3" it generally fell below the average and created distress.

PERCEIVED USEFULNESS OF THE FEEDBACK

Usefulness of the feedback appeared directly related to credibility and accuracy, and specificity of the feedback. Physicians who agreed with their feedback appeared more accepting of its accuracy and were more likely to consider practice improvements based on that feedback. One participant commented that she "knew her medical colleague reviewers well and hence trusted their assessments." (Urban 4). Another described the process as: "... trying to look at it as a critique as opposed to people being critical. In other words, it was a positive event and the results are to be looked at that way too." (Rural 6) A few gave examples of changes: improving communication with consultants, purchasing a cell phone to increase access for patients, reflecting upon patient information needs following diagnostic tests. Conversely, three who responded negatively questioned the credibility of medical colleague and coworker feedback. Two of these suggested that they would now conduct their own independent practice reviews to see if others agreed with the MSF report, before making any changes to practice.

Equally important, these three, plus a fourth who reported being depressed by negative feedback, did not believe the feedback was specific enough to be helpful.

This was a grave concern for them. For example, the participant concerned about the low score for medical records questioned:

"...But so far as I know none of my colleagues have ever seen my records so I'm left with this sort of pile of cotton wool that's, you know, a big criticism, and what do I do about it?" (Urban 6)

The participant who was depressed described her reactions:

"For about a week I was really depressed and the lowest score I had was, 'Is aware of own shortcomings', on which I got a 3.4. And you know, that's not useful at all. I thought, what shortcomings am I not aware of? There wasn't anything in here to help me, I have no idea where this came from or whether somebody really has a problem with me. Or did several people just think I was average and it kind of evened out lower than the others? ... There's this fuzzy cloud over me, and I have no way of knowing where it's coming from or whether there's anything I can do about it. And that's why I felt very depressed." (Urban 3)

Although physicians who agreed with their feedback did not describe it as being unhelpful, they agreed that more specific feedback would be more useful. Suggestions included adding reviewer comments and examples, especially for items scored at the extremes of the scale. There was strong consensus that using MSF in combination with chart review, as used in the current provincial office peer review, would create a more robust and objective assessment process.

Discussion

This preliminary study describes the reactions of 15 experienced family physicians to multi-source feedback and explores perceptions influencing these reactions. Participants' perceptions of MSF ranged from positive through negative, reflecting results of research in organizational psychology.^{2,16} Several responding negatively did not agree with their feedback nor were inclined to use it for practice improvement. These findings are important, raising the concern that feedback perceived as negative and not useful will have no or negative results.¹⁶ Further study of the influence of physicians' negative reactions to MSF upon acceptance and use of feedback for practice enhancement will be helpful.

Similar to other studies, responses to MSF were shaped by perceived objectivity of the assessment process and credibility of reviewers.^{2,16,19} Credibility was influenced by participants' perceptions of reviewers' familiarity with their practice and ability to make objective assessments. Interestingly, participants who intentionally did not select reviewers who knew them well received disappointing results, illustrating the difficulty of discriminating between reviewers being "adequately familiar" and being biased. MSF was developed for use in organizations where working relationships provided adequate opportunity to observe and assess others, while family physicians work in varied settings. Their working relationships may require further exploration to determine characteristics of credible reviewers. Education of participants and reviewers about the MSF process and tools may also enhance credibility of the process² and reduce common measurement errors such as the "halo" effect and central tendency.^{26,27}

Effective assessment feedback is specific in nature and participants agreed that their MSF report, provided by mailed document and including only numerical scores, was often inadequate to identify needed improvements. This was distressing for some. Adding written comments to explain numerical scores could increase specificity and providing feedback in person could clarify questions and ambiguities. Making available a mentoring service to support physician feedback, reflection, learning and change, can increase acceptance and use of feedback.^{1,28,29} As Epstein and Hundert¹ suggest, "good assessment is a form of learning and should include guidance and support to address learning needs"(p.229). These approaches deserve further investigation.

The study is limited by the small volunteer convenience sample preventing full exploration of concepts. However, consistent with the literature, participants described a broad range of reactions to MSF and findings support earlier results of evaluations of the NS and Alberta MSF programs.^{20,21}

Conclusions

These results suggest that perceptions held by a small group of experienced family physicians of the credibility, accuracy and usefulness of MSF, influenced how, and if, they used their feedback for practice improvement and continued learning. Questions raised by this study include: Will responses and perceptions of a larger, purposeful sample be similar to these? How can we better understand the influence of negative perceptions of feedback upon its acceptance and use? Will

reviewer and physician education about MSF enhance perceptions of objectivity? How can the feedback and the process of providing feedback be improved to enhance practice improvement and continued learning?

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Chapter 4



Challenges in multi-source feedback: Intended and unintended outcomes

For publication:

Sargeant J, Mann K, Sinclair D, van der Vleuten C, Metsemakers J. Challenges in multi-source feedback: intended and unintended outcomes.

Abstract

INTRODUCTION: Multi-source feedback (MSF) is a type of formative assessment intended to guide learning and performance change. However, in earlier research, some physicians questioned its validity and did not use it for improvement raising questions about its consequential validity; i.e., its ability to produce intended outcomes related to learning and change. The purpose of this qualitative study was to increase understanding of the consequential validity of MSF by exploring how physicians used their feedback and conditions influencing use.

METHODS: We used interviews with open-ended questions. We purposefully recruited volunteer participants from two groups of family physicians participating in a pilot assessment of MSF: those receiving high (n=25) and average/ lower (n=44) scores.

RESULTS: Respondents included 12 in the higher and 16 in the average/lower scoring groups. Fifteen interpreted their feedback as positive; i.e., confirming current practice, and did not make changes. Thirteen interpreted feedback as negative in one or more domains; i.e., not confirming their practice and indicating need for change. Seven reported making changes. Most common changes were in patient and team communication; least common, clinical competence. Positive influences upon change included receiving specific feedback consistent with other sources of feedback from credible reviewers able to observe them. These reviewers were most frequently patients.

DISCUSSION: Findings suggest circumstances which may contribute to low consequential validity of MSF for physicians. Implications for practice include enhancing procedural credibility by ensuring reviewers' ability to observe respective behaviours, enhancing feedback usefulness by increasing its specificity, and considering use of more objective measures of clinical competence.

Introduction

The purpose of formative performance assessment is to monitor and inform learners and practitioners about their performance and guide their continued learning and practice improvement. While much has been written about assessment tools and procedures in medical education, less is known about formative outcomes; i.e., learners' and practitioners' use of feedback for continued learning and improvement.¹

While the intention is that assessment feedback will be used for improvement, the relationship between feedback and outcomes is not necessarily linear and feedback does not always achieve the desired results. Positive evaluations have been found to be received more positively and perceived to be more accurate than negative ones,²⁻⁵ and recipients focusing on positive, not negative, aspects are more likely to improve.⁶ A meta-analysis of 600 performance appraisal feedback intervention studies showed surprising results: participants in 1/3 of studies improved, in 1/3 stayed the same, in 1/3 actually decreased performance.⁷ In medical education, a study of the influence of medical student feedback upon faculty performance showed similar findings. For teachers with low ratings, negative feedback actually led to deterioration of clinical teaching practice and lower subsequent scores.⁸

A number of these outcomes represent unexpected and unintended consequences of assessment. Consequential validity is a concept that links the consequences of the assessment, particularly the effects upon learning and improvement, with the assessment itself.⁹⁻¹¹ High consequential validity refers to a positive impact of assessment upon desired learning and improvement outcomes, while low consequential validity refers to unintended and even detrimental outcomes. The latter often occur as the result of negative perceptions of the assessment process held by the person being assessed, including lack of transparency and perceived bias and lack of fairness.¹² For learners and practitioners, such perceptions can evoke negative responses to the assessment and discourage use of the feedback for learning and improvement.

Multi-source feedback (MSF or 360-degree feedback) is a questionnaire-based process using several reviewer groups and self-assessment for formative assessment of multiple performance domains.^{13,14} It was designed for use in settings where reviewers work closely enough with those being assessed to directly

observe their work and interactions with others. Its premise is that assessments are based upon direct observations rather than subjective judgments.

MSF reviewers of physicians' performance have included medical colleagues, coworkers, and/or patients. While studies suggest that MSF is reliable and feasible for physicians and residents, others question its validity.¹⁵⁻²⁰ Evans²¹ recommended that greater attention be paid to the consequential and face validity of MSF to ensure that it produces desired learning and improvement outcomes.

Although earlier studies demonstrated physicians' self-reported specific practice improvements resulting from MSF,^{17,20,22} a qualitative study of responses showed that some physicians responded negatively to their assessment, questioned its validity and utility and hence were disinclined to use it for improvement.²³ The purpose of the current study was to increase understanding of the consequential validity of MSF. Specific objectives were to explore the specific use participants made of their feedback for improvements or change, and the conditions influencing this use.

Method

STUDY BACKGROUND

The College of Physicians and Surgeons of Nova Scotia conducted a pilot study of MSF for family physicians using the standardized Physician Achievement Review program, College of Physicians and Surgeons of Alberta.^{24, 25} Volunteer physician participants identified 8 medical colleague and 8 coworker reviewers, and randomly selected patient reviewers.²⁵ Reviewers rated physicians on multiple questionnaire items and physicians completed a self-assessment. Performance domains included communication, collegiality, professionalism, clinical performance, and office management. Participants received their compiled feedback by mailed confidential report providing individual and aggregate mean scores.

PARTICIPANTS

Using purposeful sampling,²⁶ we identified 2 groups of physicians, those receiving generally high scores from all reviewer groups (n=25), and those receiving generally average and lower scores from reviewers (n=44). We mailed invitations to participate in an interview, to each group. Positive respondents included 12 in

the higher and 16 in the average/lower scoring group. Due to constraints of research funding, interviews were conducted at 2 different times: the high-scorers within one year of receiving their feedback report (Group A) and the second group two years after receiving their feedback report (Group B).

STUDY DESIGN

We used interviews with open-ended and guiding questions to facilitate participants' descriptions of experiences and perceptions meaningful to them and exploration of related interpretations.²⁶ Questions explored their use of their feedback results in each domain and factors influencing this.

Interviews lasted approximately 1.5 hours and were audio-recorded and transcribed. The study was approved by the Dalhousie University Research Ethics Board and conducted in 2003 and 2004 by Dalhousie University Office of Continuing Medical Education.

DATA ANALYSIS

We conducted the analysis as a team using accepted analytical procedures for qualitative data.²⁶ First, using a content analysis approach, we individually reviewed and coded 2 transcripts, then discussed these and developed a coding framework. We used the framework to individually analyze remaining transcripts and met regularly to discuss emerging themes, resolve differing interpretations, and revise the coding structure as required. Secondly, one researcher then compared and contrasted data within and among participants and themes, to determine and interpret relationships and confirm dominant themes, work guided by the research team.

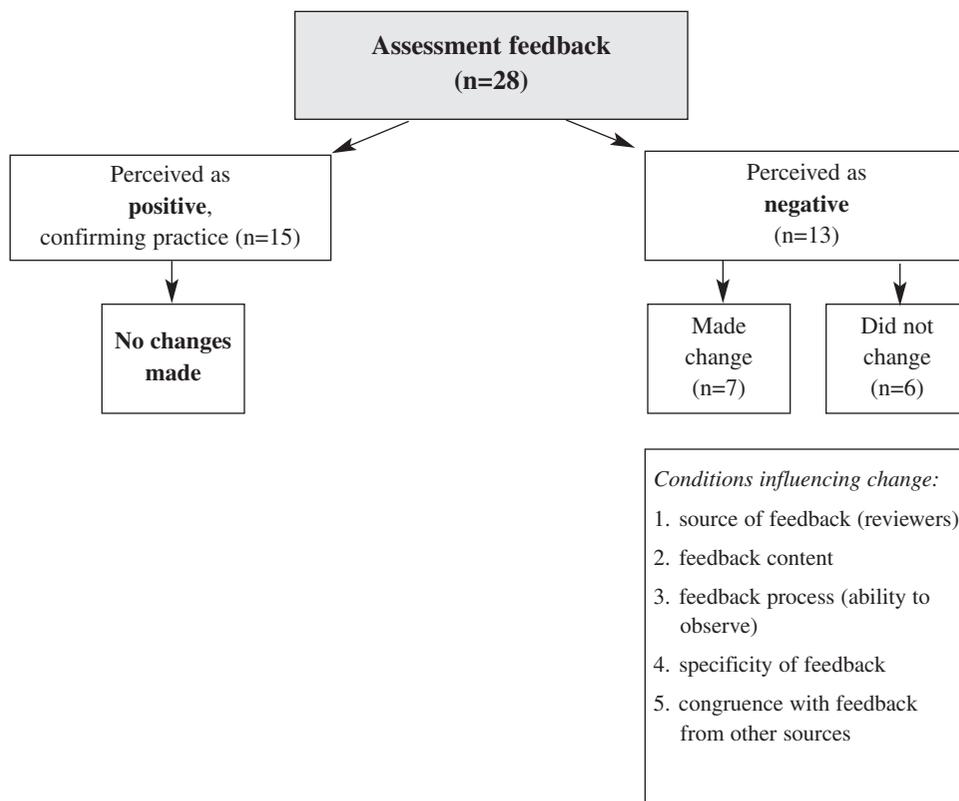
Results

High-scoring physicians were 10 men and 2 women, in practice for an average of 25 years. Five practiced in communities larger than 50,000 and 7 in smaller communities. The 16 in the average/lower group were 12 men, 4 women, in practice an average of 23 years. One practiced in a community larger than 50,000. Compared with the Nova Scotia family physician population, women were under-

represented and rural physicians were over-represented in both groups, with the average/lower group being more rural than the high-scoring group.

Notably, 15 of the 28 participants, comprising all in the high-scoring group and three in the average/ lower group, reported that they interpreted their feedback as generally positive across all domains; i.e., it confirmed their current practices and generally did not indicate a need for change. Hence, this group did not make changes in response to their MSF reports. The remaining 13 physicians, all in the average/lower scoring group, received feedback which they interpreted as negative in one or more specific domains or as generally negative across domains; i.e., as not confirming their practice and indicating need for change. Of these, seven reported making changes in response to their feedback. (See Figure 1)

Figure 1 Summary of influences upon decisions to accept and use MSF for learning or improvement



The following two sections describe the changes participants made and the influences upon their decisions to make these changes. The first section includes only perspectives of the group receiving negative feedback while the second section also includes perspectives of participants receiving positive feedback.

IMPROVEMENTS OR CHANGES MADE

The group receiving negative feedback all reported changes in communication with patients and/or members of the health care team. For communication with patients, they most commonly reported allowing more time for explanation and eliciting concerns:

“I needed to communicate better about the simpler things, you know. After 15 years of practice you get used to – ‘there’s nothing wrong with this person so let’s move on to the next’. Now I spend a little bit more time to explain things better... just an extra minute or two can make such a difference, to listen a bit, to offer suggestions.” (participant 1, group B)

“I thought I explained adequately and that most of my patients would feel comfortable asking me questions if they didn’t understand, but apparently not. Now I ask a lot of people I didn’t ask before – ‘Do you have any questions?’ ‘Is there anything else going on? Anything you didn’t tell me or are afraid of?’.” (participant 11, group B)

Most frequently reported changes regarding team communication were improvements in written and verbal communication with pharmacists. Another physician described how his feedback had influenced him to make broad changes in his communication with colleagues and coworkers within his small hospital:

“Communication within this institution was poor... [As a result of this feedback] I now know everybody’s name and I have a fixed pattern that I take through the building every day - stop at the lab and the X-ray to talk to the techs, have coffee with the radiologist even if only for 3 minutes, I always see people in Emergency. I have gone out of my way to make sure that every opportunity to communicate is there.” (participant 3, group B)

Others described participating in educational activities to enhance communication or other skills. For some, these were formal learning activities; e.g., attending a 2-day out-of-town course at personal expense to improve patient communication skills (participant 16, group B) or record-keeping skills (participant 1, group B). Within the professional domain, one reported seeking private consultation for stress management. (participant 15, group B). Others described informal learning activities; e.g., reviewing student resources for enhancing patient communication (participant 11, group B), observing colleagues' interpersonal interactions at CME events. (participant 14, group B). All reported positive results from their learning. Only one participant reported acting in response to feedback in the clinical domain (participant 15, group B). This was substantive in nature as he described conducting an audit of his patient population to determine common health problems and identify related learning needs.

These changes are significant and reflect the influence of MSF – it can be an effective tool in raising awareness and triggering action in response to an identified need. But it raises questions about why only some physicians changed and the types of changes they made.

INFLUENCES UPON DECISIONS TO CHANGE AND IMPROVE

As noted above, participants receiving feedback generally seen as positive and confirming current practices reported that they did not change. For feedback interpreted as negative, responses were divided and only slightly more than half reported improvements. To understand this we explored the influences upon their decision to change or not to change. These seemed to fall into 3 broad categories:

- source (i.e., reviewer group) and content of the feedback
- specificity of the feedback
- comparison of the MSF scores with feedback from other sources.

Source and content of feedback

The source of the feedback appeared to influence whether or not it stimulated change. Those making changes reported doing so in response to consistent feedback from the 3 reviewer groups (patients, medical colleagues, coworkers), or, notably, in response to patients alone. Further, 6 of 7 participants making changes attended to patient feedback preferentially over that of medical colleagues; i.e., when medical colleague feedback was less favourable than that of patients, they did not respond to it. This was also true for the 6 receiving negative feedback who

did not make changes. They attended to their more favourable patient feedback, not to their less favourable medical colleague feedback.

To explain this, participants observed that physicians feel primarily responsible to their patients:

“... if the patient gives you a bad report, that's different – general practice centers around the patient.” (participant 4, group B)

“I was disappointed in my results until I got to the patient section, which I felt was probably the most important... they seemed quite pleased with what I was doing. But I don't know how my medical colleagues assessed me..” (participant 2, group B)

As the latter quote suggests, the perceived ability of medical colleagues to make the assessments also influenced responses. Participants explained that physician colleagues rarely had the opportunity to observe them in practice:

“When you're asking colleagues to report on the day-to-day practice in this office, you're asking them to answer questions that they have no knowledge of.” (participant 13, group B)

While this concern pertained to behaviours assessed by medical colleagues and co-workers; e.g., patient interaction and psycho-social patient management, it seemed most problematic in the assessment of clinical competence, assessed only by medical colleagues. This presented a conundrum; while there was agreement that physician colleagues were the only group with the required expertise to make clinical assessments, they lacked opportunities to observe their family physician colleagues' clinical performance in their office settings:

“Well, specifically I think they're [medical colleagues] the best to evaluate incompetence. I think the patients, if you're a nice person and you communicate well, you could be doing a lousy job and they're still going to think you're fine. Co-worker interaction is certainly a step up. They certainly would know if you're doing a good, competent job, but I think another physician is going to do best at evaluating more accurately your management of cases, proper use of medications, proper follow-up.” (participant 8, group B)

“It’s very difficult to have an assessment done because we’re rarely observed [by other physicians] in what we do. The people that observe us most closely are our patients and most of them are not in a position to assess aspects of clinical competency.” (participant 16, group B)

Based upon limited opportunities for medical colleagues to observe and assess their clinical competence, participants questioned the capacity of a questionnaire like this to adequately assess clinical competency:

“I think that asking patients to assess the sorts of items that they’re asked is reasonable. Looking at the mechanics of running the office is reasonable. But those are all peripheral issues and the really critical issue that we all want to know is - are physicians providing competent clinical care? That’s the most difficult thing to assess and I don’t know that this tool does that.” (participant 16, group B)

There was general consensus among participants, not just those receiving negative feedback, that clinical competence should not be assessed by MSF. They suggested using a separate objective measure, such as an external or self-administered chart audit comparing individual practice with clinical practice guidelines.

In summary, both the source and the content or domain of the feedback influenced its acceptance. The common determining factor appeared to be perceptions of reviewers’ ability to observe and assess the particular behaviour.

Specificity

There was also consensus that some feedback was not specific enough to guide changes. Again this appeared especially true of the feedback from medical colleagues regarding clinical competence:

“The part that concerned me the most was the evaluation of my clinical ability by other physicians. It was not good. So I’m saying to myself, ‘okay, if that’s really me, then I’ve got to pull up my socks’ - if I knew where. But I have no idea where. And what’s the sense of getting an evaluation if you’re not going to be able to act on what you learned?” (participant 7, group B)

“The biggest problem I found with the whole approach was that there was very little in the way of useful feedback. There was a lot of subjective information but it didn’t really tell you, ‘how am I going to improve this?’” (participant 2, group B)

To illustrate this point, participants critiqued examples of specific questionnaire items. Items used by medical colleagues to assess clinical competency tended to be general in nature; e.g., “Critically assesses diagnostic information”, “Selects the appropriate treatment.” On the other hand, items on the patient questionnaire were more specific; e.g., “Your doctor clearly explained how and when to take your medications”, “Your doctor adequately explained your treatment choices.” Additionally, items related to pharmacist communication, mentioned earlier, were specific; e.g., “Writes prescriptions clearly.” Specific items were more frequently used for improvement.

It appears that, in addition to the source and content of the feedback, the degree of specificity of questionnaire items also influenced their usefulness for change. While those related to clinical competence were less specific and hence less useful, items for the communication domain were more specific and appeared more useful.

Comparison with performance feedback from other sources

Participants receiving negative feedback also spoke of comparing their MSF reports with performance feedback received from other sources, both formal and informal. Several participants who made changes in response to MSF feedback explained how it confirmed other feedback, mainly that received informally from patients, medical colleagues, coworkers and/ or through self-assessment. This strengthened earlier perceptions that improvement may be needed:

“I had sloppy notes and sloppy notes are very dangerous. I knew that. This [MSF] thing made me look at my process of recording what I do... And, I did a course in record-keeping that my colleague recommended.” (participant 1, group B)

Alternatively, physicians who reported not making changes described receiving formal performance feedback on clinical competence that was inconsistent with their negative MSF feedback from medical colleagues. They gave this as a reason for not changing. Three of these physicians (participants 4, 8, 13; group B) shared

with the interviewer formal performance feedback reports received from regulatory or professional bodies recognizing the high quality of their clinical practice. Understandably this caused them to question the accuracy of the clinical section of their MSF report. In fact, two physicians very disappointed in their feedback sought the opinions of community colleagues regarding their ratings on clinical competence. Both reported that their colleagues disagreed with their low MSF scores.

Consistency with other feedback both formal and informal, appeared to influence the decision to use the feedback for change.

Discussion

The purpose of this study of family physicians' use of MSF assessment feedback was to increase understanding of its use and consequential validity; i.e., the intended and unintended outcomes resulting from the feedback. The intended outcome is that MSF will be formative and that feedback, particularly negative feedback, will result in participants' practice improvement and/ or learning. In this study, positive feedback (that confirming current practice) resulted in few improvements. However, negative feedback (that suggesting need for practice improvement) only selectively produced improvements, similar to earlier studies.^{5,7,8,23} In fact, almost half of those receiving negative feedback did not accept it or use it to improve. This study explored the conditions explaining this unintended outcome.

Generally, the initial influence upon decisions to use feedback appeared to be the nature of the feedback; i.e. positive or negative. Positive feedback was easily assimilated by the receiver, but negative feedback led first to an appraisal of its credibility. Participants assessed credibility from several perspectives: the process of making assessments (being observed or not), source of feedback (colleagues or patients), feedback content (clinical or other), specificity of feedback (sufficient to guide change or not) and congruence with performance feedback from other sources (matching or not matching that from other sources).

For participants receiving negative feedback, credibility was most influenced by the perceived ability of reviewers to observe their performance. Participants' changed in response to feedback on a particular behaviour from reviewers who could observe their performance. For these family physicians in office practice,

reviewers most frequently meeting this criteria included patients and least frequently, medical colleagues. Participants changed least in response to reviewers perceived unable to observe performance. In other words, perceived inability to observe contributed to low consequential validity of the feedback.^{10,12,21} Participants recommended that reviewers should not be asked to assess what they could not observe, a recommendation consistent with the design and intent of MSF.^{13, 14}

With respect to the type of improvements made, all who changed reported making changes in communication with patients. This appeared to occur for two reasons, because patients directly observed this behaviour and because questionnaire items for patient communication were specifically worded, providing clear direction for change. These findings are important because they show the potential for change when specific and clear feedback is given. They also suggest the strong influence which direct patient feedback can have upon physician performance.

Conversely, feedback on clinical competence from medical colleagues was perceived as least credible and was infrequently used for improvement. Three factors appeared to contribute to this: their inability to observe the performance of colleagues, lack of specificity of the items, and for some, inconsistency with other sources of assessment feedback. Their appeared to be consensus among participants that clinical competence should not be assessed using MSF. They suggested the use of assessment tools which objectively measure clinical processes and outcomes, such as chart audit.^{27, 28} This is consistent with what is known about the nature of clinical competence; i.e., that it is not a generic skill but is context specific and its assessment needs also to be context specific.

Limitations of this study include the volunteer nature of the participants, both in the initial pilot study and the interviews. Also, the sensitive nature of the research may have prevented complete sharing of negative reactions. The interviewers were staff of the local academic CME office which may have influenced participants to provide more socially desirable responses regarding practice change and learning following MSF. While it was feared that time lapse between receipt of scores and the interviews may have affected participants' ability to remember accurately, the strength of responses from participants and the fact that most had their reports for reference seemed to mitigate this effect.

Our findings suggest that the consequential validity of MSF for physicians may be low under specific conditions and suggest actions to enhance intended outcomes and decrease unintended ones. These actions are in keeping with the philosophical intent and procedural guidelines for MSF,^{13, 29} and include:

Ensure credibility of the process for physician participants. This can be done by including reviewer groups who can observe the behaviour in question, being particularly sensitive to behaviours which medical colleagues are able to observe. This may be more difficult for physicians practicing in isolation, whether in rural or urban setting.²³ Other ways to improve credibility are to orientate reviewers to the importance of using the “unable to assess” questionnaire option for behaviours not observed, and to maintain transparency of the assessment processes.

Ensure usefulness of the feedback by wording items as specifically as possible. MSF programs not currently including patients should consider their addition as patients do directly observe their physicians and their feedback can be powerful. Consider assessing performance in the clinical competence domain using measures other than MSF which can more objectively measure clinical processes and outcomes; e.g., chart audit.

Finally, medical practice and professional competence are multi-dimensional and composed of several domains. Different measure or tools most appropriately assess different domains. MSF can be one helpful tool in the “tool box”.^{1,11,30} Further research will better inform performance domains most effectively assessed by MSF and those which are best assessed by other measures.

Acknowledgements

We are grateful to Suzanne Ferrier MSc, research associate, and Philip Muirhead MD, family physician, for their assistance with data interpretation and analysis. We are also grateful to the College of Physicians and Surgeons of Nova Scotia for their continuing support of our research. The study was funded by research grants from the Medical Council of Canada and the Nova Scotia Health Research Foundation.

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Chapter 5



Understanding the influence of emotions and reflection upon multi-source feedback acceptance and use

To be published as:

Sargeant J, Mann K, Sinclair D, van der Vleuten C, Metsemakers J. Understanding the influence of emotions and reflection upon multi-source feedback acceptance and use.

Abstract

INTRODUCTION: Receiving negative performance feedback can elicit negative emotional reactions which may interfere with feedback acceptance and use. This study investigated the emotional responses of family physicians' participating in a multi-source feedback (MSF) program, the sources of these emotions, and their influence upon feedback acceptance and use.

METHODS: We interviewed 28 volunteer family physicians who had participated in a pilot study of MSF. We purposefully recruited them to represent the range of scores.

RESULTS: Participants' emotional reactions to their feedback appeared to be elicited in response to an internal comparison of their feedback with self-perceptions of performance. Those agreeing with their feedback; i.e., perceiving it as generally consistent with or higher than self-perceptions responded positively, while those disagreeing with their feedback; i.e., seeing it as generally inconsistent with or lower than self-perceptions, generally responded with distress. For the latter group, these feelings were often strong and long-lasting. Some eventually accepted their feedback and used it for change following a long period of reflection. Others did not change and described an equally long reflective period but one which focused on and questioned MSF procedures rather than addressed feedback use. They suggested providing facilitated reflection on feedback to enhance assimilation of troubling emotions and interpretation and use of feedback.

CONCLUSIONS: Negative feedback can evoke negative feelings and interfere with its acceptance. To overcome this, helpful interventions may include raising awareness of the influence of emotions, assisting recipients to focus their feedback on performance tasks, and providing facilitated reflection on feedback.

Introduction

Multi-source feedback (MSF) is a type of formative performance assessment developed in the private sector. It uses questionnaires completed by groups of reviewers who work with the individual, and self-assessment. In medicine, reviewers for physicians and residents generally include medical colleagues, coworkers, and/or patients. Feedback is summarized in a confidential report providing individual and aggregate mean scores from each reviewer group, and personal self-assessment scores. The intent is that recipients learn from their report and use it for practice improvement through reflection upon their own and aggregate scores.

While the purpose of MSF is performance improvement, recipients of performance feedback, especially negative feedback, do not always accept and use it. Receiving negative feedback can evoke strong emotional reactions such as anger, shame, or powerlessness which can negatively influence subsequent behaviour and be long-lasting.^{1,2,3,4} Because performance feedback is personal information about oneself, it is often more difficult to treat objectively, tends to be more emotionally charged and can hurt the recipient's self-esteem and pride.^{5,6}

DeNisi and Kluger⁷ suggest a useful model of performance feedback based upon the internal organization of individuals' performance goals. They propose that performance goals are arranged hierarchically in three levels: the highest is a meta or "self" level where goals relate to self-concept, the middle is a "task" level where goals relate to task performance, and the lowest is a "task learning" level where goals relate to task details and the specifics of performing it. They suggest that negative emotional responses most commonly occur when feedback intended for the "task" or middle level is interpreted at the "self" or meta level. This diverts attention from the task and instead focuses it upon the "self" where it is perceived as a generalized criticism and leads to negative feelings like self-doubt, anger, or frustration. They suggest this has particular implications for MSF, as using comparative data which encourages participants to compare their individual scores with aggregate scores may focus interpretation at the "self" level and away from the "task" level.

Educators looking at formative assessment and feedback more broadly, suggest that receiving feedback mindfully contributes to learning. Mindfulness refers to "a reflective process in which the learner explores situational cues and underlying meanings relevant to the task involved".⁸ Through this reflective process new insights, understanding, and learning are produced.^{9,10,11} Reflection upon emotions

is often overlooked but equally important to learning as reflection upon knowledge, skills and performances.^{9,11,12}

Investigation of physicians' acceptance and use of their MSF reports for learning and practice improvement demonstrates constructive use of MSF, but as in industry, physicians have also disagreed with negative feedback, reported negative emotional reactions, and experienced difficulty assimilating it.^{13,14,15,16} In our recent work exploring physicians' responses to MSF, almost one-third expressed strong negative emotions such as anger and depression in response to negative feedback and reported not using it.¹⁷

This paper extends the investigation of physicians' emotional responses to MSF to better understand when feedback leads to learning and ultimately to behavioral change. Its specific objectives are to explore: 1) their emotional reactions and sources of these reactions; 2) the influence of emotional reactions upon acceptance and use of feedback; and 3) their suggestions to enhance feedback assimilation and acceptance.

Methods

BACKGROUND

In a pilot study of a standardized MSF program undertaken by the College of Physicians and Surgeons of Nova Scotia,^{14,18} 142 volunteer family physician participants completed a self-assessment, identified 8 medical colleague and 8 coworker reviewers, and randomly selected 25 patient reviewers. Performance domains included communication, collegiality, professionalism, clinical performance and office management, each containing multiple items. Participants received individual feedback by confidential mailed report providing individual and aggregate mean scores. Feedback was not facilitated.

STUDY DESIGN

This was a qualitative study using interviews with open-ended question.¹⁹ This type of questioning encourages participants to describe and reflect upon experiences and concepts meaningful to them. Initial questions inquired generally about participants' responses to their feedback. Subsequent questions and facilitative

statements explored and confirmed emotional responses more specifically; e.g., "Could you tell me more about that?", "That sounds like it was difficult for you." Interviews lasted about 1.5 hours and were audio-recorded and transcribed. The study was approved by the Dalhousie University Research Ethics Board and conducted in 2003-2004 by Dalhousie University Office of Continuing Medical Education.

PARTICIPANTS

We purposively identified 69 coded physician reports representing the range of feedback scores (high, average, low), and invited physicians to participate by mailed invitation.¹⁹ Twenty-eight responded positively, 12 in the higher and 16 in the average-lower scoring group. Due to research funding constraints, we conducted interviews at 2 different times: with higher-scoring physicians within one year of receiving their feedback report (Group A) and the second group, two years after receiving their report (Group B).

DATA ANALYSIS

We conducted the qualitative analysis as a team in several phases. Initially we (JS, KM, DS) individually read and coded 2 transcripts using content analysis, discussed these and together developed a coding framework. Using this we individually analyzed remaining transcripts and met regularly to discuss findings, explore emerging themes and resolve differences. Then one researcher (JS) compared and contrasted data among participants and themes to determine and interpret relationships, and to confirm dominant and supporting themes, an iterative process conducted with the research team (KM, DS, CV, JM).

Results

Participants included 22 men and 6 women in family practice for an average of 24 years. Six practiced in communities larger than 50,000; the remainder in smaller communities. Compared to the Nova Scotia family physician population, women were under-represented and rural physicians over-represented.

Physicians' described their emotional reactions to their feedback and sources of these reactions, and explored the influence of emotions upon acceptance and use

of feedback. For many, the culture of the medical profession appeared influential. Finally, they made suggestions for facilitating reflection upon their feedback and their emotional reaction.

EMOTIONAL REACTIONS, SOURCES AND INFLUENCES

Participants described varied and often emotional reactions to their feedback. These appeared to be in response to an internal assessment of their feedback; i.e., “Is it consistent with how I see my performance?.” This internal question seemed fundamental and responses divided participants into two groups: those agreeing with and disagreeing with their feedback. Those agreeing perceived it as generally consistent with or higher than self-perceptions in most or all performance domains and hence positive. Those disagreeing with their feedback saw it as generally inconsistent with or lower than self-perceptions in some or most domains, and hence negative. Importantly, feedback frequently evoked emotional responses. The groups are described below.

Physicians agreeing with their feedback

One group comprised mainly of higher-scoring physicians viewed their feedback positively. It confirmed self-perceptions and current practices, and a number expressed pleasant surprise, a positive emotion, at their high scores:

“You don’t often have someone come tell you how good a doctor you are and what a good job you’re doing. I didn’t really realize how well I had done.” (participant 9, group A)

A smaller group of average/low scoring physicians received feedback which identified specific need for improvement in one or more areas; i.e. negative feedback. They described further reflection upon this feedback, assessing its consistency with self-assessments or data from other sources. Finding it consistent, they appeared to accept and use it for learning and/ or improvement; e.g., “It’s an area I’ve been feeling in need of developing and this supports that.” (participant 16, group B)

Notably, all in this group responded to feedback constructively, accepted it, and used it as intended.

Physicians disagreeing with their feedback

This group was made up of average/ lower scorers comprising about 2/3 of those receiving negative feedback; i.e., feedback indicating need for change. In contrast to the previous group, they reacted with negative surprise and disappointment. Many described strong feelings of distress, sadness, anger, even pain:

“I wasn’t sure it was really me because my assessment of how I practice seemed very different from my report. I looked at all those [negative] flags and thought – ‘I can’t be doing nearly as well as I thought’. And you get a lump in your throat and tightness in your gut when you see that because your expectations were that you were doing much better.” (participant 2, group B)

“I did not get a good report ... I didn’t sleep for several nights after that.” (participant 4, group B)

For these physicians, feedback appeared generally inconsistent with self-perceptions. This caused strong and troubling emotions. All described a long reflective process following initial emotions, and for many the emotion and reflection were still evident during the interview, two years after receiving their report. Some eventually accepted and used their feedback and some did not. Those who eventually accepted their feedback described the emotional nature of their response and their reflections:

“When I got my report, I was taken aback by some of what I saw... painful to read. Your heart rate goes up when you open it because it’s obviously things very core to your self-perception and esteem. First of all you go over it, feel all those push-pull emotions – some things were a lot worse than expected and I felt really bad... So you read the report for 15 minutes and then you throw it in the corner and you go away for a couple of days. And come back and read it again, and that’s when the reflection starts... It’s a bit of a blunt tool and gives you a general direction.” (participant 15, group B)

Another described the dilemma of seeing a need for change yet experiencing difficulties in changing:

“Old habits are hard to change. You get used to doing things a certain way and it’s difficult to change. But, I’d be much happier if my

patients were happier. I felt very hurt by their saying that I didn't spend enough time with them... I've had to think about that and I'm still thinking about that, and I've changed a little bit. The whole thing has been a good thing, a learning thing and it's made it easier to change, if I get rid of my pride." (participant 11, group B)

These physicians described needing time to reflect on that emotion and their feedback, before being able to consider the feedback objectively. This process enabled them to decide to act and make changes. But, knowing how to change and making the change were not portrayed as easy or straight-forward processes.

In contrast, others who initially disagreed with their feedback did not move on to accept and use it. They too were reflective and distressed that their feedback was inconsistent with their self-perceptions, but their reflections focused on different concerns. They expressed less concern about the need to change and more concern about the assessment process:

"My expectation was that I was going to be at least average or above average in all of these clinical aspects, only to find out that medical colleagues who probably didn't even know what I was doing were assessing me as being average or poor. The only one I agree with is the pharmacist saying that my prescription writing is rotten." (participant 2, group B)

"I'm significantly below the average in everything clinical and I've made an effort to find out where I'm wrong. But I believe that if the other family docs in town received the same low scores as me, then the reason for the low scores is not that we're performing poorly but the way the local group of physicians rated us. I was really distraught over that." (participant 7, group B)

These physicians perceived the assessment and feedback processes to be flawed and notably, these perceptions contributed to their distress. Some reflected that they did not know how to change or described barriers to change including health system or practice-specific factors. Being expected to change but feeling unable to do so further contributed to feelings of frustration and powerlessness.

In summary, physicians' whose feedback confirmed or exceeded self-perceptions reported accepting it, a number expressing positive emotions and others changing as needed. Those whose feedback did not confirm their self-perceptions expressed emotional distress and described an extended reflective period. Some eventually changed, seeming to process their emotions and move on to accept and use their feedback. Others did not accept their feedback and did not change, and their initial negative emotions seemed to be amplified by concerns about fairness of the assessment processes.

PERCEPTIONS OF THE MEDICAL CULTURE

As participants described their assessments and their feelings in response, they also described the professional culture and its influence upon performance expectations, perceptions of their feedback and sensitivities as professionals. They spoke of "being a doctor" and how they saw themselves as members of the medical profession. As one shared: "Medicine is a big part of our life and it means so much to us" (participant 15, group B). Within that culture several suggested that it was particularly important to be viewed positively by one's medical colleagues, "reputation is everything to a doc" (participant 5, group B). Also within that culture, self-directed practice was the norm and being assessed in practice was not, "We're used to policing ourselves, we work in our own little worlds" (participant 5, group B). This was the first time that many had been formally assessed in practice and as one observed, "we're all sensitive people." (participant 11, group B)

Others described finding the MSF process problematic. For some, it was intimidating:

"We're a little bit of a paranoid group, we want to be seen in a good light. I was intimidated basically because you don't know what people are going to say about you and you feel uncomfortable." (participant 14, group B)

Considering the peer review aspect of MSF, others spoke of physicians' reluctance to provide constructive feedback to their colleagues:

"How do you get feedback from colleagues? Because they wouldn't want to tell you if you're doing something wrong, or they'd tell you you're doing something wrong and feel pretty uncomfortable." (participant 6, group B)

Participants also described high personal expectations:

“I would have liked to have been the best in everything, being from that ilk of people that if you don’t make 100%, you’ve flunked.” (participant 11, group B)

They reflected upon their internal motivation to be good doctors, do a good job and serve their patients to the best of their ability:

“We all like to think we’re above average. We’re not going to be happy if we accept ourselves as sub-average practitioners who really don’t know what we’re doing or don’t have the patients’ best interests at heart. I don’t know many physicians who don’t have as their first order of business – how can I best serve this patient?” (participant 2, group B)

APPROACHES TO ENHANCING THE REFLECTIVE PROCESS

Many participants considered ways to enhance the feedback process. Most, especially those receiving negative feedback, suggested that a facilitated discussion exploring their feedback and particular concerns could be helpful. Several who were disappointed with their feedback appeared to reflect on the study interview in which they had just participated and offered suggestions for facilitated reflective feedback based upon this. For example, physicians who had been upset shared:

“It’s really nice when people come and actually talk face-to-face. Then I can put my overall [assessment] picture on a scale with that of others. You repeatedly said during this interview ‘a lot of people feel this way’, ‘a lot of people feel that way’. Well, that makes me feel more comfortable because I feel my views are not way out on this end or that end. It makes me comfortable when I get that kind of feedback.” (participant 13, group B)

“It would be good for someone to call in the first year after getting the results and make an appointment to review them with us, because the very fact of talking it out may turn on several lights. The moment you hear yourself say the words, it changes the whole context. If I have to

sit down and say ‘Yes, I went over this and I just really didn’t think I did that poorly’ – it confirms, it’s not incriminating. The opportunity to talk something out, to hear the words, process them, puts a whole different spin on it.” (participant 3, group B)

Processing their feedback and sensitivities through reflective interaction with someone who understood the MSF process seemed helpful in several ways – clarifying emotions, learning that they were not alone, and putting their feedback and sensitivities into perspective.

They also suggested that receiving guidance in using their reports to identify opportunities for improvement and develop plans for learning or change would be helpful. One physician who had received a favourable report reflected that:

“I probably haven’t sat down and thought about this enough. It may be worthwhile for somebody to do a follow-up with us and spend time looking at how we scored and how we might do things differently. If we’re not obliged to take that first step, to sit down and do it, a lot of us aren’t going to take the time because there are so many other things pressing... Maybe they could help us develop an action plan if there were things that stood out.” (participant 6, group B)

Physicians receiving negative feedback who had not been able to see how to change concurred:

“The biggest problem is to be able to see where the specific areas are I need to improve, and talking with someone can help that.” (participant 2, group B)

From the participants’ perspective, the opportunity for facilitated reflection was viewed positively, to help assimilate their initial reactions and emotional responses, and to interpret and use feedback content.

Discussion

Accepting and using performance feedback are processes influenced by many factors.^{1,4} Emotion is one of these. This paper provides insights into the emotional reactions and reflective responses of physicians responding to MSF. It contributes to understanding in three related areas: sources of emotion, influence of emotion upon use of feedback, and facilitation of reflection upon feedback emotion and content.

SOURCES OF EMOTIONAL RESPONSES

Emotional responses to feedback appeared to arise mainly from consistency of feedback with self-perceptions, and perceptions of the professional culture and fairness of the assessment.

Consistency of feedback with self-perceptions of performance was the initial measure of whether feedback were positive or negative and the gauge for emotional reactions. Participants receiving feedback confirming or higher than self-perceptions responded with positive emotion. Physicians whose feedback indicated need for change in a specific area and was consistent with self-perceptions, accepted it with little emotional engagement. In contrast, feedback generally inconsistent with and lower than self-perceptions elicited negative emotions. These were often strong, pervasive and long-lasting, consistent with earlier findings.^{5,6,17} DeNisi and Kluger⁷ suggest distress may arise, at least in part, because feedback recipients interpret negative feedback intended for the “task performance” level at the “self” level. At the “self” level, negative feedback is seen as a criticism of overall professional performance and themselves as physicians. Our findings show that participants’ interpreted feedback at the “self” level.⁷

Perceptions of the medical culture also appeared to contribute to physicians’ sensitivity to negative feedback and the tendency to interpret feedback at the self level. Through its socialization processes, the medical profession instills in its members a sense of “doing good” collectively as a profession and as individual physicians.²¹ Within this context, physicians acknowledged sensitivities to performance feedback, especially to MSF which involves colleagues and coworkers, and to “wanting to be seen in a good light”, of the critical importance of “reputation.” Being a good doctor appeared central to their self-concept. They saw themselves personally as having high professional expectations, providing above average care, “mak-

ing 100%.” Receiving negative performance feedback, especially feedback comparing them with an aggregate of colleagues came as a shock to this self-concept.

For some physicians not accepting their feedback, perceptions of unfairness of MSF assessment procedures appeared to compound negative emotional reactions.^{10,20,23} Another source of concern for recipients of low scores was the implicit expectation that they could interpret their feedback and improve on their own. As one participant explained:

“Feedback in order to be constructive has to be specific and non-emotional. If my colleagues say ‘you have poor clinical skills’, that doesn’t give me any information and it has a big emotional impact.” (participant 13, group B)

INFLUENCE OF EMOTIONS UPON USE OF FEEDBACK

Physicians responding with positive emotion agreed with their feedback as it confirmed their practice and generally they saw no need to change. Others receiving feedback identifying a specific need for change consistent with self-perceptions responded with little emotion and used it for change.

However, consistent with earlier findings, physicians who found their feedback inconsistent with self-perceptions initially disagreed with it, and described long-standing distress and repeated reflection upon both these emotions and their feedback. Those who had changed appeared to have been able to process their emotions, accept their feedback and use it for improvement. But, they did not find change easy. They described difficulties related to changing established patterns, confidence in being able to change, reluctance to accept the need for change and knowing how to change.^{8,9,10} Alternatively, those who did not change also reacted emotionally to perceptions of procedural unfairness, lack of clarity about how to change, or inconsistency with other formal feedback.^{20,23}

Reflection upon feelings is an important but often overlooked activity in learning from experience.^{9,11,12} Boud et al suggest a three-phase reflective process in which reflection upon emotions is integral to each phase. This includes activities like: clarifying feelings both positive and negative at the time of the incident (in this case, receipt of feedback); understanding how feelings influence acceptance and subsequent actions; being able to utilize positive feelings and remove obstructive

feelings. Completing these activities satisfactorily influences cognitive re-evaluation of the situation and assimilation of new data. For physicians in this study, it appears that some resolved their negative emotions and moved on to cognitively assessing and integrating data from their feedback, but others did not.

FACILITATION OF REFLECTION UPON FEEDBACK EMOTION AND CONTENT

Participants received their MSF report in the mail without facilitation. All appeared to reflect to some extent upon their feedback, with those receiving feedback inconsistent with self perceptions reflecting most extensively. Most participants suggested that facilitated feedback could enhance constructive reflection upon their emotions and feedback content.

Participants expressing negative emotions suggested that discussion with someone knowledgeable could help them process these emotions, put their feedback into perspective and move on to accepting it. Boud et al⁹ and others^{7,8,10} support the notion of facilitated reflection, suggesting that reflecting alone often has limited effect and learning can be enhanced by the intervention of informed others.

Participants also recommended facilitating reflection upon feedback content, to help interpret it, identify areas for improvement, locate resources and develop action plans. Feedback was frequently perceived as inadequate to guide improvement and learning. This sentiment was most strongly held by participants receiving negative feedback, but shared by those receiving higher scores who suggested that reviewing their report with an informed professional could help them gain insight and identify overlooked areas for improvement. Recommendations for facilitated feedback are consistent with the developmental intent of MSF, and suggestions from industry for “coaches” to guide feedback use.^{3,4,7,22}

Limitations of this study include the volunteer nature of participants. Also the sensitive nature of the research and its being conducted by the local academic CME office may have elicited socially desirable responses, but the depth of responses and commitment and emotional engagement of most respondents led us to believe this was not generally the case. Another limitation is the exclusion of a more complete exploration of potential influences upon emotional responses and feedback use, such as participants’ motivation, self-efficacy, and locus of control.^{3,24} These are topics for further research.

In summary, these findings increase understanding of physicians’ emotional reactions, especially negative reactions to MSF, the influence of these emotions upon feedback acceptance and use, and facilitation of the feedback process, supporting earlier findings from industry.^{3,4} From these understandings several considerations emerge for medical educators and others providing performance feedback, particularly MSF, to improve its acceptance and use:

- Recipients who perceive their feedback as negative may respond negatively and with distress which can prevent feedback acceptance and use. Awareness of this can inform feedback processes.¹
- Sensitivity to the influence of the professional culture and a shared belief in “doing good” upon physicians’ acceptance of negative feedback may lead to constructive discussion in this area.²¹
- Helping recipients of negative feedback to interpret their feedback at the “task” level and not as a general criticism of “self”, may decrease emotional reactions and increase acceptance. Excluding comparison with aggregate means in reports may aid this.⁷
- Ensuring validity and transparency of assessment procedures can prevent perceptions of procedural unfairness which can amplify negative emotional responses.^{10,20,23}
- Providing facilitated reflection upon feedback can enhance feedback acceptance and use. Reflection upon emotional reactions can assist recipients to assimilate negative emotional responses, and upon content, can increase understanding and use of content for improvement.^{3,7,9}

Finally, each suggestion carries with it a need for further research to determine its effectiveness and understand its contribution to enhancing acceptance and use of performance feedback.

Acknowledgements

We are grateful to Suzanne Ferrier MSc, research associate, and Philip Muirhead MD, family physician, for their assistance with data interpretation and analysis. We are also grateful to the College of Physicians and Surgeons of Nova Scotia for their continuing support of our research. The study was funded by research grants from the Medical Council of Canada and the Nova Scotia Health Research Foundation.

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Chapter 6

Learning in practice:
Experiences and perceptions
of high-scoring physicians



Published as:

Sargeant J, Mann K, Sinclair D, Ferrier S, Muirhead P, van der Vleuten C, Metsemakers J. Learning in practice: experiences and perceptions of high-scoring physicians. *Acad Med.* 2006; 81(7): 655-660.

Abstract

PURPOSE: To increase understanding of informal learning in practice (e.g., consulting with colleagues, reading journals) through exploring the experiences and perceptions of physicians perceived to be performing well. Objectives were to find out how physicians learned in practice and maintained their competence, and how they learned about the communication skills domain specifically.

METHOD: Of 142 family physicians participating in a formal multi-source feedback (360-degree) formative assessment, 25 receiving high scores were invited to participate in interviews conducted in 2003 at Dalhousie University Faculty of Medicine. Twelve responded. Interviews were 1.5 hours each, recorded, transcribed, and analyzed by the research team using accepted qualitative procedures.

RESULTS: While formal learning appeared important to most, informal learning, especially through patients and colleagues, appeared to be fundamental. The physicians appeared to learn intentionally from practice and work experiences, and reflection appeared integral to learning and monitoring the impact of learning. Two findings were surprising: participants' conceptions of competence and perceptions that communication skills were innate rather than learned.

CONCLUSIONS: These physicians' ways of intentional learning from practice concur with current models of informal learning. However, informal learning is largely unrecognized by formal institutions. Additionally, the physicians did not in general share notions of professional competence held by educators and others in authority. These findings suggest the need to make implicit content and learning processes more explicit. Additional research areas include exploring whether physicians across the range of performance levels demonstrate similar processes of reflective learning.

Introduction

Society expects physicians to remain competent throughout their careers. To achieve this, professional, educational and regulatory bodies expect them to be lifelong learners capable of assessing their own knowledge, skills and performance to direct their continued learning.¹⁻⁶ While much of their learning involves formal continuing medical education (CME) programs (e.g., lectures, workshops), it also includes informal learning in practice (e.g., consultation with colleagues, reading journals). Few studies have explored this second form of learning and the informal processes physicians use for assessing, responding to, and monitoring their learning needs.

Physicians in practice learn formally through structured, sanctioned activities and informally through other activities and experiences. An extensive study of physician change and learning reported diverse ways of learning and their relation to specific practice changes. When making changes related to professional competence, physicians reported more frequently using formal learning resources than informal ones, but participation in formal CME programs was usually only one of several methods. They also valued informal learning from colleagues.⁷

Theories of learning through work experience and informal learning suggest that reflecting upon experiences appears central to learning.⁸⁻¹⁴ It is suggested that reflection functions as a mediator between prior knowledge or skill and observation or experience.¹⁴ Building upon this concept, Simons et al¹⁵ suggest two ways to learn beyond formal or structured learning: experiential learning, in which there are no specific pre-planned goals and learning is a side effect of one's activities, and action learning, where learning is central, planned and self-directed by the learner. Similarly, Eraut¹⁶ describing informal learning in the workplace (e.g., by observing others or through "trial and error") discriminates among three types of learning: implicit learning, which occurs unconsciously, reactive, or opportunistic, learning, which is more or less spontaneous, and deliberative learning, which is self-directed, planned, organized and has definite goals.

However, learning through experience and informal learning tend to be less visible and frequently unacknowledged as learning.^{17,18} While formal learning tends to be "explicit" with knowledge readily visible, articulated, communicated and hence more accessible for learning, informal learning and learning from experience are more frequently "tacit", with knowledge not explicitly stated, often invis-

ible to the learner and others, and hence elusive to communicate and learn.¹⁹ These distinctions are important to learning directed toward gaining professional competence. Medical competence is a multi-dimensional construct consisting of four broad domains (cognitive – technical, integrative, interpersonal, and affective or moral), each requiring different kinds of knowledge, skills and attitudes.²⁰ While explicit knowledge visible in formal medical education is conventionally scientific, evidence-based and quantifiable, tacit knowledge, inherent within the integrative, interpersonal and affective domains of competence, tends to be less tangible. Because it is gained informally through observation and practice, sometimes even unconsciously, it is also less visible. These characteristics of informal learning have implications for continued learning.

We undertook this qualitative study of family physicians who had received high scores in a formal multi-source feedback (360-degree) formative assessment addressing clinical, interpersonal, and professional domains of competence.²¹ Our purpose was to increase understanding of learning and maintaining competence in practice through exploring these physicians' experiences and perceptions. Our rationale for selecting this group was the assumption that physicians rated highly by their medical colleagues, co-workers and patients (i.e., physicians seen to be performing well) could offer insights into successful approaches for continued learning and maintaining competence. Our specific objectives were to explore how these physicians 1) learned in practice and maintained their competence, and 2) learned about the communication skills domain specifically.

Method

STUDY BACKGROUND

In 2002, the College of Physicians and Surgeons of Nova Scotia conducted a pilot study of multi-source feedback (MSF) for family physicians using the standardized College of Physicians and Surgeons of Alberta Physician Achievement Review program, a formative process.^{4,5} Following program guidelines, 142 volunteer physicians identified reviewers in two groups (8 medical colleagues, 8 co-workers) and randomly selected 25 patient reviewers). Performance domains included patient communication, team communication, professionalism, clinical performance, and office management. The reviewers rated the physicians on multiple questionnaire items for each domain, and each of the physicians completed a

self-assessment. The 142 participants received their feedback in mailed confidential reports that presented their individual and aggregate mean scores for each item and domain. Scores above the 90th percentile received “commendation” flags, and below the 10th percentile, “information” flags.

STUDY DESIGN

Using open-ended questions, we interviewed high-scoring physicians who had participated in the pilot study described above. Our goal was to explore their experiences with and perceptions about learning in practice. Open-ended questions enable participants to describe experiences and perceptions meaningful to them and to explore related meanings and interpretations.²² The questions inquired about the nature of their medical practices and their communication patterns with patients, colleagues and co-workers; stimuli that made them realize they needed to learn more about a specific topic; approaches they generally used to meet their learning needs; and their perceptions of the above processes.

We sent invitation letters to the 25 of the 142 volunteer physicians receiving the highest mean competency scores from all three reviewer groups, while not receiving an information flag for any domain. Twelve accepted the invitation. They received the study questions beforehand to encourage reflection. One of us (SF) conducted the interviews, consulting with others (JS, KM, DS, PM) following each interview, and another (JS) assisted with one interview. Each interview was 1 - 1.5 hours long; they were audio-recorded and transcribed. The study was funded by the Nova Scotia Health Research Foundation, approved by the Dalhousie University Research Ethics Board and conducted in 2003 by Dalhousie University Office of Continuing Medical Education.

DATA ANALYSIS

We conducted the analysis as a team using standard analytical procedures for qualitative data. First, using a content analysis approach, we individually reviewed and coded 2 transcripts, then discussed these and developed a coding framework. We used this framework to individually analyze remaining transcripts, and met regularly to discuss emerging themes, resolve differing interpretations, and revise the coding structure as required. Second, one of us (JS) then compared and contrasted data within and among participants and themes, to determine and interpret rela-

tionships and confirm dominant themes.²² She conducted this work in an iterative manner in consultation with the research team (KM, DS, SF, PM, CV, JM).

Results

The participating physicians were 10 men and 2 women, ranging in age from 41- 60 years with an average of 25 years in practice. Five practiced in communities of over 50,000 (considered urban) and 7 in smaller communities (considered rural). Compared with the Nova Scotia family physician population, the sample underrepresented women, overrepresented rural physicians, and its members had been in practice slightly longer. As a group they described busy and multi-faceted practices, appeared passionate about their practices and patients, and appeared to strive to maintain a balance of professional and personal activities.

Our findings fall into two general groupings: participants' general approaches to learning and maintaining competence in practice, and their learning specifically about the interpersonal, or communication skills, domain.

GENERAL APPROACHES TO LEARNING AND MAINTAINING COMPETENCE

While formal learning appeared important to most, informal learning especially through patients and colleagues, appeared fundamental. These physicians were stimulated to learn by many factors and used multiple resources and approaches. Formal CME programs were only one resource, and for some physicians, these appeared less useful than self-directed informal activities. Informal learning approaches were individualized and diverse, and usually linked to the experience of the physician's practice. These physicians appeared highly motivated to learn and to be curious. They demonstrated three common important behaviors:

They were reflective (e.g., considered their practices in a thoughtful manner), self-aware (e.g., described approaches they used to inform themselves of their progress and learning needs), self-directed (e.g., identified ways to improve) learners. All described reflecting upon their practices and their knowledge, skills, and attitudes, and monitoring their learning needs.

“If you've a very busy clinician you know where you're a little unsure of yourself, you know where you might be just a little bit shaky some-

times, that's the kind of stuff you look for, and I think the awareness comes out of your own work. You don't need somebody else to tell you that.” (From physician 9, in a rural practice.)

They were stimulated by and learned from patients. Patients served as both stimuli for learning and sources of learning.

“But you know, just being involved with the patient from diagnosis through the whole process, from the presentation through the whole process of diagnosis and treatment, I think that's the learning experience. It stimulates me, if I have a certain case, to go read about it, so that I can manage it. So I guess that outside of the structured CME, that's how I deal with it [learning].” (From physician 10, in a rural practice.)

They were stimulated by and learned from others, especially medical colleagues. All identified the value of this informal learning process.

“I suppose that's one of the advantages of small town practice. I'm interacting on a daily basis with colleagues, family doctors, consultants; I do hospital in-patient work, so I'm interacting daily. It's a very valuable aspect of practice and really CME, that you wouldn't have say in “X” town, where you're more office-based...” (From physician 8, in a rural practice.)

Physicians without hospital privileges told of more limited, yet valuable, face-to-face interactions with colleagues but also described other forms of communication, such as consultants' letters, reports, and phone conversations as valued learning opportunities.

In addition to learning from patients and colleagues, all described learning from medical journals, and, to varying degrees, from literature and Internet searches, teaching students and peers, making house calls, other health professionals and staff, and self-initiated clinical experiences.

Within these diverse and rich approaches, two learning patterns emerged. The first appeared to be spontaneous learning, learning in response to immediate stimuli that arise within the context of their practices. All participants described this kind of learning:

“We like to be confident about our patients and every now and then you see a problem patient you start to realize, whoops, time to brush up a little bit. ... You realize that 90% of health care in the office is repetitious, things that we see day in, day out. But you know, if I see something very interesting, very different, I go and start reading and look up colleagues down the hall and also the other specialists in town.” (From physician 11 in an urban practice.)

When they encountered a question—either one they posed to themselves or that someone asked them—that they did not know the answer to, they sought the answers on their own.

The second approach, exhibited by about two thirds of the participants, was distinct from the first as it involved preplanning, organization and commitment over time. They described setting learning goals and systematically planning and engaging in diverse learning interventions to meet these goals. They also reflected openly about how they learned and the kinds of activities that worked for them, as illustrated below.

“I thought about how I learn and I’m thinking of changing a bit, about how I’m doing it just to try to learn differently. Lectures are good for me in the sense of getting an overview, but it doesn’t stick with me very long, and even these problem-based small-group learning meetings, the method that we’re using, I don’t think it’s quite meeting my needs... I think that what sticks with me the best is what I do in practice. I see a problem and I have to go to the books and figure out what to do for somebody. If I get a similar problem I’ll often go back to that person’s chart and try to figure out what I did.” (From physician 5, in an urban practice.)

“I’ve identified how I learn well, and I’ve used little tricks to keep as sharp as I can. If you take the premise that really, by and large, you’re not that bright, you will have a very healthy approach to the problem, the patient, and your ongoing education. It’s very difficult to keep up, so I have to have sneaky ways to do it and I use students and specialists and every other tool I can find.” (From physician 12, in a rural practice.)

Some of the tricks he used were researching a topic and posting the notes on his office wall for visual reinforcement, working with students to research topics, and designing courses with specialists to teach to his peers.

About half of the physicians expressed keen interest in specific clinical areas, and as part of their comprehensive learning plan, described self-directed, pre-arranged, regular activities in their area of interest (e.g., sports surgery, emergency medicine, palliative care, counseling, serving native populations). Several took it upon themselves to arrange clinical or other experiences to advance this learning. One observed that his spending time assisting in the operating room actually enabled him to meet several learning needs:

“So, I mean, you’re not there to learn the surgical technique and you’re not there to be the star of the O.R. You’re just really there as [part of] the lowest echelon, a person to help out, but they need an extra set of hands. So I love it because it feeds what little interest I have in surgery without having to be a surgeon. And it gets me in to see all the surgeons and I get to pester them with questions.” (From physician 4, in an urban practice.)

This last quote, in fact, illuminates several characteristics of these learners – their ability to plan learning interventions, their curiosity, their self-awareness, and their skill in opportunistic learning.

LEARNING SPECIFICALLY ABOUT THE COMMUNICATION SKILLS DOMAIN

When asked about their approaches to learning, as described above, participants described learning activities related to traditionally defined clinical competence only, despite having been evaluated their competence in other domains. The exception was one whose particular interest was counseling youth. The others mentioned learning in the communication skills and other domains only when specifically asked.

In the rest of this section, we describe these physicians’ communication practices with both their patients and members of the health care team, and their perceptions of and experiences with learning and teaching these skills.

Descriptions of communication practices

In describing their communication practices, they gave rich and detailed descriptions of their interactions with patients and the health care team. These appeared to demonstrate characteristics of effective communication.²³ It was also apparent that communication was key to their successful practices:

Communication with patients. Attending to the patient, being present, taking time, and showing interest in patients and their families as people were common themes.

“I have one patient in the world at a time and it’s the one in front of me.”
(From physician 9, in a rural practice.)

They [patients] like to know that you at least understand what they’re going through and understand where they’re coming from, even though they may not be empowered or desire to change at that point. (From physician 2, in a rural practice.)

“I’m not in a rush with my patients... so I’m barely even caught up on what’s going on in their lives or how their kid’s hockey tournament went, when other people [physicians] were moving on to their next patient.” (From physician 4, in an urban practice.)

Communication with team members. They described rich, respectful, egalitarian, relationships with others. For example, with office staff:

“We’ve come to know each other so well that we work as a family and it’s a comfortable thing.” (From physician 11, in an urban practice.)

With other members of the health care team:

“The practice of modern medicine is a team job. These are all people who have expertise I don’t have. Patient care works best when everybody in the team gets to do their job and do it well.” (From physician 9, in a rural practice.)

With specialist physicians:

“You have certain people that you’re referring to and the reason you select those is ... you have great respect for them, they do a good job,

they’re accessible to me, and I think they have respect for my abilities. They get to know what your limitations and what your abilities are and you get a very good working relationship with them. And that’s what I have – a group of specialists that I use all the time and they know me and I know them and it works well.” (From physician 7, in a rural practice.)

Respect was a common thread emphasized in descriptions about communication with team members.

Perceptions about teaching and learning communication skills.

Although they described their approaches to patients and others in terms which reflect high-quality patient and team communication (attentive, compassionate, interested, respectful),²³ about half expressed skepticism about the ability to teach and learn these skills. These considered communication skills “a personality trait” (physician 2, rural practice), “either you have it or you don’t” (physician 5, urban practice; physician 8, rural practice), or “a lot of it has to do with what you’re like as a person.” (physician 7, rural practice).

They believed that physicians’ attitudes and awareness influenced their communication with others:

“If you don’t think you need to put the effort in, well then you’re not going to communicate very well. Most physicians think, “I’m a busy doctor and as long as I look after patients clinically well, that’s all I need to worry about, so I don’t need to get any help in that [communication] area.” (From physician 6, in a rural practice.)

These guys that have poor communication skills, I don’t know how well they recognize it or whether they care. (From physician 8, in a rural practice.)

“A lot of it has to do with respect... how do you learn that sort of thing? How do you teach that sort of thing? I don’t know. (From physician 7, in a rural practice.)

Another physician (physician 10, rural practice) believed that, “among physicians, there’s a big need to communicate better... I think we’re pretty egotistical and so we don’t always receive criticism easily and I think we all have room to improve in that regard.”

Experiences in learning. The majority, when asked about learning about communication skills, said they had learned through experience:

“It’s just 20 years of practice and if I haven’t got it right now I’ll never get it right!” (From physician 10, in a rural practice.)

“It’s a learned technique [communicating clearly with elderly patients] that takes years to learn from experience, for sure.” (From physician 7, in a rural practice.)

A minority described learning these skills in a structured way. One referred to learning them in his medical training and practicing them every day (physician 4, urban practice), and another, whose clinical focus was counseling adolescents, intentionally sought out CME courses that improved her communication skills (physician 3, urban practice). Only two others were aware of CME courses in communication skills. However, when asked to reflect upon how communication skills might be taught, several provided insightful suggestions: mentorships with physicians who were good communicators, providing “tips from the masters”, small-group learning, and, for team communication, interprofessional courses.

In summary, these physicians demonstrated respect and attentiveness in communication with others and articulated the importance of these attributes. However, they perceived barriers to teaching and learning them, and a number appeared to regard communication skills as reflecting personality traits rather than learnable skills.

Conclusions and Discussion

This study of high-scoring family physicians was undertaken to explore their experiences in and perceptions of how they continued to learn and how they maintained their competence. We believe that it contributes insights in three areas: learning in practice, notions of professional competence, and perceptions about learning communication skills.

First, while formal or structured learning appeared important to most, informal learning especially through patients and colleagues appeared fundamental to their maintaining professional competence. This contrasts with an earlier finding that physicians more frequently used formal learning resources in relation to practice change,⁷ but

supports findings that physicians’ learned in multiple ways, of which formal CME was only one, and that they valued learning from colleagues.

Notably, this learning from practice and work experiences appeared intentional. All physicians appeared reflective, reflecting upon their practice and patients, skills and knowledge, interactions with patients and others, strengths and weaknesses. Reflection appeared integral to their learning and to monitoring its impact.

All participants described learning characteristic of Simons’ experiential learning, where there are no explicit learning goals other than to learn through experience, and learning occurs as a side effect of one’s activities.¹³ They also seemed to reflect Eraut’s reactive learning, which happens nearly spontaneously in the normal course of work.¹⁴ In both cases, specific learning is unplanned but there is a conscious intent to learn from experience through reflecting upon it. Two thirds of the group appeared to also demonstrate a planned, structured approach to their learning, reflective of Simons’ active learning and Eraut’s deliberative learning, where learning from practice is a conscious, self-directed, planned activity consisting of goal-setting, scheduling, and organizing.

Findings about the respondents’ notions of professional competence and teaching and learning interpersonal skills were surprising. When asked to describe how they generally learned and maintained their competence, 11 of the 12 described their learning about traditional “clinical” competence only. They did not consider learning in other domains until specifically asked about each. Regarding communication skills, these high-scoring physicians articulated and appeared to demonstrate that communication with patients and communication with others were core professional skills. Yet, over half did not believe that these skills could be taught and learned and instead considered them personality traits.

We explored these responses on two levels. Pragmatically, the introduction of instruction in communication skills and other nontraditional domains into formal medical curricula is relatively recent. Most of these physicians, averaging 25 years in practice, would have received limited formal instruction in medical school in the basic knowledge and skills underpinning competency in these domains.

On the perceptual level, the absence of these domains from the formal curriculum during the respondents’ medical education made them less visible, reinforcing the perception that they were less valued.^{17, 19} Consequently it is less likely that they were a part

of the responding physicians' conscious awareness of what constitutes professional competence. Considering communication skills in particular, this assumption would support the participants' view that how one communicates is primarily part of one's personality. It is unlikely that these physicians received explicit instruction in their medical educations that would lead them to think otherwise.

Implicit, or tacit, learning from practice and from experiences can be unconscious.^{16,19} For these physicians, learning communication skills could have been unconscious, contributing to perceptions that these could not be explicitly taught but were learned "through experience." Interestingly, these views reflect those expressed by Balint when he observed 50 years ago that communication skills were learned through "experience and common sense".²⁴

Limitations of this study include the volunteer nature of participants and their location within only one geographical area (a single Canadian province). Although the study group was small, the data appear saturated, as no new themes arose with the addition of the last three interviews. Additionally, interviews were conducted by staff of the local academic CME program, and it is possible that this and other factors moderated physicians' responses to reflect social desirability. However, we think this unlikely based on their sincerity and their enthusiasm for and commitment to their practices and learning – conveyed throughout the interviews – and their rich descriptions of their practices.

What are the implications of these findings? Foremost seems to be the need to make the implicit skills, knowledge, attitudes, and processes in medical practice, education, and assessment more explicit – in short, to make the invisible visible. This is important because it may enable physicians who are not using these approaches to learn them and use them, and help educators to better design programs and coach learners at all levels of the curriculum. It refers to both content and process. Regarding content, our findings suggest that physicians in practice may not share notions of professional competence held by educators and others who define them. Making these constructs more explicit, as institutions are now striving to do through curricula in communication skills and professionalism, for example, will aid in physicians' sharing a vision of professional competence and its domains. This would help physicians understand professional competence and its domains and foster physicians' capacities to articulate, learn, and self-assess, all necessary steps on the road to literacy and mastery in professional competence.

Regarding the process of learning, making the invisible visible refers to the reflective, informal and largely unrecognized ways of learning from practice described by these physicians and others.⁶ Explicitly acknowledging these useful strategies would formally reinforce their value as learning activities and increase their accessibility; e.g., by making explicit the skills inherent in practice reflection and self-directed learning.^{17,18,19}

Implications for further research include exploring effective ways of implementing the above; that is, of making the implicit professional content and learning processes more accessible to physicians and more formally recognized by educational, professional and regulatory institutions. A potentially important line of inquiry concerns exploration of the use of self-directed reflective intentional learning from practice among family physicians across the range of performance, to answer the question, "Is this learning approach used by physicians at all levels of performance?" At this time we do not know the answer to that question. We are currently studying a diverse group of physicians to explore it.

Acknowledgements

This study was funded by a research grant from the Nova Scotia Health Research Foundation. We are also grateful to the College of Physicians and Surgeons of Nova Scotia for their support of our research.

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Chapter 7

Conclusions and discussion



Introduction

Our research investigated physicians' responses to multi-source feedback and their use of that feedback for learning and performance change. Conducting our research within the context of formative assessment, we primarily addressed the third step, "Use of feedback for learning and change." The two steps of formative assessment which precede this are "Assessment of performance" and "Provision of assessment feedback."

Chapters 2 – 6 described the studies we conducted to answer our two broad research questions. The first question explored physicians' responses to MSF. Specific questions were:

1. How did physicians use their MSF for learning and practice change?
2. What conditions influenced their use of MSF for learning and practice changes?

The second broad question explored how physicians learned in practice. Specific questions included:

3. How did physicians perceived to be performing well learn in practice?
4. How does this learning compare with the learning and responses to MSF described by physicians receiving negative feedback?

In this chapter we summarize the overall findings by research question, discuss them in light of the current literature, and propose two models to aid considerations of the ways in which physicians use MSF. We use our results and the two models to propose a third model, a revised formative assessment model which includes an additional step to make a total of four steps, not three. We then identify key conclusions, address limitations of the research, and conclude with a discussion of implications for use of MSF for physicians and for research in the field.

Research questions:

Question 1: How did physicians use their feedback for learning and practice change?

We addressed this research question in Chapters 2 – 5. The MSF feasibility study of 142 family physicians (Chapter 2) showed that 89% of participants completing the evaluation questionnaire believed that their report provided useful information and 61% indicated they had or planned to make practice changes in response. Almost 75% of the changes they identified addressed various forms of communication. For written communication involving other members of the health care team, most frequently reported changes were clearer prescriptions and medical records. For patient communication, most frequently reported changes were providing better explanations, being less judgmental, improved phone communication and availability, and more generally, improving patient wait times and accessibility. The latter ones also pertain to the practice management domain. While the purpose of the study reported in Chapter 3 was exploration of physicians' responses to MSF and factors influencing their responses, several focus group participants reported making practice changes. These were mainly in the communication domains: improving communication with consultants, purchasing a cell phone to increase patient access, and responding more fully to patient information needs following diagnostic tests.

The study in Chapter 4 explored physicians' learning and practice changes in more detail. Of the 28 physician participants interviewed, seven reported making changes, all in patient and team communication. For patient communication, examples included explaining more clearly, taking more time to listen, encouraging patients' questions and concerns and using more open-ended questions. Examples in team communication were improvements in written and verbal communication with pharmacists. One physician described how he had taken the initiative to improve communication generally with colleagues and coworkers in his small hospital. Only one physician reported action in response to feedback on clinical competence. He conducted an audit of his practice to determine most frequent patient problems to guide learning needs, a relatively complex undertaking. Others described participating in educational and other activities to enhance communication or other skills. For some, these were formal learning activities at personal expense; e.g., attending a 2-day out-of-town course to improve patient communication skills or record-keeping skills. Within the professional domain, one

participant reported seeking private consultation for stress management. Others described informal learning activities; e.g., reviewing student resources for enhancing patient communication, observing colleagues' interpersonal interactions at CME events. All reported positive results from their learning.

In summary, about 60% of physician participants reported using their MSF for practice change and learning. They most frequently reported changes in communication with patients, followed by communication with other members of the team, including written communication. Few reported changes in clinical competence. These results are generally consistent with those of earlier studies.¹⁻³ While it is promising news that over half of the participants indicated using their feedback for change, we were curious about the factors which influenced physicians to use, or not to use, it. We explore the factors in the following section.

Question 2: What conditions influenced physicians' use of MSF?

This section summarizes what we learned in Chapters 2-5 about the factors and conditions which appeared to influence physicians' use of MSF for learning and change. It is a long section as we learned that multiple factors moderated use and the process was often not straightforward. We list below the influences we found to be important and discuss each in the following paragraphs:

1. Nature of the feedback
2. Emotional reactions to feedback
3. Assessment procedures: Perceived credibility and fairness
 - Ability of reviewer groups to observe the domain in question
 - Feedback congruence with other sources of assessment feedback
 - Consistent use of the questionnaire and scale
4. Feedback procedures
 - Content specificity
 - Process of providing feedback
5. Beliefs about ability to change and perceived barriers to change
6. Medical and professional culture

NATURE OF THE FEEDBACK

Similar to other multi-source feedback studies, study results reported in Chapter 2 demonstrated that mean reviewer scores on all items on the three reviewer groups' questionnaires were high (>4.0 for 85 of 88 items). In spite of this, physicians' responses varied depending upon their score. Of note, participants' agreement with their feedback was positively correlated with scores. Interviews and focus groups with participants confirmed that positive feedback was more readily accepted and assimilated. Studies described in Chapters 3, 4, 5 also showed that participants interpreted their feedback in different ways. The most common seemed to be comparison of their mean item and domain scores with aggregate mean ratings and interpretation of their feedback as negative (suggesting a need for change), or positive (not suggesting need for change) based on the direction of the discrepancy. Another was direct comparison of their self-ratings with medical colleague ratings, but they mentioned this less frequently, perhaps due to the placement of this table at the end of the report.

The study in Chapter 5 showed that participants seemed to compare their scores and overall feedback with a general self-perception of their performance which incorporated how they believed they were performing compared to their colleagues. Positive feedback appeared to be consistent with or higher than their self-perceptions of their performance, while negative feedback appeared to be inconsistent with and lower than their self-perceptions. Of note, some physicians interpreted scores in the average range and not below the mid-point, as negative.

Participants more readily accepted positive feedback, but as it generally did not identify a need for change they reported making few changes in response to it (Chapter 4). Of participants receiving negative feedback, not all accepted or used it. The following discussion addresses the factors influencing this.

EMOTIONAL REACTIONS TO FEEDBACK

Emotional reactions appeared to influence feedback acceptance and use. Receiving highly positive feedback elicited positive emotion and even pleasant surprise, and participants accepted it. For physicians receiving negative feedback, emotional reactions appeared tempered by the consistency of the feedback with self-perceptions of performance. Feedback indicating a specific need for change that was consistent with self-perceptions and/or performance feedback from other sources, did

not evoke strong emotional responses, was accepted and used (Chapter 5).

Generally negative feedback inconsistent with self-perceptions elicited negative emotions and participants did not readily accept it (Chapters 3, 5). For some, emotional distress was strong and long-lasting. While a few appeared to process their emotions over time and eventually accepted and used their MSF, others did not. Two important factors appeared to contribute particularly to emotional distress, perceived lack of credibility and fairness of assessment procedures and usefulness of the feedback. We discuss these in the following sections.

ASSESSMENT PROCEDURES: PERCEIVED CREDIBILITY AND FAIRNESS

Many participants expressed the view that the MSF assessment procedures lacked credibility and fairness. The following factors contributed to these perceptions: 1) ability of reviewer groups to observe the domain in question, 2) congruence with other sources of assessment information, and 3) consistent use of questionnaires and scales.

Ability of reviewer groups to observe the domain in question

Assessment is context specific, and participants demonstrated that acceptance of feedback was dependent upon both the reviewer group and the specific domain or behaviour they were assessing. The factor most strongly leading participants to question their feedback was a perception that reviewers were unable to observe and hence objectively assess their performance within the respective domain. This finding was first suggested in the feasibility study, Chapter 2, which showed that familiarity of reviewers with the physician being assessed was positively associated with scores; i.e. reviewers knowing them better rated them higher, a finding supported by earlier studies.^{2,4-6} Focus group participants in Chapter 3 suggested that the converse may also be true, as physicians who had intentionally not selected medical colleague and coworker reviewers who knew them well reported receiving disappointing results. They cautioned that it was a fine balance between knowing someone well enough to rate them fairly and, knowing them so well that familiarity could bias or be perceived to bias ratings. Interview participants (Chapter 4) confirmed that lack of opportunity for reviewers to observe the behaviours being assessed led them to question the credibility and fairness of their assessments, and they tended to discount feedback from these reviewers.

In Chapter 2, physician participants agreed that medical colleagues should be

included as reviewers in the MSF process; however, significantly fewer agreed with their feedback than with patient or coworker feedback. This was surprising. Participants in subsequent studies confirmed that the feedback of patients, as direct consumers of physicians' services and direct observers of their performance, was most credible and hence they used it most frequently. They least frequently accepted and used feedback from medical colleagues, the group having the least opportunity to observe them in practice (Chapter 4). An earlier study of the Alberta MSF program reported similar results.¹ For example, with respect to patient communication, physicians in our research reported accepting and making changes most frequently in response to items on the patient questionnaires, and least frequently, in response to items on the medical colleague questionnaires. Regarding coworker feedback, participants responded favourably if the coworker directly observed the behaviour or its outcome; e.g., prescription writing. From the reviewers' perspectives, the results of Chapter 2 showed that medical colleague reviewers reported significantly more difficulties rating their physician colleagues than did coworkers or patients, mainly because items were "not applicable to their relationship" with the physician.

Participants in all studies reported making changes most frequently in patient and team communication, behaviours directly observed by the respective reviewer group. However, the assessment of clinical competence presented a conundrum. There was consensus that physician colleagues were the only reviewer group with the expertise to assess clinical competence, but as they rarely directly observed their colleagues' clinical performance, participants did not see their feedback as credible. This was problematic as they considered clinical competence central to practice. As a result, they made an important recommendation regarding the use of MSF. They recommended that clinical competence should not be assessed by MSF under these conditions. They suggested alternative approaches for assessing this critical domain, such as chart review or audit to compare the processes and outcomes of their clinical care in particular disease conditions with clinical guidelines or standards. Many recognized the additional resources required to conduct chart audits and suggested conducting them as a random sample of physicians participating in MSF to allay costs.

Congruence with other sources of assessment information

Participants considered the consistency of their MSF with other sources of assessment feedback, both informal and formal, when assessing its credibility (Chapter 4). Informal sources included anecdotal feedback from patients and others and informal

self-monitoring activities. Several physicians making a change reported that they had already been considering that change because of informal feedback. Alternatively, several who did not accept their negative feedback described receiving formal performance assessment feedback from regulatory or professional associations recognizing the high quality of their practice and contradicting their MSF feedback.

Consistent use of questionnaires and scales

Focus group participants (Chapter 3) identified concerns related to reviewer use of the assessment tools and scale; e.g. a lack of discrimination among items, reluctance to provide negative scores, a tendency to score all items the same, and skewing of the scores to the right. The latter point was a particular concern, because a score of “3” (the median or average point of the scale) was actually below the actual mean for all items; i.e., “4” or above for 85 of 88 items. Participants suggested that if reviewers did not know them well, they might score them “3” which was in fact a low score. These concerns diminished the credibility of low scores; i.e., of feedback perceived as negative.

FEEDBACK PROCEDURES

Feedback procedures included two components, content and process. Specificity of *content* appeared highly influential in the use of MSF. Participants reported most changes in response to specifically worded items. For patient communication skills, the domain in which the greatest number of changes were made, items on the patient questionnaire were generally precise and clear, directing the change to be made. These items resulted in the most changes. Examples of items from the patient questionnaire include: “Your doctor adequately explained your treatment choices”, “I am advised of results of tests and X-rays.” The item addressing communication with pharmacists was also specific, “Writes prescriptions clearly.” For clinical competence, the domain in which least changes were made, items were more general in nature providing limited direction for change and decreasing their usefulness; e.g., “Selects diagnostic tests appropriately,” “Makes the correct diagnosis in a timely manner”.

The feedback *process* was not facilitated and participants received their report in the mail. A number reflected that facilitated feedback; i.e., discussing their report with someone knowledgeable about the MSF process would have been useful. Those receiving negative feedback, in particular, suggested that a facilitated reflective process which helped them to explore both their emotional reactions to feedback and

feedback content, would aid in assimilation and acceptance. Facilitated reflection on their emotional responses would help clarify emotions, increase awareness that others felt the same way and put their sensitivities into perspective. Facilitation of feedback content would help them interpret their scores, identify areas for improvement, become aware of available resources, and develop and implement plans for learning or change.

BELIEFS ABOUT ABILITY TO CHANGE AND BARRIERS TO CHANGE.

Although exploration of beliefs about change and barriers to change was not an explicit purpose of the study, some participants seeing a need for change shared beliefs in this area. Several described difficulty in changing long-standing habits; however, following lengthy reflection upon their feedback, they were able to see how to change in specific areas and had made changes. Others who did not change described barriers like practice, health system and community factors, or not knowing how to change.

PERCEPTIONS OF PROFESSIONAL CULTURE AND PERSONAL EXPECTATIONS

Focus group participants (Chapter 3) alluded to sensitivities to performance assessment arising from the medical culture. Interviewees in Chapter 5 described in more detail their beliefs about the subtle yet pervasive influence of the culture upon professional relationships and performance expectations. Within medicine, self-monitored practice is the norm and being assessed in practice was not common. Some believed physicians were reluctant to provide constructive feedback to colleagues and others found the MSF process intimidating. In the medical profession, collegiality is valued and it appears particularly important to be viewed positively by one’s medical colleagues. This view appeared central to their self-concept. They also described high personal expectations for being “good doctors” and serving their patients to the best of their ability. Receiving performance feedback inconsistent with self-perceptions and expectations was a shock.

Summary

A number of conditions and factors influenced physicians’ use of MSF for practice change and learning. They included the nature of the feedback, emotional reactions, perceived credibility and fairness of assessment procedures, feedback procedures related to content and facilitation, beliefs about ability to change and perceptions of professional culture.

While little is reported in the medical education literature on factors influencing MSF use, the organizational psychology literature is more extensive and our findings are similar to results reported there. Particularly relevant is a recent meta-analysis of longitudinal studies of MSF use in business settings.⁷ In this, Smithers et al reported eight broad factors influencing MSF use: feedback characteristics, orientation, initial reactions, personality, perceived need for change, beliefs about change, goal setting and taking action. Of these factors, our study did not address feedback orientation or personality but supported the remaining six factors. Please refer to Appendix B for a more detailed overview of the results of the meta-analysis by Smithers et al, and a comparison of our findings with theirs. A notable difference in our findings was the influence of perceived credibility and specificity of the feedback. While we found these two factors to be highly influential, the Smithers meta-analysis did not identify them.⁷ We surmise that credibility of feedback may not have been as influential in business settings as MSF was designed for use in such settings where reviewers work closely with those being assessed and regularly observe their work and interactions. These features are less characteristic of medical practice settings, especially those of family physicians primarily in office practice. With regard to specificity, the MSF industry literature recommends using specific, relevant items, and training of reviewers and recipients in using them.

Smithers et al and other psychologists⁷⁻⁹ also offered insights into two additional factors suggested by our research as influencing use of MSF: providing facilitated feedback and a developmental organizational culture. The psychology literature contends that facilitation of feedback is instrumental to constructive MSF use and can even aid recipients of positive feedback to find ways they can improve. They suggest using a “coach” for this purpose. The absence of facilitated feedback in the program described in this research appears consistent with most MSF physician programs.^{2,6,10,11} In the one program reporting use of facilitated feedback, physicians found the facilitation helpful.³ The “Best Practice Guidelines for 360 Degree Feedback”, developed by a UK collaborative group researching feedback, recommend feedback facilitation in MSF.¹²

Regarding organizational culture, the psychology literature also suggests that a supportive organizational culture could explicitly influence the constructive use of feedback through such activities as offering formal educational programs in the domains being assessed, and encouraging recipients to discuss their feedback with their reviewers.⁷⁻⁹ Researchers identify the need for further investigation of these factors.

Questions 3 and 4: Physician learning in practice

In addition to studying the specific ways physicians used their MSF for practice change and learning and the conditions influencing use, we also studied physician learning in practice. We believed that increasing our understanding of how physicians usually learn and remain competent in their practice, and the factors influencing their learning, could contribute to increased understanding of learning within the context of MSF.

To address this objective, we explored how physicians receiving highly positive MSF scores; i.e., physicians perceived to be highly performing, learned in practice (Chapter 6). We reasoned that high-scoring physicians could offer insights into successful approaches for continued learning and maintaining competence. We then compare their learning approaches with learning responses described by physicians receiving negative feedback, and discuss salient points in light of the literature.

PHYSICIANS RECEIVING HIGHLY POSITIVE FEEDBACK

We studied two areas of physician learning in Chapter 6: how physicians rated highly by their medical colleagues, coworkers and patients in the MSF feasibility study (Chapter 2) learned in practice and maintained their competence, and how they learned in the communication skills domain specifically. The communications domain was selected as it was the one in which physicians reported the most changes in response to MSF. The study demonstrated that these physicians appeared passionate about their practice and patients, were highly motivated to learn and used multiple opportunities for learning. While formal learning appeared important to most, informal learning through patients and colleagues was fundamental. For some physicians, formal CME programs appeared less useful than self-directed informal activities. Informal learning approaches were individualized and diverse and usually linked to the experience of their practice. Of note, these physicians demonstrated common characteristics: they were reflective, self-aware, self-directed learners, and were stimulated by and learned from patients and other members of the health care team, especially medical colleagues.

This group of physicians held notions of professional competence and of teaching and learning communication skills which were, however, surprising. When asked to describe how they generally learned and maintained their competence, 11 of 12

limited their description to the traditional “clinical competence” domain. They did not appear to consider the other domains as part of professional performance nor did they consider learning in other domains until specifically asked about each. Regarding communication skills, these high scoring physicians described their communications with patients and team members and their descriptions reflected characteristics of effective communication. They also believed that communication with patients and others were core professional skills. Yet, over half did not believe that these were skills that could be taught and learned and considered them personality traits.

PHYSICIANS RECEIVING NEGATIVE FEEDBACK

We compared ways of learning described by physicians receiving highly positive feedback with those described by physicians receiving negative feedback. Salient features of learning included: using reflection, self-awareness and self-direction; emotional reactions, and beliefs about domains of professional competence.

Both groups were *reflective*. High-scoring physicians appeared continually reflective of their practice, skills, and knowledge. All physicians reflected to some extent on their feedback but negative feedback elicited a prolonged period of reflection. High-scorers appeared *self-aware* as they described their practices and how they learned from them, and their MSF reviewers confirmed their self-perceptions of performance. However, MSF reviewers less consistently confirmed self-perceptions of performance for participants’ receiving negative feedback. High-scoring physicians were *self-directed* learners, monitoring and responding to their learning needs. While some participants receiving negative feedback were able to plan and make changes on their own; i.e., appeared self-directed, others had more difficulty. Reflection, self-awareness and self-direction are integral to self-monitoring and lifelong learning, and reflection is central to learning through experience and observation¹³ and from feedback.¹⁴ But, ironically, such skills are inadequately understood, developed, taught and practiced in medicine.¹⁵ Participants suggested that facilitated reflection of their feedback could increase self-awareness and lead to feedback acceptance and more constructive responses, a concept supported by the broader educational literature.^{13,16-18}

Physicians receiving both highly positive and generally negative feedback described their *emotional reactions*. High-scoring physicians were enthusiastic and passionate about their practice and were generally pleased and even pleasant-

ly surprised by their feedback. Physicians receiving generally negative feedback were unpleasantly surprised and distressed, and their distress appeared to influence their ability to respond to their feedback. Although we know that emotion influences decision-making and behaviour traditional medical education has done little to integrate the emotional domain into curricula.^{19,20} Instead, emotional neutrality and even detachment appear to be favoured.^{21,22}

Comparing responses of participants receiving highly positive feedback and negative feedback raises interesting points about *domains of professional competence*. While the high-scoring group generally believed that communication skills could not be learned but were personality traits, those receiving negative feedback made the most changes in communication skills. In contrast, although high-scorers’ perceptions of competence focused on the clinical domain and all participants agreed that clinical competence was central to effective performance, receiving negative feedback in clinical competence rarely produced change. This surprised us until we discovered that physicians most frequently changed in response to credible and specific feedback, characteristics of MSF in the communication domains but not in clinical competence. These findings emphasize the power of clear, specific, credible feedback. It can make explicit the less traditional and more poorly defined domains like communication skills and inform physicians about what is expected.²³⁻²⁵

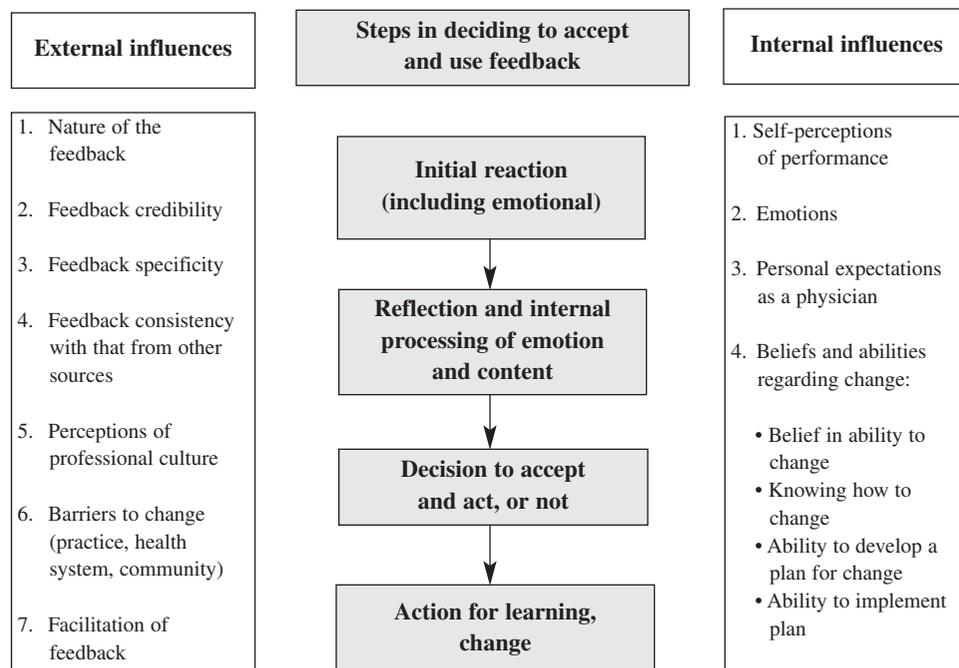
In all, physicians receiving highly positive feedback used informal learning through patients and colleagues, and were reflective, self-aware and self-directed. Their learning from practice and work experiences appeared intentional and concurred with current models of informal learning.^{26,27} Physicians receiving generally negative feedback were also reflective, but were self-aware and self-directed to varying degrees. Physicians in both groups responded emotionally to their feedback. Perceptions of professional domains and ability to learn and change differed between the two groups, raising questions about teaching and assessment in different domains.

New theoretical framework: Models of MSF use for physician learning and change

Our research shows that physicians use MSF for learning and improvement under specific conditions. It demonstrates that their use of MSF is complex, it is influenced by multiple factors, and reflection appears central to MSF use and learning. As Smither et al⁷ suggest from MSF research in industry, the question should not be “Does MSF work?” but “Under what conditions does it work?” In this section we synthesize our findings and propose two models (Figures 1, 2) to increase understanding of physician use of MSF. We then incorporate our synthesis into a third model (Figure 4), a new model for formative assessment.

In Figure 1 we summarize the influences identified earlier in this chapter upon physicians’ use of MSF. Looking at the influences more closely, they are both environmental (external) and personal (internal) and appeared to first influence physicians’ decisions to accept their feedback and then, their taking action to use it. We describe the reflective process more fully in Figure 3.

Figure 1: Summary of influences upon decisions to accept and use MSF for learning or improvement

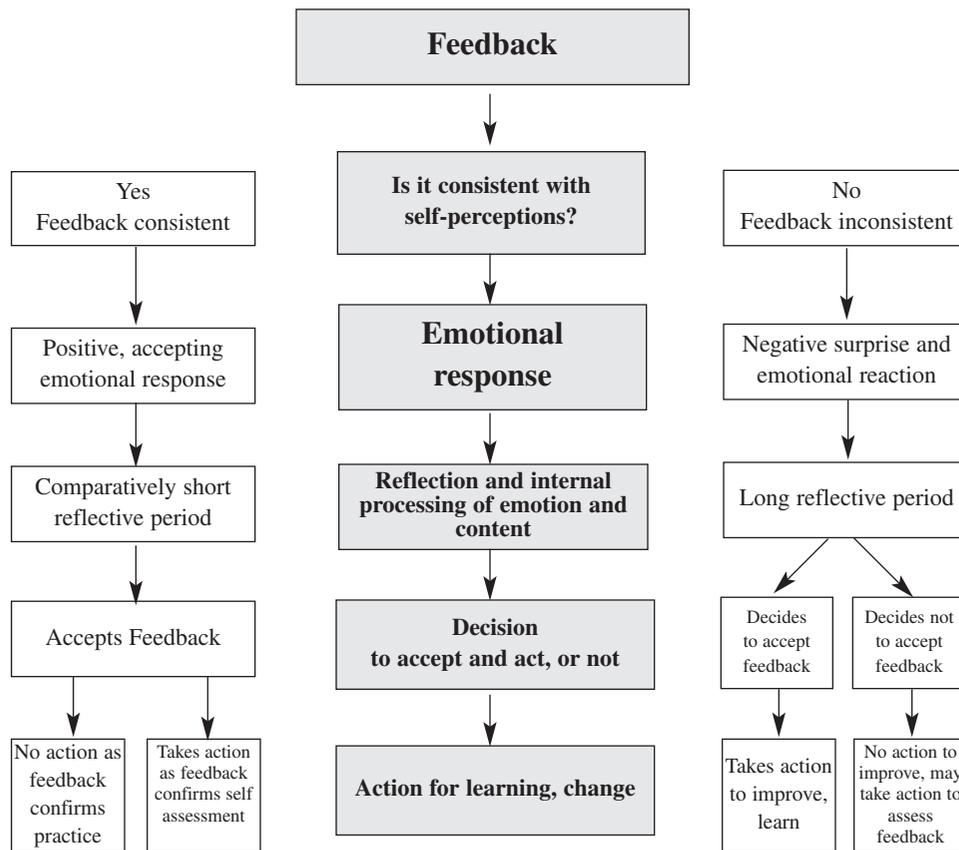


Referring to Figure 1, the first influence was external, the *nature of the feedback*, particularly whether or not it was consistent with *self-perceptions of performance*, the first internal influence. While positive feedback did not identify need for change and was readily assimilated, negative feedback was differentially assimilated. If it pertained to only one or two specific items and upon reflection participants found it consistent with self-perceptions, they appeared to accept it quite readily. But, if negative feedback were more general and inconsistent with self-perceptions, they responded with negative emotion. *Emotion* was a second internal influence. Negative emotions negatively affected feedback acceptance. Some participants eventually changed and some did not but all described a long process of reflection. They reflected upon external factors directly related to their feedback, its *credibility*, *specificity* and its *consistency* with other sources of performance feedback. Perceptions of deficiencies in these three areas negatively influenced feedback acceptance and use. More subtly, perceptions of the *professional culture* appeared to moderate responses, and perceptions of *community, health system and practice barriers* influenced decisions and actions for change. Internal factors also appeared influential, including *personal expectations* as a physician, and *beliefs and abilities related to change*; e.g., belief in ability to change, knowing how to change, and abilities to develop and implement plans for change. A final external factor, facilitation of feedback, was suggested as a positive influence upon physicians’ assimilating, accepting and using their feedback.

Of note, although the factors are listed in linear fashion, the relationships among them and with the reflective process are not linear and sequential. The factors appear to interact in an iterative manner with each other and at different stages of the reflective process. For example, as participants reflected upon their “feedback specificity”, an external factor, it differentially influenced their “emotional”, “decision”, and/ or “action” responses. This was true of most factors.

While some factors and conditions elicited emotional responses, all seemed to evoke reflective responses. *Reflection* seemed to be the process through which feedback was or was not assimilated. Figure 2 presents a model depicting the reflective processes which physicians described in response to MSF. It presents parallel processes for those receiving positive and negative feedback, and for those who changed and did not change. *Consistency of feedback with self-perceptions* generally elicited a short period of reflection and these physicians gen-

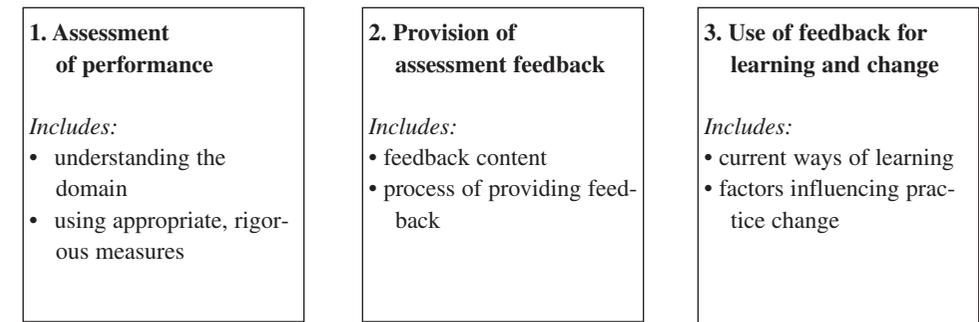
Figure 2: Model of reflection and decision-making in response to MSF



erally accepted their feedback and reported changing appropriately. *Inconsistency of feedback with self-perceptions*; i.e., negative feedback, evoked long periods of reflection especially for physicians who found their feedback distressing. Some did not accept it or change. Some reported still reflecting upon their feedback two years after receiving it, a testament to its powerful and sensitive nature.

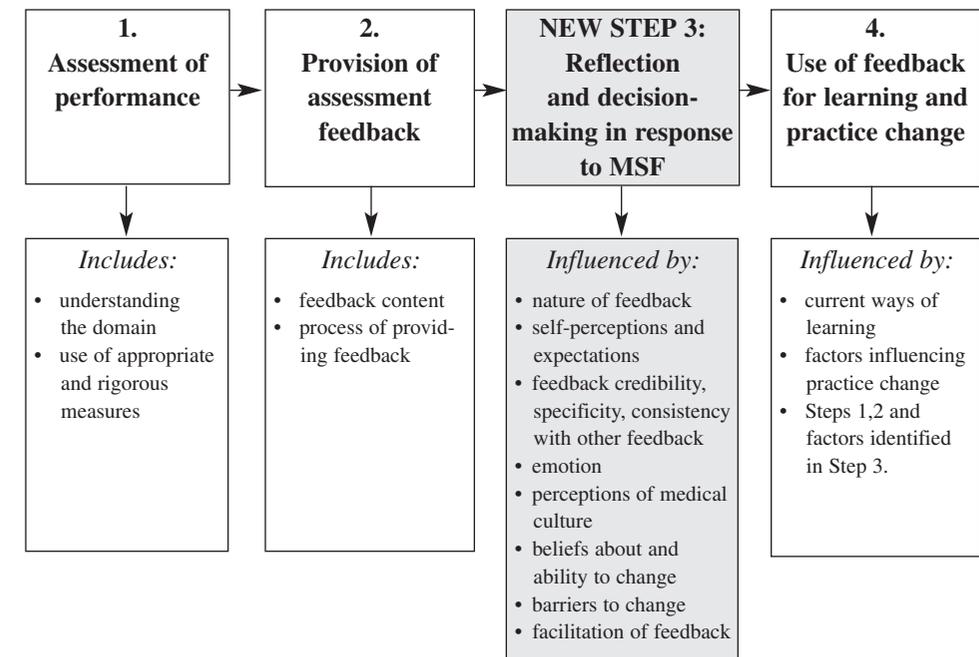
Finally, we undertook our research within the context of formative assessment. Of the three steps included in formative assessment: *assessment of performance*, *provision of assessment feedback* and *use of feedback for learning and change*, we focused our research upon the third, *use of feedback for learning and change*. Each step contains components informed by theory and evidence, Figure 3 (repeated from Chapter 1, pg. 2).

Figure 3: Steps included in formative assessment



We now return to that three-step model. The findings summarized in Figure 1 as the influences upon physicians’ MSF use and Figure 2 as a model of reflection and decision-making in response to MSF, seem to inform activities in which physicians engage **after** receiving their feedback, Step 2, and **before** using their feedback for learning and change, Step 3. As a result, we propose the addition of a new Step in the formative assessment model for understanding physician use of MSF (Figure 4). This new step is *Reflection and decision-making in response to MSF*

Figure 4: Revised model of steps included in formative assessment: Understanding physician use of MSF



and it occurs before physicians use their feedback. Our research leads us to believe that this step has been overlooked in the MSF literature, especially in medical education, and that it is central to physicians' use of MSF.

Study limitations

Several factors limit our research. The first is the volunteer and largely rural nature of the family physician participants and their location within one Canadian province. Similar research should be conducted in other jurisdictions and with other physician populations. However, most of our findings were congruent with MSF research results in business settings. While the focus groups comprised a small convenience sample, a limitation, the interviews included a larger purposive sample representing physicians receiving MSF scores across the range from low to high. Results from the interviews confirmed and explained focus group findings. Additionally, interviews and focus groups were conducted by staff of the local academic CME office and it is possible that this, plus the sensitive nature of some of the content, may have influenced participants to provide socially desirable answers. However, we generally consider this influence unlikely due to the sincerity, commitment and depth of feeling which interview and focus group participants conveyed in their interactions with us. Finally, we were not able to explore all domains (e.g., practice management, professionalism) included in the MSF tool in depth, due to time and resource limitations. We restricted our study to the domains of patient and team communication in which physicians reported making the most changes. Further research should be conducted to explore physician use of their MSF in other domains and compare results with those of this research. Additionally, with respect to the PAR MSF program, there is a need to revisit the questionnaire items and domains developed in 1996, to ensure they reflect current family physician practices. (Personal communication, College of Physicians and Surgeons of Alberta and University of Alberta, September, 2005) As this is done, further research into physician use of the revised domains should also be conducted.

Key conclusions

The most important conclusions of our research, with the most potential for enhancing physicians' use of MSF for learning and change, include the following:

- Family physician use of MSF feedback was influenced by a number of factors. Most important is the negative impact of assessment procedures per-

ceived to lack credibility and of feedback which is insufficiently specific to guide change or learning.

- Conversely, feedback which is credible and specific can guide learning and change even in a domain which is not clearly defined; e.g., communication skills.
- Receiving negative feedback can be distressing and painful, and negative emotional responses can be long-lasting and interfere with MSF use.
- Facilitation of feedback by a skilled professional may increase acceptance and use of MSF. Facilitation which specifically encourages reflection upon both the emotional responses to feedback and feedback content can enhance its assimilation.
- The medical culture appears to contribute to physicians' sensitivity to being assessed, especially by peers, and to sensitivity about how they see themselves as physicians.
- Formative assessment for physicians involving MSF is made up of four steps: 1) assessment of performance, 2) provision of assessment feedback, 3) *reflecting and decision-making in response to MSF*, 4) use of feedback for learning and change. Step 3 results from our research and has been overlooked in the medical education literature.

Implications for practice and research using MSF

In this section we use our key conclusions and other findings to formulate implications for the use of MSF in medical education and for research. We recommend consideration of the following:

Understanding the culture of the medical profession and its influence upon learning and assessment requires further exploration

Educators and psychologists agree that formative assessment, including MSF, may be most effective in a developmental or constructivist culture where learning from others and self-reflection, self-awareness and self-direction are valued and supported.^{7-9,18,28} Our findings suggest that this description may not apply consistently to the medical culture. Medical professionalism promotes a supportive, collegial culture, inferring that socially desirable feedback may be the norm and sharing honest constructive criticism may be less common.²⁹ Medical schools are competitive environments where "getting ahead" often appears to be valued more than sharing

and learning from one's assessments.^{21,22} These factors may influence constructive self and peer assessment and a willingness to learn from them.

Reviewers must be able to observe the reviewee

MSF was designed for use in business environments where reviewers worked closely with those being assessed and directly observed their work and interactions with others. This is the basic premise on which MSF is based. Using assumptions based on inadequate observation to assign scores is discouraged. Given the context in which physicians work, especially physicians in private office practice, selection of reviewers for the specific domains being assessed requires careful attention. An appropriate reviewer is one who can adequately observe and make assessments about the domain in question. For example, for assessing patient communication, the patient seems to be accepted as the most appropriate reviewer. The cost of not ensuring appropriate reviewers is twofold - the feedback may be discounted and not used, and unintended negative responses such as frustration, anger and powerlessness may occur in response to perceptions of unfair assessment procedures. Perceived validity (credibility) of ratings is fundamental to acceptance, and reliability and feasibility do not compensate for lack of validity.³⁰

Considering this, assessing clinical competence using MSF is especially problematic. Because clinical competence is context specific and colleagues rarely are able to observe fellow physicians adequately to fully assess it, physicians in this study recommended that MSF not be used to assess clinical competence. Consistent with the principles of good assessment, they suggested more objective means such as practice audit and chart review be used to assess clinical processes and outcomes.^{31,32} Moreover, using multiple tools to assess the multiple domains of professional performance is consistent with current thinking about assessment.

Alternatively, the possibility exists that MSF could be used to assess clinical competence if medical colleague reviewers were selected who were able to directly observe the particular behaviours being assessed. This may mean observing clinical competence in selected contexts; e.g., care of adult patients with diabetes. Using MSF to assess clinical competence may be more successful in hospital environments where physicians, residents and students have more opportunity to observe each other.

It is hoped that future research in MSF will guide the selection of appropriate reviewers for specific domains.

Feedback must be specific enough to guide improvement

Equally important as ensuring the use of clear and fair assessment procedures is the use of items that provide specific feedback. These can guide performance improvement. They can actually inform physicians of what is expected by making clear and explicit what might be otherwise nebulous and unclear, due perhaps to lack of explicit standards. For example, from patient reviewers, an item like "I am advised re results of tests and X-rays," clearly guides change by informing the physician about the specific performance expectation. Another way to increase specificity of feedback is to request reviewer comments or narrative feedback to explain ratings or provide examples, especially for lower ratings.³³ Comments can add useful information about context and details of the feedback. Practically speaking, including narrative in the feedback report requires additional resources for data management and can also require extra reviewer time which may present difficulties. But, the benefit may warrant the increased costs and time. Further research is needed.

The power of specific and credible feedback can not be overestimated. Its presence can inform an unclear domain and direct change, and its absence can have negative effects. Our findings suggest that feedback which is not specific and credible in a domain believed to be well understood, such as clinical competence, does not inform the recipient or guide change. Conducting similar research in other domains will be important.

The emotional impact of negative feedback requires thoughtful attention and study

We learned that emotional reactions to MSF can be strongly negative and long lasting and can influence acceptance and use of the feedback. Initially this finding surprised us as the medical education literature is relatively silent on emotional reactions to performance feedback, and in fact, on the more general influence of emotions on behaviour. As we read more broadly, we appreciated the influence of emotions. We consider this another important finding, one requiring sensitive consideration when developing performance assessment and feedback programs in medical education. It also requires much thoughtful research. For example, Denisi and Kluger suggest that designing tools and feedback reports to decrease the focus of feedback upon the "self" may decrease the intensity of the emotional response.⁸ Exploring their model and testing this hypothesis and others will be most helpful.

Beliefs about change and ability to change require extensive study

The psychology literature emphasizes the importance of internal factors in learning and changing behaviour, such as personality, feedback orientation, motivation, and beliefs about ability to change. Smither et al (2005) confirmed their influence upon participants' use of MSF.⁷ We did not specifically study these factors but some physicians' receiving negative feedback discussed the influence of their beliefs about change upon making change. The influence of these internal factors on learning and change in medical education, assessment, and performance improvement, especially in response to MSF, has received little attention.

Feedback facilitation strategies which promote growth of the individual require further development and testing

Facilitation of feedback by a knowledgeable person appeared key to feedback acceptance and use. Reflection, with or without facilitation, also seemed to be instrumental to accepting and using MSF feedback and to learning. Reflection enables the assimilation of new information, concepts and values and, when used well, can promote growth of the individual.¹⁴ Feedback facilitation can support and guide the individual's reflective process. It should encourage reflection upon and assimilation of reactions and emotions, and upon interpreting feedback content, identifying learning needs and planning for change. A facilitator can integrate the various factors influencing a physician's reactions to the complex MSF process, explain discrepancies and help the physician to interpret the feedback within the context of his or her individual practice. To emphasize the importance of facilitated feedback for MSF, DeNisi and Kluger suggest that "a coach [facilitator] can be the difference between a healthy coping reaction and learned helplessness" (p.137).⁸ Research is needed to design and test facilitation strategies. However, as using facilitated feedback with MSF substantially increases resource requirements, it will be important to study the conditions under which it is most useful.

Clear and shared understandings of domains of professional performance need to be developed

Orientation to the domains and performance expectations can help physicians to better understand what is expected. Orientation may be especially useful for the less traditional and hence less familiar domains; e.g., team communication and professionalism. It is important for several reasons: 1) lack of knowledge about

non-traditional domains may lead physicians to consider these personality traits rather than learnable skills; 2) enhancing the shared knowledge level of practicing physicians could reduce misunderstandings in these domains, and 3) increased knowledge may enhance individual physician's self-assessment skills in these domains by informing them about the construct being assessed.^{13,23,34} Regarding directions for research, one important area is further exploration of physicians' understandings and perceptions of the less traditional domains of professional performance recently defined by professional bodies; e.g., professional, collaborator roles of the CanMEDs framework.³⁵

The responsibility for facilitating the performance feedback process and feedback use needs to be clearly defined

Currently in Canada, regulatory authorities are legislated to assess physician performance but generally have little formal authority to routinely facilitate performance feedback and improvement, unless physicians are a threat to patient safety or complaints have been received regarding them. Professional associations, such as the College of Family Physicians of Canada and the Royal College of Physician and Surgeons of Canada, are responsible for facilitating continuing professional development of their members, and academic continuing professional development departments regularly assist with this process. However, there is a gap between the assessors on one hand and the educators/ developers on the other, and no one body has responsibility for facilitating formal performance feedback and use.³⁶ To help physicians use their formative assessment, it is important for the regulatory and professional-educational organizations to collaborate to fill this gap. In Nova Scotia, we are working toward this goal.³⁷

In summary, our research suggests that the practical and research implications for the use of MSF for physicians are varied and broad. While on the surface MSF may appear to be a relatively simple and innocuous assessment and feedback process, it is complex with theoretical foundations in cognitive, social and organizational psychology. Using MSF in medical education for physician learning and change may be aided by clarifying and making explicit these theories and the assumptions and procedures arising from them. At this point, it appears as though we are asking physicians with no or little experience or instruction in peer or self-assessment to assess themselves and colleagues they rarely observe in performance, in domains for which standards are unclear, and to accept and use the feedback for learning without assistance, in a culture in which peer and self-assess-

ment and informal learning from assessment and practice are not explicitly valued. We are hopeful that this thesis may lead to further study and clarity.

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Summary



Multi-source feedback
for physician learning and change

Physicians are members of a self-regulating profession accountable to the public for ensuring competent appropriate care. Medical regulatory bodies are legislated to ensure physician competence in practice and do so through formal monitoring and assessment programs. Recently several regulatory bodies have recognized a responsibility to enhance physicians' performance as well as assess it and are adopting programs of a formative nature. One such program is multi-source feedback (MSF). Its intent is to guide behaviour change and performance improvement. Developed in the private sector, MSF provides feedback using questionnaires completed by several reviewer groups (medical colleagues, coworkers, patients) and self-assessment. Reviewers rate the participant on multiple items in several performance domains. Participants receive their compiled feedback by confidential report which provides individual and aggregate mean scores. In medicine, feedback may be facilitated but more frequently is not. Through reviewing their own scores and comparing them with aggregate means, the expectation is that physicians will have a clearer sense of their own performance and needs for learning and change, and develop and implement plans to meet these needs. This thesis explores family physicians' experience and use of a standardized MSF program used by the College of Physicians and Surgeons of Nova Scotia, Canada. In this program, feedback was not facilitated.

Chapter 1, the Introduction, places performance assessment within the broader context of formative assessment and reviews the literature informing it generally and more specifically, MSF. Formative assessment includes three steps. The first, "Assessment of performance", involves understanding the performance domains being assessed and use of appropriate measures for each domain. The second, "Provision of assessment feedback", includes two components, the process used for providing feedback and the feedback content. The third step, "Use of feedback for learning and change" includes appreciation of ways in which physicians currently continue to learn and remain competent, and of factors which influence their decisions to change their practice. Extensive research in MSF in both industry and medical education, has addressed the first step of formative assessment, "Assessment of performance", particularly specific measures and their psychometric properties. However evidence is more limited, especially in medical education, for Steps 2 and 3. This thesis investigates the final step of formative assessment; i.e., the use made of MSF for learning and practice change. Broad research questions and sub-questions include:

- What were physicians' responses to MSF?
 1. How did physicians use their MSF for learning and practice change?
 2. What conditions influenced their use of MSF for learning and practice changes?
- How do physicians learn in practice?
 3. How did physicians perceived to be performing well learn in practice?
 4. How does this learning compare with the learning and responses to MSF described by physicians receiving negative feedback?

As little evidence was available in these areas, we chose exploratory investigative approaches. Chapters 2, 3, 4, 5 describe studies addressing the first research question, "What were physicians' responses to MSF?" and Chapter 6 begins to address the second question, "How do physicians learn in practice?", completed in Chapter 7.

Chapter 2 describes the feasibility study undertaken to determine Nova Scotia family physician participants' initial responses to MSF, including assessment of its value and use of feedback for practice change. The study also assessed reviewers' responses to MSF. It was primarily quantitative in nature. We collected data using the MSF questionnaires (patient, coworker, medical colleague, self) and program evaluation participant and reviewer questionnaires. Consistent with MSF studies in industry and medical education, physicians generally received high scores from each reviewer group (on a 5-point Likert scale, mean scores were >4.0 for 85 of 88 items). Most believed that their report was useful and about 60% reported that they had made or were intending to use it to make practice changes. These changes were mainly in patient communication and secondly, in team communication. Several results surprised us. One was the positive correlation between familiarity ratings and medical colleague and coworker mean ratings; i.e., reviewers who knew physician participants better rated them higher. Physician participants also agreed less with colleague feedback than they did with coworker or patient feedback, and their agreement was positively correlated with their scores, suggesting that those who might most benefit from their feedback may agree with it the least.

We undertook the qualitative study described in **Chapter 3** to explore the results of Chapter 2, particularly physicians' reactions to MSF and the perceptions influencing their reactions. A review of industry studies of recipients of performance feedback revealed that feedback was not always accepted or used, especially if it were negative. We conducted the study using focus groups with 15 physician participants from

the MSF feasibility study. While participants agreed that MSF should be used to enhance performance and generally agreed with their patients' feedback, their responses to coworker and particularly medical colleague feedback ranged from positive through negative. Several responding negatively expressed strong negative emotions and did not agree with their feedback nor were inclined to use it. Participants' responses were influenced by perceptions of feedback accuracy, credibility and usefulness. These results confirmed those of industry studies and our earlier concerns that feedback perceived as negative might not be readily accepted. Our findings also suggested reasons for this happening, and alerted us to the sensitivity of negative performance feedback.

The results of the study described in Chapter 3 highlighted the need for further in-depth exploration of physicians' responses to and uses of MSF. We recruited from the feasibility study population a larger purposive sample of physician participants (n=28) who received scores across the range from high to low. For the studies described in Chapters 4 and 5, we conducted detailed interviews with these physicians using open-ended questions.

The purpose of the study in **Chapter 4** was to increase understanding of the consequential validity of MSF; i.e., its ability to produce intended outcomes related to learning and change. We did this by exploring how physicians had used their feedback and the conditions influencing their use. Of the 28 physicians, 15 interpreted their feedback as positive; i.e., as confirming current practice, and did not make changes. Thirteen interpreted it as negative; i.e., not confirming their practice and indicating a need for change. Seven of these reported using their feedback for change and/or learning. They most commonly reported making changes in patient and team communication and least commonly, in clinical competence. They also reported making changes most frequently in response to patient reviewers and least frequently, in response to medical colleagues. Conditions positively influencing change included receiving specific feedback which was consistent with other sources of feedback from credible reviewers; i.e., those who were able to observe the domains in question. To improve acceptability and use of MSF, participants recommended that reviewers be able to observe the behaviours in question, and that items be worded specifically. As clinical competence is context specific, they suggested that MSF not be used to assess this domain but other less subjective measures, such as chart audit, be used.

The purpose of **Chapter 5** was to explore in more depth physicians' sensitivities and emotional reactions to MSF, discovered in Chapter 2. The influence of emo-

tion upon behaviour has received limited attention in medical education. We specifically wished to explore participants' emotional reactions and sources of emotions, the influence of these upon feedback acceptance and use, and participants' suggestions to enhance feedback assimilation and use. Emotional reactions to MSF appeared to be elicited in response to an internal comparison of their feedback with self-perceptions of performance. Those agreeing with their feedback; i.e., perceiving it as generally consistent with or higher than self-perceptions responded positively, while those disagreeing with their feedback; i.e., seeing it as generally inconsistent with or lower than self-perceptions, generally responded with emotional distress. The distress was often strong and long-lasting. Some who initially disagreed with their feedback eventually accepted and used it for change following a long period of reflection. Others did not change and described an equally long reflective period which focused on and questioned MSF procedures rather than addressed feedback use. Some reported still reflecting on their feedback two years after receiving it, a testament to its strong and sensitive nature. Reflection was integral to response processes. Participants suggested that feedback be facilitated by a knowledgeable professional to aid reflection, assimilation of troubling emotions, and interpretation and use of feedback.

Chapter 6 presents the qualitative study undertaken to answer our second broad research question, "How do physicians learn in practice?". We conducted in-depth interviews with 12 physician participants receiving high scores (i.e., highly positive feedback) in the feasibility study. Our assumption in selecting these physicians was that physicians receiving high ratings from medical colleagues, coworkers and patients; i.e., those perceived by others to be performing well, could offer insight into effective approaches for continued learning. Research objectives were to explore how these physicians learned in practice and maintained their competence, and how they learned about the communication skills domain specifically. These physicians appeared to share common characteristics of learning in practice. They were reflective, self-aware, self-directed learners and although they used formal continuing education programs to varying degrees, informal learning appeared more fundamental. They were stimulated to learn by and learned from patients and other members of the health care team, especially medical colleagues. Their learning from practice reflected current models of informal learning; however, informal learning in medicine is poorly conceptualized and largely unrecognized. Two additional findings were surprising. These were that participants' perceptions of competence appeared limited to the clinical domain, and they perceived communication skills as innate personality characteristics rather than

learned skills. In **Chapter 7**, we discuss these findings in light of responses of participants receiving negative feedback.

Chapter 7 also summarizes overall conclusions in response to the research questions, and from these, proposes models to aid in considering physicians' responses to and use of MSF and more generally, formative assessment. In summary, the influences upon participants' decisions to accept and use their feedback include the nature of the feedback (positive or negative); its credibility, specificity, and consistency with other sources of performance feedback; emotional reactions to feedback and facilitation of feedback. We also noted two other more subtle influences: participants' perceptions of the medical culture and their beliefs about their ability to change. Regarding physician learning in practice, by comparing the learning patterns of high-scoring physicians receiving very positive feedback with learning responses to MSF described by participants receiving negative feedback, we determined that being reflective was characteristic of both groups. Reflection appeared to be instrumental in accepting and using feedback and in learning.

We concluded that physicians used MSF for learning and improvement under specific conditions. Their use of MSF was complex, it was influenced by multiple factors and reflection appeared central. To aid in understanding, we proposed two models, one showing the multiple factors influencing use of MSF and the second, the reflective and decision-making process physicians used in response to MSF. Finally, we returned to the three-step model for formative assessment introduced in Chapter 1. This thesis focused on the third step, "Use of feedback for learning and change." We now propose that the research conclusions support the addition of a new step before the final step, entitled "Reflection and decision-making in response to MSF." This new step incorporates the influences upon MSF use and the reflective process physicians engaged in before they decide to use their feedback. These features have been overlooked in the MSF literature, especially in medical education, and we suggest that they are central to physicians' use of MSF. Finally, Chapter 7 discusses research limitations, and implications for using MSF in practice and for research.

Samenvatting



Samenvatting: Multi-source feedback voor artsen als stimulans tot leren en verandering

Artsen maken deel uit van een zichzelf regulerende beroepsgroep, die een maatschappelijke verantwoordelijkheid heeft om op deskundige wijze passende zorg te verlenen. Het is wettelijke verplichting om regulerende instanties voor de geneeskunde in te stellen. Deze voeren formele controle- en beoordelingsprogramma's uit om te waarborgen dat artsen voldoende competent zijn om het beroep van arts uit te oefenen. Verschillende regulerende instanties hebben onlangs erkend dat hun verantwoordelijkheid zich niet beperkt tot het beoordelen van beroepsuitoefening, maar zich ook uitstrekt tot verbetering daarvan. Hiervoor worden formatieve beoordelingsmethoden gehanteerd, waaronder feedback uit verschillende bronnen, de zogenaamde multi-source feedback (MSF). Het doel van deze vorm van feedback is om gedragsverandering te bevorderen en de beroepsuitoefening te verbeteren. MSF komt voort uit de particuliere sector en bestaat uit feedback door middel van vragenlijsten ingevuld door verschillende groepen beoordelaars (collega-artsen, medewerkers, patiënten) en uit zelfbeoordeling. De deelnemers worden beoordeeld op een aantal items betreffende verschillende aspecten van hun functioneren. Zij ontvangen een vertrouwelijk verslag van alle feedback met hun persoonlijke scores en de totale scores van alle deelnemers. Binnen de geneeskunde wordt feedback soms gestimuleerd, maar dit is niet algemeen gebruikelijk. Bij MSF wordt ervan uitgegaan dat artsen, doordat ze hun eigen scores kunnen vergelijken met de gemiddelde groepsscores, een beter beeld krijgen van hun persoonlijk functioneren, hun leerbehoeften en gewenste veranderingen en dat dit hen zal aanzetten tot het maken en uitvoeren van plannen voor leren en verandering. Het onderzoek dat beschreven wordt in dit proefschrift werd uitgevoerd onder huisartsen. Het betreft hun ervaringen met en het toepassen van feedback in het kader van een gestandaardiseerd MSF-programma dat gebruikt wordt door het College of Physicians and Surgeons in Nova Scotia, Canada. Het programma voorziet niet in begeleiding bij het feedbackproces.

Hoofdstuk 1. In dit inleidende hoofdstuk wordt het beoordelen van de beroepsuitoefening in het bredere kader van formatief beoordelen geplaatst. Er wordt een literatuuroverzicht gegeven over formatief beoordelen in het algemeen en MSF in het bijzonder. Bij formatief beoordelen worden drie fasen onderscheiden. De eerste fase betreft het 'Beoordelen van het functioneren,' waarvoor inzicht nodig is in de te beoordelen aspecten van het functioneren en geschikte meetinstrumenten voor de verschillende aspecten. In de tweede fase gaat het over 'Het geven van feedback op het functioneren.' Deze fase bestaat uit twee delen: de procedure en de inhoud van de feedback. De derde fase, 'Feedback gebruiken voor leren en veranderen', behelst inzicht in de gangbare manieren waarop artsen hun kennis en

competenties op peil houden en in factoren die een rol spelen bij beslissingen om de beroepsuitoefening aan te passen. Onderzoeken op het gebied van MSF in het bedrijfsleven en het medisch onderwijs hebben zich vooral beziggehouden met de eerste fase van formatief beoordelen, 'Beoordelen van het functioneren'. Hierbij is veel aandacht besteed aan specifieke meetinstrumenten en de bijbehorende psychometrische eigenschappen. Over de tweede en derde fase is, vooral in het medisch onderwijs, minder bekend. Het onderzoek dat beschreven wordt in dit proefschrift is gericht op de laatste fase van formatief beoordelen, 'Het gebruik van MSF voor leren en veranderen in de praktijk'.

Het doel van het onderzoek was om antwoord te geven op de volgende hoofd- en deelvragen.

Hoe reageren artsen op MSF?

1. Hoe gebruikten de artsen MSF als aanleiding tot leren en aanpassingen in de beroepsuitoefening?
2. Welke omstandigheden waren van invloed op het gebruik van MSF als aanleiding tot leren en aanpassingen in de beroepsuitoefening?

Hoe leren artsen in de praktijk?

3. Hoe leerden de artsen wiens functioneren in de praktijk als goed werd beoordeeld?
4. Waarin verschilde dit van het leren en de reacties op MSF van de artsen die negatieve feedback kregen?

Omdat er op dit gebied weinig bewijsmateriaal voorhanden is, hebben wij een exploratief onderzoek uitgevoerd. Hoofdstuk 2, 3, 4 en 5 beschrijven onderzoek dat ingaat op de eerste hoofdvraag: Hoe reageren artsen op MSF? Hoofdstuk 6 beschrijft de eerste fase van het onderzoek naar aanleiding van de tweede hoofdvraag: 'Hoe leren artsen in de praktijk?' De afronding van dit onderzoek wordt beschreven in Hoofdstuk 7.

Hoofdstuk 2 beschrijft een haalbaarheidsonderzoek onder huisartsen uit Nova Scotia met betrekking tot MSF. Het onderzoek betrof de eerste reacties van de deelnemende huisartsen, de waarde van MSF en het gebruik ervan voor veranderingen in de beroepspraktijk. Ook werd gekeken naar de reactie van de beoorde-

laars op MSF. Het onderzoek was overwegend kwantitatief. De gegevens waren afkomstig van de vragenlijsten voor de verschillende groepen die MSF gaven (patiënten, medewerkers, collega-artsen, de artsen zelf) en van de vragenlijsten voor de programma-evaluatie die ingevuld werden door de deelnemers en de beoordelaars. De resultaten van dit onderzoek waren vergelijkbaar met bevindingen van onderzoek naar MSF in het bedrijfsleven en het medisch onderwijs. Over het algemeen kregen de artsen hoge scores van elke groep beoordelaars (85 van de 88 items gaven een gemiddelde score te zien van >4.0 op een vijfpunts-Likertschaal). De meeste artsen vonden het feedbackverslag nuttig en ongeveer 60% gaf aan dat zij naar aanleiding van het verslag hun praktijkuitoefening hadden aangepast of van plan waren dit te doen. De aanpassingen hadden hoofdzakelijk betrekking op communicatie met patiënten en verder op communicatie binnen het team. Het onderzoek leverde verschillende verrassende resultaten op. Zo gaven de scores op het item waarin gevraagd werd hoe goed beoordelaars de te beoordelen arts kenden, een positieve correlatie te zien met het gemiddelde oordeel van collega-artsen en medewerkers. Met andere woorden, beoordelaars die een deelnemende arts beter kenden, gaven hogere scores. De deelnemende artsen stemden minder vaak in met feedback van collega-artsen dan met feedback afkomstig van medewerkers of patiënten, en instemming met feedback was positief gecorreleerd met de aard van de beoordeling. Mogelijk wordt de geringste mate van instemming met feedback gevonden onder degenen die er het meest van zouden kunnen profiteren.

In **Hoofdstuk 3** wordt een kwalitatief focusgroeponderzoek beschreven waarin de resultaten van Hoofdstuk 2 nader zijn verkend. Het doel was om inzicht te krijgen in de reactie van artsen op MSF en de ideeën die hierbij een rol spelen. Uit een overzichtsartikel over acceptatie van feedback op functioneren in het bedrijfsleven bleek dat vooral negatieve feedback niet altijd geaccepteerd of gebruikt werd. Uit een focusgroeponderzoek onder vijftien artsen die deelnamen aan het onderzoek naar de haalbaarheid van MSF, kwam naar voren dat de deelnemers van mening zijn dat MSF gebruikt moet worden om de beroepsuitoefening te verbeteren en dat zij het meestal eens zijn met de feedback die patiënten geven. Reacties op feedback van medewerkers en vooral van collega-artsen varieerden van positief tot negatief. Verschillende deelnemers gaven op negatieve wijze uiting aan sterke negatieve emotionele reacties en waren het oneens met de feedback en niet van plan er iets mee te doen. Deze resultaten bevestigen zowel de bevindingen van onderzoek in het bedrijfsleven als onze eerdere vermoedens dat feedback die als negatief wordt ervaren niet makkelijk geaccepteerd wordt. Onze bevindingen

geven ook aanwijzingen waarom dit zo zou kunnen zijn en maakten ons erop attent hoe gevoelig negatieve feedback op functioneren kan liggen.

De resultaten van het onderzoek dat in Hoofdstuk 3 beschreven wordt, onderstrepen het belang van diepgaand onderzoek naar de reacties van artsen op en het gebruikmaken van MSF. Het onderzoek werd uitgevoerd bij een grotere steekproef uit de deelnemende huisartsen (n=28). De steekproef was zo samengesteld dat hierin artsen vertegenwoordigd waren met feedbackscores die varieerden van hoog tot laag. Voor de onderzoeken die in hoofdstuk 4 en 5 beschreven worden, zijn uitvoerige interviews afgenomen bij deze artsen, waarbij open vragen werden gesteld.

Het doel van het onderzoek dat in **Hoofdstuk 4** beschreven wordt, was het verkrijgen van inzicht in de consequentiële validiteit van MSF, dat wil zeggen er werd onderzocht of de beoogde effecten met betrekking tot leren en veranderen gerealiseerd werden. Hiertoe gingen wij na wat artsen met de feedback deden en welke factoren hierbij een rol speelden. Vijftien van de 28 deelnemende artsen vonden de feedback positief en zagen deze als bekrachtiging van hun huidige beroepsuitoefening. Zij veranderden dan ook niets. Dertien deelnemende artsen interpreteerden de feedback als negatief, met andere woorden er was geen goedkeuring voor hun huidige beroepsuitoefening en er werd aangegeven dat verandering nodig was. Zeven van hen gaven aan dat ze gebruikmaakten van de feedback om te veranderen en/of ervan te leren. De meesten van deze zeven verklaarden dat ze veranderingen hadden doorgevoerd in de communicatie met patiënten en het team en een minderheid maakte melding van veranderingen in klinische competentie. Tevens gaven deze artsen aan dat de meeste veranderingen ingegeven waren door patiëntenoordelen en dat reacties van collega-artsen het minst aanleiding hadden gevormd tot verandering. Verandering werd positief beïnvloed door gerichte feedback die bovendien bevestigd werd door andere geloofwaardige bronnen, zoals beoordelaars die het functioneren op de betreffende gebieden konden observeren. Om de aanvaardbaarheid van MSF te verbeteren en de toepassing ervan te bevorderen adviseerden de deelnemers observatie door beoordelaars van het te beoordelen gedrag en preciezere formulering van items. Omdat klinische competentie contextgebonden is, stelden zij voor om dit niet te beoordelen met behulp van MSF, maar met andere, minder subjectieve, instrumenten, bijvoorbeeld het controleren van patiëntenkaarten.

In **Hoofdstuk 5** wordt een onderzoek beschreven naar de gevoeligheden en emotionele reacties van de artsen op MSF, die in Hoofdstuk 2 naar voren kwamen. De invloed van emoties op gedrag krijgt in het medisch onderwijs weinig aandacht. We wilden vooral aandacht besteden aan de emotionele reacties en waardoor deze werden opgeroepen bij de deelnemers; hoe dit van invloed was op acceptatie en gebruik van feedback; en ideeën van de deelnemers over manieren waarop acceptatie en gebruik van feedback verbeterd zouden kunnen worden. Emotionele reacties op MSF bleken opgeroepen te worden door innerlijke vergelijking van de feedback met de eigen opvatting over het functioneren. De artsen die het eens waren met de feedback, dat wil zeggen die vonden dat de feedback grotendeels overeenkwam met of positiever was dan hun eigen inschatting, reageerden positief, maar de artsen die het niet eens waren met de feedback, dat wil zeggen die vonden dat deze grotendeels afweek van of negatiever was dan hun eigen inschatting, gaven over het algemeen reacties die gekenmerkt werden door negatieve emoties. Deze waren vaak heftig en langdurig. Enkele artsen die het aanvankelijk niet eens waren met de feedback accepteerden deze na langdurige reflectie uiteindelijk toch en gebruikten de feedback om veranderingen te bewerkstelligen. Anderen veranderden weliswaar niet, maar beschreven een even langdurige periode van reflectie, die echter meer betrekking had op de MSF procedures en vraagtekens die daarbij gezet konden worden dan op wat zij zelf konden doen met de feedback. Sommigen gaven aan dat ze er nog steeds over nadachten twee jaar na het ontvangen van de feedback, hetgeen aangeeft hoe ingrijpend en gevoelig dit ligt. Reflectie was een integraal onderdeel van het reactieproces. De deelnemers stelden voor om het feedbackproces te laten begeleiden door een deskundige ter ondersteuning van reflectie, verwerking van pijnlijke emoties en interpretatie en toepassing van de feedback.

Hoofdstuk 6 beschrijft een kwalitatief onderzoek over de tweede hoofdvraag: 'Hoe leren artsen in de praktijk?'. We namen diepte-interviews af bij twaalf deelnemers aan het haalbaarheidsonderzoek die hoog hadden gescoord (zeer positieve feedback). De reden om deze groep artsen te onderzoeken was de veronderstelling dat artsen die door collega's, medewerkers en patiënten positief worden beoordeeld, met andere woorden die in de ogen van anderen goed presteren, inzicht kunnen bieden in effectieve strategieën voor permanent leren. Het doel van dit onderzoek was om na te gaan hoe deze artsen in de praktijk leren en hun competentie op peil houden en met name hoe zij leren met betrekking tot communicatievaardigheden. Deze artsen bleken gemeenschappelijke kenmerken te vertonen ten aanzien van leren in de praktijk. Zij reflecteerden, waren zich bewust van

hun eigen functioneren, leerden zelfgestuurd en, hoewel ze ook in wisselende mate formele na- en bijscholingsprogramma's volgden, leek informeel leren voor hen van wezenlijker belang. Zij werden aangezet tot leren door en leerden van patiënten en andere leden van het zorgteam, vooral medische collega's. Hun manier van leren in de praktijk weerspiegelde de gangbare modellen voor informeel leren. In de geneeskunde is het concept informeel leren weinig ontwikkeld en over het algemeen onbekend. Twee andere bevindingen zijn interessant. De opvattingen van de deelnemers over competentie bleken zich te beperken tot het klinisch domein; de deelnemers zagen communicatievaardigheden als aangeboren persoonlijkheidskenmerken en niet als aangeleerde vaardigheden. In **Hoofdstuk 7** bespreken we deze bevindingen in het licht van de reacties van de deelnemers die negatieve feedback kregen.

Hoofdstuk 7 geeft daarnaast een samenvatting van de algemene conclusies ten aanzien van de onderzoeksvragen. Op basis hiervan zijn modellen ontwikkeld die behulpzaam kunnen zijn bij het beoordelen van reacties van artsen op en toepassing van MSF in het bijzonder en formatieve beoordeling in het algemeen. Samenvattend, onder de factoren die een rol spelen bij acceptatie en toepassing van feedback zijn: de aard van de feedback (positief of negatief), de geloofwaardigheid, specificiteit en overeenstemming met feedback uit andere bronnen; emotionele reacties op feedback en deskundige begeleiding bij het feedbackproces. We vonden nog twee andere, subtielere, factoren, namelijk de opvatting van de deelnemers ten aanzien van de medische cultuur en hun geloof in de eigen mogelijkheden om te veranderen. Met betrekking tot het leren van artsen in de praktijk kwamen wij, op basis van vergelijking tussen de leerpatronen van hoogscorende artsen die positieve feedback kregen enerzijds en de reacties op MSF van deelnemers die negatieve feedback kregen anderzijds, tot de conclusie dat beide groepen gemeen hebben dat zij reflecteerden naar aanleiding van MSF. Reflectie bleek een rol te spelen bij acceptatie en toepassing van feedback en bij het leren.

Samengevat is de conclusie dat er bepaalde omstandigheden zijn die bepalen of artsen MSF gebruiken om te leren en hun beroepsuitoefening te verbeteren. Toepassing van MSF is een complex proces waarbij verschillende factoren betrokken zijn en reflectie centraal lijkt te staan. Wij stelden voor om twee modellen te hanteren die inzicht kunnen bieden in dit proces. Het ene model laat de verschillende factoren zien die de toepassing van MSF beïnvloeden en het tweede model de reflectieve en besluitvormingsprocessen van de artsen naar aanleiding

van MSF. Ten slotte keerden wij terug naar het driefasenmodel voor formatieve beoordeling uit hoofdstuk 1. De derde fase uit dit model, 'Feedback gebruiken voor leren en veranderen', staat centraal in dit proefschrift. Naar aanleiding van de resultaten stellen wij voor om voorafgaand aan de laatste fase een extra fase in te voegen, te weten 'Reflectie en besluitvorming naar aanleiding van MSF'. Deze fase betreft factoren die van invloed zijn op de toepassing van MSF en de belangrijke reflectieprocessen van de artsen tijdens de besluitvorming over het al of niet toepassen van feedback. In de literatuur over MSF, vooral in het medisch onderwijs, zijn deze aspecten over het hoofd gezien. Onze stelling is dat zij de kern vormen van de toepassing van MSF door artsen. Tot slot worden in hoofdstuk 7 de beperkingen van het onderzoek en de conclusies ten aanzien van de toepassing van MSF in de praktijk en onderzoek besproken.

Appendix A



Multi-source feedback (MSF) documents used in this research

Included are the MSF questionnaires and excerpts of the physician report used by the College of Physicians and Surgeons of Nova in the study of the Nova Scotia Physician Achievement Review program (NSPAR), 2002:

1. Patient questionnaire
2. Coworker questionnaire
3. Medical Colleague questionnaire
4. Self-assessment questionnaire (uses same items as Medical Colleague questionnaire)
5. NSPAR report (sample pages only)



NSPAR
PILOT PROJECT

Patient Questionnaire

Gender: Male Female
Age:
 25 or under 45-54
 26-34 55-64
 35-44 65 and over

Over the last five years how often have you seen this doctor? Once 2-3 times Over 3 times
Today's visit is mainly for:
 New concern Ongoing concern Examination

Physician's Name: Dr. _____

Marking Instructions

Please indicate your answer by filling in the bubbles like this, ● **not** like ☒ or ☑. Thank you!

Interpretation of the Rating Scale
 Answer the questions about this doctor using the following:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Not Applicable
1	2	3	4	5	NA

Based on the MOST RECENT VISIT to your doctor:

	1	2	3	4	5	NA
1. Your doctor explained your illness or injury to you thoroughly	<input type="radio"/>					
2. Your doctor adequately explained your treatment choices	<input type="radio"/>					
3. Your doctor clearly explained your problem and how to avoid it in the future	<input type="radio"/>					
4. Your doctor explained when to return for follow-up care	<input type="radio"/>					

If your doctor gave you a prescription for medicine:

	1	2	3	4	5	NA
5. Your doctor clearly explained how and when to take your medicine	<input type="radio"/>					
6. Your doctor told you of any side effects of the medicine	<input type="radio"/>					

Based on ALL OF YOUR VISITS to your doctor's office, how do you feel about your doctor's attitude and behavior towards you? My doctor:

	1	2	3	4	5	NA
7. Spends enough time with me	<input type="radio"/>					
8. Shows interest in my problems	<input type="radio"/>					
9. Asks details about my personal life, when appropriate	<input type="radio"/>					
10. Answers my questions well	<input type="radio"/>					
11. Examines me appropriately for my problems	<input type="radio"/>					
12. Treats me with respect	<input type="radio"/>					
13. Helps me with my fears and worries	<input type="radio"/>					
14. Talks with me about treatment plans	<input type="radio"/>					

	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5	Not Applicable NA
Rate each statement about your doctor's office. The office:						
15. Is easy to get into (e.g. parking, wheelchair, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Has sufficient waiting areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Examining rooms are adequately sized and have adequate equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Is clean and in good repair	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Provides adequate privacy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How do you feel that your doctor runs his or her practice?						
Telephone:						
20. It is easy to reach the office by phone during the day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. I am able to reach a doctor by telephone after office hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. In urgent cases, a doctor is available by phone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Staff:						
23. Is very capable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Is helpful and pleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Is respectful of patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Behaves in a professional manner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Works well with my doctor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. Prevents patients from hearing confidential information about other patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Office Practices:						
29. I can get an appointment quickly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. I do NOT wait long in the reception area for my appointment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. When asked, my doctor provides reports, files, or copies of letters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. I am advised of results of tests or x-rays	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. My doctor arranges appointments with specialists when necessary	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. Someone from my doctor's office follows-up on any serious problems I may have	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. I am told what to do if my problems do not get better	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
General:						
36. My physician talks to me about preventative care (e.g. quitting smoking, weight control, sleeping, alcohol, exercise, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. My doctor asks regularly about prescription and non-prescription medicine I may be taking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. My doctor has printed health information available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. I would go back to this doctor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. I would send a friend to this doctor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Co-Worker Questionnaire

Assessed Physician's Name: Dr. _____

Your Name: _____

Marking Instructions

Please indicate your answer by filling in the bubbles like this, ● **not like** ⊗ or ☑. Thank you!

Interpretation of the Rating Scale

Rate this physician on the following performance statements according to the following scale. This form is used by a variety of physicians' co-workers (e.g. nurses, psychologists, pharmacists). Therefore, not all the following items may be relevant to you. If any of the items are not relevant to you, mark these "Unable to Assess".

How well do you know this physician (Mark one)?	Compared to the physicians I know, this one is:					
	Among the Worst 1	Bottom Half 2	Average 3	Top Half 4	Among the Best 5	Unable to Assess UA
<input type="radio"/> Not at All <input type="radio"/> Not Well <input type="radio"/> Somewhat <input type="radio"/> Well <input type="radio"/> Very Well						
1. Communicates effectively with patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Verbal communication with other health professionals is effective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Written communication with other health professionals is effective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Writes prescriptions clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Is courteous to co-workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Respects the professional knowledge and skills of co-workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Makes appropriate use of community resources for psychosocial aspects of illness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Shows compassion to patients and their families	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Is non-judgmental of patients and their families	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Is courteous to patients and their families	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Respects the rights of patients to make informed decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Accepts responsibility for professional actions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Accepts responsibility for patient care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Collaborates well with co-workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Is available to patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Maintains confidentiality of patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Available for consultation about mutual patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Medical Colleague Questionnaire

Assessed Physician's Name: Dr. _____

Your Name: _____

Marking Instructions

Please indicate your answer by filling in the bubbles like this, ● **not like** ⊗ or ☑. Thank you!

How would you describe your professional relationship to this physician (select one)?

- Peer (similar practice)
- Consultant
- Referring Physician

Interpretation of the Rating Scale

Rate your colleague on the performance statements according to the following scale.

How well do you know this physician (Mark one)?	Compared to other physicians I know, this one is:					
	Among the Worst 1	Bottom Half 2	Average 3	Top Half 4	Among the Best 5	Unable to Assess UA
<input type="radio"/> Not at All <input type="radio"/> Not Well <input type="radio"/> Somewhat <input type="radio"/> Well <input type="radio"/> Very Well						
1. Communicates effectively with patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Communicates effectively with patients' families	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Communicates effectively with other health care professionals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Within the range of services provided by this physician, he/she performs technical procedures skillfully	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Within the range of services provided by this physician, he/she demonstrates appropriate judgement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Selects diagnostic tests appropriately	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Critically assesses diagnostic information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Makes the correct diagnosis in a timely fashion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Selects the appropriate treatment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Maintains quality medical records	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Handles transfer of care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Refers patients in an appropriate manner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Is willing to accept patient back from consultant for continuing care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Provides a clear understanding about who is responsible for continuing care of the patient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Communicates referral information to patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Compared to other physicians I know, this one is:					
	Among the Worst 1	Bottom Half 2	Average 3	Top Half 4	Among the Best 5	Unable to Assess UA
16. Recognizes psychosocial aspects of illness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Makes appropriate use of community resources for psychosocial aspects of care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Makes appropriate referrals for psychosocial aspects of illness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Manages patients with complex psychosocial problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Manages patients with complex medical problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Coordinates care effectively for patients with other health professionals and physicians	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Shows compassion for patients and their families	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Maintains confidentiality of patients and their families	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Respects the rights of patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Collaborates with medical colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Is involved with professional development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Accepts responsibility for own professional action	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. Manages health care resources efficiently	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. Manages personal stress	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. Is aware of own shortcomings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. Participates in a system of call to provide care for patients outside of regular office hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Self Assessment Questionnaire

Name: Dr. _____

Marking Instructions

Please indicate your answer by filling in the bubbles like this, ● **not** like ☒ or ✓. Thank you!

Interpretation of the Rating Scale
The following statements describe physician behaviors. Rate yourself on these statements using the scale to the right.

Compared to other physicians you know, rate your performance for each statement:

	Among the Worst 1	Bottom Half 2	Average 3	Top Half 4	Among the Best 5	Unable to Assess UA
1. I communicate effectively with patients	<input type="radio"/>					
2. I communicate effectively with patients' families	<input type="radio"/>					
3. I communicate effectively with other health care professionals	<input type="radio"/>					
4. Within the range of services provided by me, I perform technical procedures skillfully	<input type="radio"/>					
5. Within the range of services provided by me, I demonstrate appropriate judgement	<input type="radio"/>					
6. I select diagnostic tests appropriately	<input type="radio"/>					
7. I critically assess diagnostic information	<input type="radio"/>					
8. I make the correct diagnosis in a timely fashion	<input type="radio"/>					
9. I select the appropriate treatment	<input type="radio"/>					
10. I maintain quality medical records	<input type="radio"/>					
11. I handle transfer of care	<input type="radio"/>					
12. I refer patients in an appropriate manner	<input type="radio"/>					
13. I am willing to accept a patient back from a consultant for continuing care	<input type="radio"/>					
14. I provide a clear understanding about who is responsible for continuing care of the patient	<input type="radio"/>					
15. I communicate referral information to patients	<input type="radio"/>					
16. I recognize psychosocial aspects of illness	<input type="radio"/>					

139

Compared to other physicians you know, rate your performance for each statement:

	Among the Worst 1	Bottom Half 2	Average 3	Top Half 4	Among the Best 5	Unable to Assess UA
17. I make appropriate use of community resources for psychosocial aspects of care	<input type="radio"/>					
18. I make appropriate referrals for psychosocial aspects of illness	<input type="radio"/>					
19. I manage patients with complex psychosocial problems	<input type="radio"/>					
20. I manage patients with complex medical problems	<input type="radio"/>					
21. I coordinate care effectively for patients with other health professionals and physicians	<input type="radio"/>					
22. I show compassion for patients and their families	<input type="radio"/>					
23. I maintain confidentiality of patients and their families	<input type="radio"/>					
24. I respect the rights of patients	<input type="radio"/>					
25. I collaborate with medical colleagues	<input type="radio"/>					
26. I am involved with professional development	<input type="radio"/>					
27. I accept responsibility for my professional action	<input type="radio"/>					
28. I manage health care resources efficiently	<input type="radio"/>					
29. I manage personal stress	<input type="radio"/>					
30. I am aware of my own shortcomings	<input type="radio"/>					
31. I participate in a system of call to provide care for patients outside of regular office hours	<input type="radio"/>					

Nova Scotia
Physician Achievement Review
Pilot Project

Report for
Dr. Doctor's Name

File Number # SAMPLE PAGES ONLY

Table of Contents

Introduction	2
Overview of the Nova Scotia Physician Achievement Review Pilot Project	3
What is the NSPAR Pilot Project?	3
Who participated in the NSPAR Pilot Project?	3
Has anything like NSPAR been tried elsewhere?	3
How is the confidentiality of Pilot volunteers maintained?	3
Could the College use the NSPAR Pilot questionnaire findings to discipline me?	4
Could the NSPAR report be used against me (or for me) if there is a complaint against me to the College or if I am sued?	4
What do NSPAR Pilot volunteers get?	4
What happens when the NSPAR Pilot Project has concluded?	4
What does NSPAR assess?	5
Interpreting your profile	5
Minimum requirements for analysis	5
Check your personal scores	6
Benchmark your performance	6
Read the flags	6
What if I have questions?	7
Medical Colleague Assessment Section	8
Attribute Descriptions	9
Clinical Competency	10
Psychosocial Management of Patients	10
Patient Interaction	11
Professional Self Management	11
Consultation Communication	12
Co-Worker Assessment Section	13
Attribute Descriptions	13
Patient Interaction	14
Co-worker Collegiality	14
Co-worker Communication	15
Patient Assessment Section	16
Attribute Descriptions	17
Patient Interaction	18
Phone Communication	18
Information for Patients	19
Personal Communication	19
Office Staff	20
Physical Office	20
Appointments	21
Self-Assessment Section	22

What does NSPAR assess?

NSPAR questionnaires cover thirteen attributes of your performance:

- Clinical Competency
- Patient Interaction
- Professional Self Management
- Consultation Communication
- Psychosocial Management of Patients
- Co-worker Communication
- Co-worker Collegiality
- Information for Patients
- Personal Communication
- Appointments
- Phone Communication
- Office Staff
- Physical Office

Several questions explore each attribute. Those groups of questions are both statistically and logically linked, adding credence to the findings. The specific topics covered by each responding group vary slightly, to capture the differing insights of patients, co-workers and colleagues.

Interpreting your profile

In the graphs on the following pages, you'll find two distinct pieces of information: your own scores and a comparison of your scores to benchmarks set by other Nova Scotia physicians. The scores are broken into three sections, reflecting the feedback of each responding group: your medical colleagues, your co-workers and your patients. Finally, a two-page listing compares your self-assessment with others' perceptions and with the benchmark average for each attribute.

Minimum requirements for analysis

In order to calculate your scores and compare them to other NSPAR participants, it is necessary that you meet the minimum criteria for each section. If responses were received from fewer than 6 coworkers, 6 medical colleagues or 18 patients, the results cannot be calculated, as they would be unreliable. If this situation occurred, you will have received a message in your report informing you that a particular section is incomplete due to insufficient data. In addition, attribute and individual question results are not reported if an insufficient number of responses were received. These are indicated with an "NA".

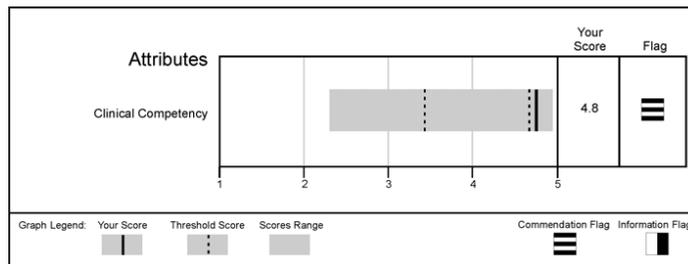
Medical Colleague Assessment Section

Check your personal scores

“Your Score” gives your average (mean) response to each statement or attribute. NSPAR uses a five-point scale, with 5 as near perfect. Thus a 4 suggests your performance is perceived as above average. Because most people have a high regard for physicians, the typical profile is skewed to the upper end of the scale. It is important to recognize that small differences (such as 4.1 versus 4.5) may reflect important distinctions in the perceived quality of particular details of your practice.

Benchmark your performance

Next, note how your scores compare with those of your peers. Each assessment section opens with a summary chart. On that chart, gray blocks show the range of responses physicians have received regarding each attribute. Within the bands, you’ll see dotted lines indicating both the lower and upper thresholds defined as scores at the 10th and 90th percentiles. The bold line shows your average score. To review scores on the individual items that make up each attribute, turn to subsequent pages in the section.



Read the flags

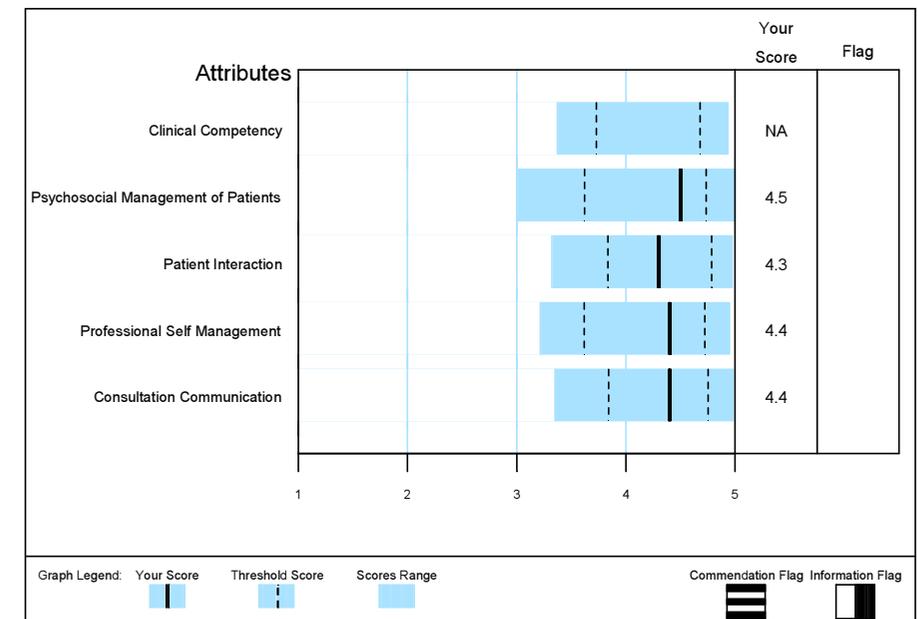
Adapted from internationally recognized nautical flag symbols, flags are used throughout the profile to signal areas deserving particular attention as you build your action plan.

≡ *Commendation flag.* Appears beside any score equal to or above the 90th percentile. Whatever you’re doing to earn these flags, continue!

■ *Information flag.* Appears when a score is less than 4.0 and equal to or less than the 10th percentile. This flag indicates a potential area for improvement.

Medical Colleague Assessment Section

The Medical Colleague Assessment contains five attributes as illustrated below. The table that follows shows the results for individual questions. Your scores are based on the responses of 6 Medical Colleagues from whom complete assessment forms were received and processed.



Medical Colleague Assessment Section

Attribute Descriptions

Clinical Competency: The physician assesses, diagnoses (using the appropriate technical procedures), and selects an appropriate treatment for the patient.

Psychosocial Management of Patients: The physician relates social conditions to physical and mental health, thus resulting in appropriate referrals to non-physicians and other community resources.

Patient Interaction: The physician communicates effectively with patients and their families in a manner that conveys respect and compassion and appropriately coordinates care for patients with other health professionals.

Professional Self-Management: The physician manages his/her own health care resources, professional development and stress.

Consultation Communication: The physician communicates effectively to patients the steps needed for continuing care such as referrals to other health professionals and transfer of care to specialists and consultants.

Patient Interaction

The physician communicates effectively with patients and their families in a manner that conveys respect and compassion and appropriately coordinates care for patients with other health professionals.

Question	Your Mean	Flag
1 Communicates effectively with patients	4.5	
2 Communicates effectively with patients' families	NA	
21 Coordinates care effectively for patients with other health professionals and physicians	4.4	
22 Shows compassion for patients and their families	4.2	
23 Maintains confidentiality of patients and their families	4.3	
24 Respects the rights of patients	4.3	
Attribute Summary for Patient Interaction	4.3	

Professional Self Management

The physician manages his/her own health care resources, professional development and stress.

Question	Your Mean	Flag
5 Within the range of services provided by this physician, he/she demonstrates appropriate judgement	4.8	⊞
10 Maintains quality medical records	4	
26 Is involved with professional development	4.5	
27 Accepts responsibility for own professional action	4.2	
28 Manages health care resources efficiently	NA	
29 Manages personal stress	4.6	
30 Is aware of own shortcomings	NA	
31 Participates in a system of call to provide care for patients outside of regular office hours	4.6	
Attribute Summary for Professional Self Management	4.4	

Self Assessment Section

Self-Assessment Section

The ratings you gave yourself appear in the first column. Next is the rating you received from your medical colleagues. The column on the right reflects the average of assessments received by all physicians in your reference group.

Question	Self Rating	Medical Colleague Rating	Overall Average Score
1 I communicate effectively with patients	4	4.5	4.3
2 I communicate effectively with patients' families	4	NA	4.3
3 I communicate effectively with other health care professionals	5	4.6	4.4
4 Within the range of services provided by me, I perform technical procedures skillfully	4	NA	4.2
5 Within the range of services provided by me, I demonstrate appropriate judgement	4	4.8	4.3
6 I select diagnostic tests appropriately	4	NA	4.2
7 I critically assess diagnostic information	4	NA	4.3
8 I make correct diagnosis in a timely fashion	4	4.5	4.2
9 I select the appropriate treatment	4	NA	4.2
10 I maintain quality medical records	3	4	4.1
11 I handle transfer of care	4	3.8	4.3
12 I refer patients in an appropriate manner	4	4.5	4.3
13 I am willing to accept a patient back from a consultant for continuing care	4	4.6	4.4
14 I provide a clear understanding about who is responsible for continuing care of the patient	5	4.2	4.3
15 I communicate referral information to patients	4	NA	4.3
16 I recognize psychosocial aspects of illness	4	4.8	4.2
17 I make appropriate use of community resources for psychosocial aspects of care	4	4.5	4.2
18 I make appropriate referrals for psychosocial aspects of illness	4	4.5	4.2
19 I manage patients with complex psychosocial problems	5	4.4	4.1
20 I manage patients with complex medical problems	5	4.5	4.2
21 I coordinate care effectively for patients with other health professionals and physicians	4	4.4	4.3
22 I show compassion to patients and their families	4	4.2	4.4

Appendix B

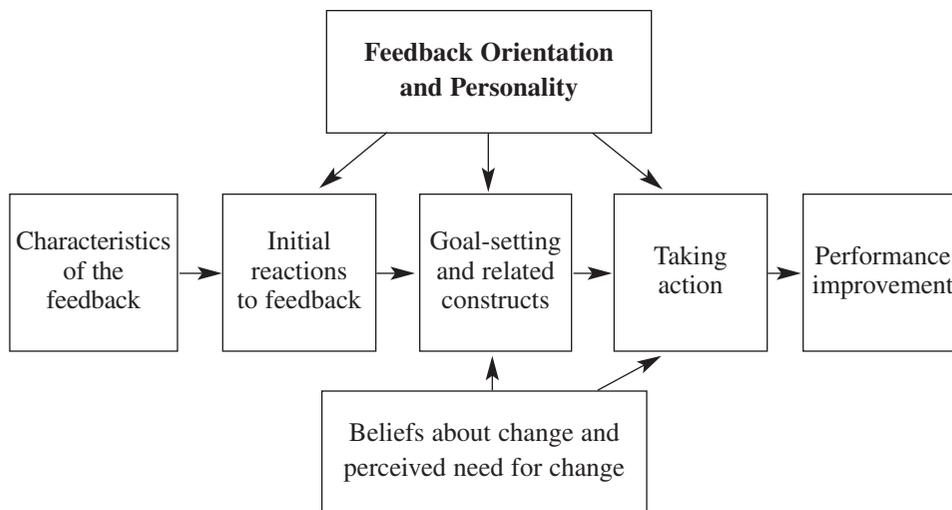


Summary of meta-analysis of longitudinal studies of MSF (Smither et al. 2005)

Smither J, London M, Reilly RR. Does performance improve following multi-source feedback? A theoretical model, meta- analysis, and review of empirical findings. *Personnel Psychology*. 2005; 58:33-66.

The meta-analysis by Smither et al (2005) of MSF longitudinal studies of managers in industry and their use of feedback over time, summarized research evidence regarding factors influencing use of MSF. The authors concluded that 8 broad factors influenced behaviour change following MSF: characteristics of the feedback, initial reactions to feedback, personality, feedback orientation, perceived need for change, beliefs about change, goal setting and taking action. They suggest a theoretical model for understanding how these factors interact and influence use of MSF, Figure 1. Reactions to feedback, goal setting and taking action are influenced by personality and feedback orientation, and initial reactions and goal setting are influenced by beliefs about change. Goal setting and taking action are influenced by perceived need for change.

Figure 1: Theoretical model for understanding performance improvement following multi-source feedback*



*Smither, London, Reilly, Does performance improve following multi source feedback? A theoretical model, meta-analysis, and review of empirical findings, *Personnel Psychology* 2005, 58, 33-66

Influences upon MSF use occur within a complex organizational culture which itself can influence both appraisal and feedback. Implications of this study are that MSF should not be expected to lead to substantial improvement for all recipients, and effects of some factors on performance may be indirect and hence not readily measured.

In Table 1, using the Smither et al model, we list the 8 factors, define each and summarize findings. In the last column we provide the findings of this thesis.

Table 1: Eight factors influencing MSF use with definition and results of meta-analysis (Smither et al, 2005); and results of this thesis

Factors	Definition/notes	Results: Smither 2005	Results: This Thesis
1. Characteristics of feedback itself	Whether the feedback is positive or negative.	When ratings from other sources are lower than self-ratings, feedback interpreted as negative. Positive feedback is more readily accepted.	When ratings from other sources were lower than self-ratings, feedback was interpreted as negative. Positive feedback was more readily accepted.
2. Recipients' initial reactions	Initial reactions can be emotional; i.e., negative feedback can evoke anger or discouragement and positive feedback, positive emotions.	If initial reactions are extremely negative, they may lead recipients to reject feedback and improvement is unlikely.	Similar findings – some physicians reacting with strongly negative emotions did not change. (Chap. 5)
3. Feedback orientation	Individual's predisposition to seek and use feedback.	High feedback orientation is positively correlated with feedback acceptance.	Not included in study.
4. Personality	Some personality characteristics; e.g., high self-monitoring, are related to improvement.	High self-monitors are characterized by ability to adapt to situational requirements.	Not included in study. An observation is that high-scoring physicians displayed characteristics of high self-monitoring. (Chap. 6)

Factors	Definition/notes	Results: Smither 2005	Results: This Thesis
5. Beliefs about change	Self-efficacy is the belief that one can make a desired change. Contributing to this are beliefs about personality attributes and whether they are largely fixed or changeable.	Recipients with higher self-efficacy were more likely to engage in performance improvement.	Not explicitly studied, but observations were that self-efficacy appeared to be a factor as some who did not change appeared to demonstrate low self-efficacy. (Chap. 5) Also, some believed some domains; e.g., communication skills were unchangeable personality traits. (Chap. 6)
6. Perceived need for change	Perceiving a need for change should enhance likelihood of setting goals and taking action, i.e. for using MSF.	If feedback is generally favourable, one is less likely to see need for change. Discrepancies between self and other's ratings can lead recipients to change. But some may be satisfied because unfavourable feedback is consistent with self-evaluation.	Perceiving need for change was important. Those receiving positive feedback confirming practice did not see a need to change. Some receiving generally negative feedback inconsistent with self-perceptions changed and some did not, for various reasons. (Chap. 4,5)
7. Goal setting	It is not only feedback but the goals people set in response to feedback that cause behaviour change.	Recipients receiving more negative feedback set more goals. Using MSF for development only (not for summative purposes) can support positive outcomes and goal-setting.	Not explicitly studied. But, those who changed appeared to receive specific feedback which guided their planning, while some who did not change believed that feedback was not specific enough for this.
8. Taking actions	Performance improvement is only likely for recipients who take appropriate action in response to their feedback.	Organizations can help this by providing coaches, encouraging talking to others about feedback, providing development activities to address needs.	Some receiving negative feedback engaged in learning and other activities on their own to prepare for change. Some believed that receiving facilitated feedback would have aided feedback acceptance, interpretation and use.

In summary, while this thesis did not explicitly explore individual internal factors understood from cognitive psychology to influence performance improvement, findings supported the influence of 6 of the 8 factors found influential in the Smither study: characteristics (nature) of the feedback, initial reactions to the feedback including emotion, beliefs about change, perceived need for change, goal setting, taking action to prepare for change including facilitation and support.

A notable difference in the findings of this thesis was the influence of perceived credibility and specificity of the feedback. While we found these two factors to be highly influential, the Smither meta-analysis did not identify them. We surmise that credibility of feedback may not have been as influential in business settings as MSF was designed for use in such settings where reviewers work closely with those being assessed and regularly observe their work and interactions. These features are less characteristic of medical practice settings, especially those of family physicians primarily in office practice. With regard to specificity, the MSF organizational literature recommends using specific, relevant items, and training of reviewers and recipients in using them.

Acknowledgements



Multi-source feedback
for physician learning and change

Before beginning PhD studies at the University of Maastricht I anticipated that it would be a fulfilling endeavour, but I could not have imagined the depth and breadth of learning, the personal and professional growth, and the warm relationships which were to evolve. For these, I am most grateful to my supervisors, Cees van der Vleuten and Job Metsemakers, University of Maastricht, and Karen Mann, Dalhousie University. Cees observed in an early discussion that “Much of the best research is done by a team” and I am deeply grateful to my team of supervisors for their wisdom, critical insight, thoughtfulness, and curiosity, and for guiding me with just the right balance of confirmation, inspiration and challenge.

Like all highly performing teams, Cees, Job and Karen share tremendous strengths, but each also developed special roles. Cees inspired fresh ideas and approaches and opened the door for me to new ways of looking and thinking. Job, with a quizzical look and a single, “Why?” would lead me to reconsider and question a body of work, always for the better. Karen, through her careful posing of suggestions and alternatives would skillfully “polish” my work, work which I frequently had considered complete but which now shone with her additions. It is a rare privilege to work with such a dynamic and thoughtful group. I have benefited from both their individual talents and the synergy and vitality of their interactions. Thank you to each of you.

I am grateful to my Dalhousie University colleagues who participated as members of my research team. In addition to Karen, I wish to recognize Jean Gray, past Associate Dean of Continuing Medical Education (CME) at Dalhousie and mentor who gently pointed me in the direction of undertaking a PhD dissertation; Doug Sinclair, current Associate Dean of CME, a strong supporter of my research and studies and a valuable member of the research team; Philip Muirhead, a family physician with an interest in assessment and feedback who kept our research grounded in the real world of family practice, and Suzanne Ferrier, our very capable research associate who helped in many ways.

I wish to acknowledge all my colleagues in the Dalhousie Office of CME with whom I have worked each day and who supported and encouraged me in numerous ways. Thank you. I also wish to thank my broader circle of colleagues within the Division of Medical Education who showed interest in my work and offered encouragement. I extend a special thank you to Eric Mykhalovskiy and Blye Frank, experts in qualitative research, who guided my further exploration of the field and helped me hone my skills and build a theoretical foundation.

Special acknowledgement is due the College of Physicians and Surgeons of Nova Scotia (CPSNS), the physician regulatory organization that wished to find a better way to assess physicians and encourage their practice improvement and continued learning. This led to CPSNS’ interest in the multi-source feedback program and my involvement as investigator in that research. I especially wish to thank Cameron Little, Executive Director and Registrar of CPSNS, for his leadership and support. I am grateful too for being invited as a member to the CPSNS Physician Improvement Committee. Through this committee, the CPSNS is using my research findings to make practical changes to the MSF program in Nova Scotia. It is rare that a researcher sees her research findings put to practical use in such a timely manner.

Beyond my supervisors and professional colleagues, my personal friends deserve a special thank you. One does not undertake a PhD dissertation and add it to the routine of professional and personal life without giving up something to make room for it. For me, one activity so limited by PhD studies was spending time with my friends of many years. I thank them for not deserting me over the past few years and for their understanding and encouragement, and I look forward to now being able to spend more time with them.

Finally and most importantly, I sincerely thank my family who have warmly supported me since the beginning. They have been very patient while I have been working away in “my little room upstairs” for the past years. To my husband Dan a heartfelt thank you for always being there, for understanding and for helping in so many ways. To our sons, Andrew, Peter and Ian, your support and encouragement from near and far have meant so much to me. And, last but by no means least, I thank my dad, Basil Buckland, who always inquired about my progress and offered encouragement, and who at the age of 91 continues to inspire and encourage his family.

Curriculum vitae

Joan Sargeant received a Bachelor of Nursing from the University of New Brunswick, Fredericton, New Brunswick in 1970 and a Master in Education (Adult Education) from Dalhousie University, Halifax, Nova Scotia, 1995. Following clinical nursing positions in the Montreal Neurological Institute, Montreal and Sunnybrook Hospital, Toronto, she taught in undergraduate and continuing professional development programs for nursing and allied health programs at the Victoria General Hospital, Halifax, Nova Scotia, and served as an education consultant. She became a member of the Faculty of Medicine, Dalhousie University in 1997, in the Office of Continuing Medical Education (CME) and Division of Medical Education. She was instrumental in implementing and evaluating the use of distance education (videoconferencing and the Internet) in CME. Teaching communication skills is a particular interest and she has taught at both the undergraduate and CME levels and is responsible for the Dalhousie CME communication skills instruction program for physicians. More recently, she has become involved in designing and evaluating interprofessional education. Research interests include the facilitation of learning and interaction through distance education, enhancing communication skills, and more recently, physician assessment, feedback and practice improvement, and interprofessional education. Joan is Associate Professor, Division of Medical Education, and Director Program Development and Evaluation, Continuing Medical Education, Dalhousie University. She and her husband Dan live in Bedford, Nova Scotia and have three adult sons, Andrew, Peter and Ian. She enjoys sailing, gardening and spending time with family and friends.