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PREOPERATIVE RISK INFORMATION AND PATIENT INVOLVEMENT IN SURGICAL TREATMENT FOR RECTAL AND SIGMOID

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Abstract

Introduction: Surgery for rectal and sigmoid cancer is an exemplary setting for investigating preoperative information provision and Shared Decision Making (SDM), since the decision consists of a trade-off between the pros and cons of different treatment options. The aim of this study was to explore surgeons' opinion on the preoperative information that should be given to rectal and sigmoid cancer patients and to evaluate what is actually communicated. Second, we assessed surgeons' attitudes towards Shared Decision Making and compared these with patient involvement.

Methods: A questionnaire was sent to Dutch surgeons with an interest in gastroenterology. Preoperative consultations were recorded. A checklist coded the information surgeons communicated to the patients. The OPTION-scale was used to measure patient involvement.

Results: Questionnaires were sent to 240 surgeons and 103 (43%) responded. They requested information on anastomotic leakage, its consequences, benefits and risks of a defunctioning stoma and impact of a stoma on quality of life necessary preoperative information. In practice, patients were inconsistently informed of these items. Most participants agreed to using SDM in their consultations. In practice, most patients were offered only one treatment option and little SDM was seen. The mean OPTION-score was low. (7/100)

Conclusions: The information given to patients with rectal and sigmoid cancer to decide on which surgical option they would prefer is insufficient. Information should be given on all treatment options with their complications and outcome before any decision is made.

Introduction

In recent years, the concept of Shared Decision Making (SDM) has gained widespread appeal to both clinicians and patients.^{1, 2} In SDM, clinicians and patients make decisions together using the best available evidence.² SDM is considered especially important for patients who present with a serious illness such as cancer, when the outcomes are uncertain, or when different treatment options are available.³ Since different possible outcomes (benefits and risks) of the treatment options may vary in their impact on the patient's physical and psychological well-being, informing patients on these matters is the cornerstone of decision making about treatment.⁴

The decision on surgical treatment for rectal and sigmoid cancer is a trade-off between benefit and harm, in which, besides tumour and patient related factors, both doctors' and patients' preferences play a role. When tumour size, stage and location allow a sphincter preserving resection, the surgical treatment options consist of an anastomosis, an anastomosis with a defunctioning stoma, or an end-colostomy.

Both patients and surgeons seem to have a strong preference to avoid a stoma, under the assumption that it will have negative consequences for the quality of life.^{5, 6} However, an anastomosis bears the risk of anastomotic leakage (AL), which may cause re-operation, prolonged hospital stay, morbidity, a possibly worse oncological outcome and even mortality.⁷⁻⁹

The benefits of preventing or minimizing AL should always be balanced against the disadvantages of the alternatives. A defunctioning stoma itself carries a substantial risk of becoming permanent.^{10, 11} The morbidity and mortality of closure of a defunctioning stoma should also be taken into account.¹² Different studies report that stomal complications are prevalent, seen in 25 to 50% of patients with a stoma after 8-10 years of follow-up.^{13, 14} Finally, as opposed to the negative influence of a stoma on quality of life, patients with a (low) anastomosis also have a risk for functional derangements, such as incontinence, and

sexual- and bladder dysfunction.¹⁵

In order to make this complicated decision, thorough preoperative information provision to patients on these possible outcomes seems essential before a decision is made on the preferred treatment option.

The aim of this study was first to explore gastroenterological surgeons' opinion on the necessary information that should be provided preoperatively on treatment options, including their related benefits and harms and on SDM. We assessed what information surgeons communicated in practice, and to what extent they involved patients in decision making.

Methods

This study consisted of a questionnaire and a clinical encounter study.

Participants

A questionnaire was distributed among all Dutch surgeons with a specialty in the field of colorectal surgery. The questionnaire was sent to all by email; a reminder was sent once.

Moreover, all gastroenterological surgeons of a Dutch university hospital and four regional hospitals were asked to record their consultations with patients with rectal and sigmoid cancer at the outpatient clinic, between May 2011 and March 2012. Patients received information required for each recording. The medical ethics review board agreed on patients giving verbal consent prior to recording.

Questionnaire

The questionnaire first asked surgeons to indicate on a 4-point Likert-scale (1=not important at all to 4=very important) whether they think patients with rectal and sigmoid cancer should be informed about various treatment outcomes of the different options (*table 2*). Next,

surgeons were asked to indicate on a 4-points Likert scale (1=not at all to 4 =very much) whether they are familiar with SDM, whether they agree with using SDM in their consultations and whether they think they perform SDM. Also, they were asked to indicate on a 4-points Likert scale (1=not at all to 4=very much) to which extend they experiences each of 8 barriers in practice for implementing SDM .^{16, 17} Barriers were subdivided into two groups; practical and attitudinal (see *Figure 1*). Finally, surgeons were asked about their years of experience in their specialization, their institution, and their numbers of rectal and sigmoid cancer cases they see monthly.

Clinical encounter study

Surgeons were equipped with a digital tape recorder and instructions regarding its use. All newly diagnosed patients with rectal and sigmoid cancer with an appointment at the outpatient clinic were eligible for participation. Patients with metastases at the time of primary surgery or resections for multiple synchronous colorectal tumors were excluded because these represent subgroups of patients with other treatment perspectives and different expected outcomes. We excluded patients with lowest 5 cm rectal cancer, since in these patients there is only one option, which is a permanent stoma.

We developed a checklist with a team of members with various backgrounds in medicine, psychology, epidemiology, and communication research to code what information on treatment options, and their related benefits and harms surgeons communicated with their patients. The checklist was based on the literature and following Knops et al.¹

We coded first whether general information on the procedure and general risks of the procedure were communicated with a patient. Second, we coded whether all therapeutic options (anastomosis with and without a defunctioning stoma and an end-colostomy) with their benefits and side-effects, were explicitly presented to a patient. All items were scored as ‘mentioned’ or ‘not mentioned’. See for items *Table 3*.

For each consultation, the patient's sex, age, and tumour location were registered.

Analyzes

Two raters (HS, MK) independently analyzed and coded the same ten audiotapes. Disagreement was solved in consensus. As substantial agreement between raters was found (Cohen's Kappa = 0.94) the remaining tapes were coded individually.

Spearman correlations were computed to assess the association between the extent to which surgeons experience barriers for using SDM and their age and years of experience. Likert-scale answers were analyzed in two groups (1-2 versus 3-4).

To evaluate patient involvement in the decision about the type of surgery, we used the OPTION-scale.¹⁸ This one-dimensional scale assesses the magnitude of SDM use during the physician–patient consultation by identifying twelve SDM-specific behaviors that clinicians can adopt to promote patients' active participation in decision making. The items are coded on a five-point scale, where “0” indicates the nonperformance of a behavior and “4” indicates the performance of a behavior at high competency. The overall patient involvement score is a value between 0 and 100, with a higher score indicating more frequent and/or higher quality display of clinicians' behaviors to involve patients in the treatment decision.

Data were analyzed using SPSS version 17.0 (SPSS, Chicago, IL, United States of America).

Results

Study population

A total of 103 surgeons responded to the questionnaire (response rate 43%). An average of ten minutes was needed to complete it. Characteristics of participants are shown in *Table 1*. The clinical

encounter study consisted of 32 recorded consultations conducted by 11 different gastroenterological surgeons in five different hospitals. The characteristics of participating surgeons, hospitals, and patients are also shown in *Table 1*.

Preoperative information

Surgeons' opinion on necessary preoperative information

Nearly all respondents considered information on the risk of anastomotic leakage after creation of an anastomosis to be essential (99%). Also, the risk of re-operation and the risk of a stoma due to leakage were regarded as important elements of pre-operative counseling, as 93% of respondents considering both items. The majority of the respondents (77%) indicated that the risk of a fecal incontinence should always be mentioned. The risk of death due to leakage should be mentioned "often" according to 27% of the respondents, and always according to 57%. The other results are shown in *Table 2*. The 11 surgeons of whom the consultations were audio-taped did not differ in their opinions when compared to the other respondents.

Information giving in practice

None of the information items were mentioned consistently in every consultation (*Table 3*). Information on the surgical procedure was provided during most of the consultations; information on laparoscopic or open surgery (81%); removal of (a part of) the bowel (72%); remaining of two bowel ends (75%); and duration of hospital stay (69%) were mentioned often.

Three of ten items regarding general risks of surgery were mentioned occasionally: postoperative hemorrhage (47%), wound infection (41%) and pneumonia (13%). Other risk-items were not mentioned.

A primary anastomosis was the surgical treatment option mentioned most often (84%). The advantages of the avoidance of a stoma were mentioned to most of these patients (70%). Also, the risk of

anastomotic leakage was mentioned in almost all of these patients (93%). The surgical treatment ‘anastomosis with defunctioning stoma’ was mentioned to 16 patients (53%). Most of these patients (88%) were informed on the fact that this is a safer option than a primary anastomosis. The advantage of diminishing the consequences of anastomotic leakage was mentioned to half of the patients (44%). A prolonged hospital stay and death due to anastomotic leakage were mentioned in one consultation (6%). Information on re-operation or the risk of a stoma due to leakage were never mentioned. It was often (88%) mentioned that the defunctioning stoma initially is meant to be temporary. The necessity of a second surgery was mentioned to only three (19%) patients. The risks of complications after second surgery and potential stomal complications were never mentioned.

An end-colostomy as a surgical treatment option was mentioned to seven (22%) patients. The fact that there is no risk of anastomotic leakage was mentioned to one of these seven patients (14%). The advantage that fecal incontinence problems are avoided with this option was mentioned to three of seven patients (43%). None of these patients were informed on potential stomal complications.

Shared Decision Making

Surgeons’ attitude towards SDM

Forty-one percent of all surgeons indicated to be at least quite a bit familiar with the concept of SDM. Ninety-one percent of the respondents stated to agree at least quite a bit with using SDM in their consultations. At least 37% of the surgeons indicated to use SDM quite a bit in their preoperative consultations with rectal and sigmoid cancer patients. Surgeons perceived various barriers for implementing SDM in their practice and they did not agree to one or more most important barriers (*Figure 1*). The most often cited barrier was the lack of applicability due to perceiving patients as not capable of making treatment decisions (42%). No correlation was found between the extent to which surgeons experienced barriers for using SDM and their age or

number of years of experience.

Patient involvement in practice

In more than half (55%) of the consultations, only one treatment option was presented to the patient. In one third (34%), the patient was presented with two options. In three consultations (9%) the patient was informed about three options. The mean OPTION-score of all consultations was 7 points (range 2-25) on a 0-100 scale.

Discussion

This study had a dual objective. Firstly, the aim was first to investigate surgeons' attitude towards essential information provision and SDM. The second aim was to assess what information surgeons actually communicated preoperatively and to what extent they involved patients in decision making.

Although surgeons considered most information on risks and alternative treatment options to be essential for decision making, this was not reflected in practice. We found that patients were insufficiently and inconsistently informed about risks of surgery, alternative treatment options, and their pros and cons, when compared to what surgeons considered as necessary preoperative information. Whilst information was usually given on the surgical treatment option 'an anastomosis', its procedure and the most important risks of surgery such as AL and alternative treatment options were often not mentioned at all. In this way, the patient is directed towards one specific treatment option, which will often be the one preferred by the surgeon.

This phenomenon has been previously described in some studies investigating information provision to patients undergoing surgical treatment.¹⁹ Knops et al. studied preoperative information communicated to patients about to undergo surgery for an abdominal aneurysm.²⁰ They found that although surgeons informed patients about the disorder and about their individual prognosis, alternative

treatment options were not discussed. Also, Vohra et al. investigated whether patients were informed about risks of cardiac surgery and found that the surgeons did not discuss more than one treatment option with patients.²¹

Some limitations of this study deserve attention. We audio taped only the first consultation of patients with rectal and sigmoid cancer at the outpatient clinic. Therefore, we may have missed information that was discussed during other related consultations. It is however important to realize, that most decision-making takes place in the first encounter with the surgeon, and at that point all information on treatment options and risks should have been addressed at least to some extent.³¹ Also, participating surgeons knew they were audio taped, which may have biased their information provision and caused them to be more comprehensive than they would otherwise be. This would lead to an overestimation of the information provided. However, research has shown that this effect fades within minutes as the surgeon returns to his or hers standard routine.³²

Last, the inclusion of both rectal and sigmoid cancer patients may have caused a somewhat heterogeneous study population, and subgroups of patients could differ in their treatment perspectives or outcomes. We excluded patients with lowest 5 cm rectal cancer to attempt to create a homogeneous cohort with respect to preoperative sphincter dysfunction. Considerable leakage rates in patients with high rectal and sigmoid cancer have been described.³³ We therefore considered items related to anastomotic leakage, and the need for defunctioning stomas relevant in all subgroups.

Surgeons agreed on the importance of providing information but seemingly did not manage to do so during the first visit. The major aim of the first visit is possibly not to address the large amount of issues required for SDM in rectal and sigmoid cancer surgery, but to gain the trust of the patient and family and to establish a relationship of truth-telling. Ideally, the moment of decision making would be postponed from the first consultation to a second consultation at which the patient has had the time to consider his/her options. Details

of consent, including complications and alternative procedures can then be discussed in the meantime by nurses or other members of the surgical team. In practice however, there may not be the possibility to have a second preoperative encounter, due to economic reasons. A less expensive solution would be to inform the patient before the first consultation with the surgeon, for example with printed or web-based materials describing the therapeutic options and their most important pros and cons, or with decision aids with additional values clarification methods.³⁴ These decision aids may support patients in forming preferences for the different options and treatment outcomes. Decision aids have proven to be particularly useful in situations of equipoise, where the surgeon is comfortable in providing the patient a choice between two medically equivalent options.³⁵ The use of multimedia-based programs such as film or animation may be of additional value.³⁶⁻³⁸ Patient navigation by nurse practitioners or physician assistants is another suggested approach to addressing informational needs and facilitate the decision making process.³⁹

These methods serve to empower the patient for a consultation with the surgeon, in which the information can subsequently be individualized to that patient.

In our study, the majority of the responding surgeons had a positive attitude towards SDM. The discrepancy between the positive attitude and the absence of putting SDM into clinical practice suggests that barriers exist, which was confirmed in our study. We found that almost half of the surgeons experienced the fact that patients are unable to participate in decision making in rectal and sigmoid cancer treatment as a barrier for SDM. This inability could be related to the patients' characteristics, as well as to the difficulty of the clinical situation, which both have been nominated as important barriers for SDM by physicians in multiple settings.²²⁻²⁶

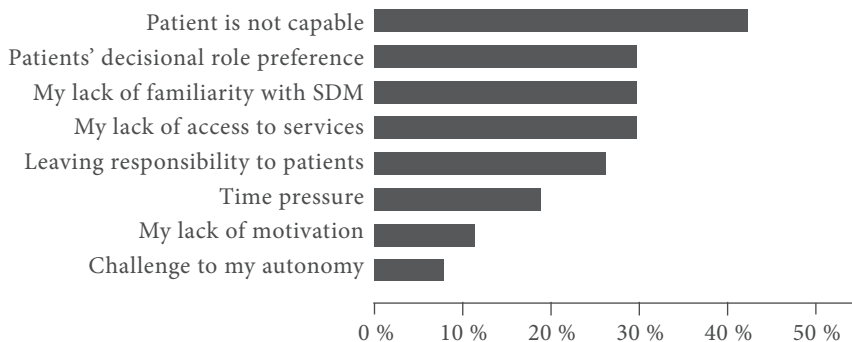
Stiggelbout et al provide some simple steps for clinicians, to enable the process of SDM.² The first and most important step is creating awareness that there are different options, that there is no best

choice and that a decision has to be made. If patients are not made aware that more than one option is available, they will not realize a decision is to be made. Next, the benefits and harms of each option need to be laid out as well as their respective probabilities. Exact probabilities are not always needed, but in most preference-sensitive decisions the patient will need numbers to be able to weigh the pros and cons. 3 Finally, patients' ideas, concerns, and expectations about the options should be elicited, and the patient should be supported in the process of deliberation. With these steps, patients will not only receive all necessary information on their possible treatments, but will become more involved in deciding about their treatment, and will experience a more tailored treatment decision making process.

Conclusion

The information necessary for patients with rectal and sigmoid cancer in order to decide on which surgical option they prefer seems far from complete in clinical practice. We recommend giving information on at least all treatment options and their most important consequences before decision making takes place. Alternative methods to enhance information giving such as improved printed materials, multimedia-based programs, or patient navigators should be explored and developed.

Figure 1. Perceived barriers for implementing Shared Decision Making into their own practice (n=85).



Percentage of participants is displayed which stated to agree at least quite a bit on the different items.

Table 1. Characteristics of the participants of the questionnaire (n=101) and the clinical encounter study (n=32).

<i>Participants of questionnaire (n=103)</i>	
Surgeon	
Mean age of surgeons	46 years (33-64)
Mean years of experience as a gastro-enterological surgeon	11.2 years (1-30)
Mean number of new patients with rectosigmoid cancer/month	3 patients (1-30)13
Hospital	
Academic hospital	15 (15%)
Non-academic teaching hospital	55 (54%)
Non-teaching hospital	32 (31%)
Participants of clinical encounter study (n=32)	
Surgeon	
Mean age of surgeons	43.7 years (35-60)
Mean years of experience as a gastro-enterological surgeon	8.7 years (1-25)
Mean number of new patients with rectosigmoid cancer per month	2,8 patients (1-5)
Hospital	
Academic hospital	9 (28%)
Non-academic teaching hospital	13 (41%)
Non-teaching hospital	10 (32%)
Patient	
Male patients	20 (63%)
Mean age of patients	64 years (38-87)
Rectal cancer	16 (50%)

Table 2. Surgeons' (N=101) opinion on importance of preoperative information items for patients with rectosigmoid cancer.

<i>Frequency with which patients should receive various information items preoperatively (%)</i>	<i>Never</i>	<i>Sometimes</i>	<i>Often</i>	<i>Always</i>
The risk for anastomotic leakage following construction of an anastomosis			1	99
The risk of re-operation due to anastomotic leakage			8	93
The risk of a stoma due leakage	2		5	93
The risk of death due to anastomotic leakage	4	11	27	57
The risk for faecal incontinence after construction of an anastomosis		3	20	77
Dimished consequences of anastomotic leakage after construction of a defunctioning stoma	15	12	16	57
Morbidity after closure of defunctioning stoma	5	25	16	54
Mortality after closure of a defunctioning stoma	38	26	17	19
The risk that a diverting stoma becomes permanent	13	44	19	24
No risk for anastomotic leakage following a permanent stoma	8	20	22	50
The impact of a stoma on quality of life	3	9	28	60

Table 3. Actual information on procedure, general risks, different options and their pros and cons communicated in consultations (n=32)

[illegible]

Surgeons		1	2	3	4	5	6	7	8	9	10	
Patients		1	2	3	4	5	6	7	8	9	10	
2.2 option 2: primary anastomosis with defunctioning stoma												
Option mentioned												
Pro: (implicit) safer option then option 1												
Pro: diminishes consequences of AL												
Pro: stoma is temporary												
Con: still risk for AL												
Con: re-operation due to AL												
Con: stoma due to AL												
Con: prolonged hospital stay due to AL												
Con: longterm illness due to AL												
Con: death due to AL												
Con: faecal incontinence												
Con: second surgery is necessary												
Con: complications after second surgery												
Con: stomal complications												
2.3 option 3: end-colostomy												
Option mentioned												
Pro: no risk for AL												
Pro: no problems with fecal incontinence												
Pro: no consequences of AL												
Con: stomal complications												

■ mentioned □ not mentioned

REFERENCES

1. http://www.cijfersoverkanker.nl/selecties/Dataset_1/img5108fa25ab529.
1. Charles C, Gafni A, Whelan T. Decision-making in the physician-patient encounter: revisiting the shared treatment decision-making model. *Soc Sci Med* 1999;49(5):651-661.
2. Stiggelbout AM, Van der Weijden T, De Wit MP et al. Shared decision making: really putting patients at the centre of healthcare. *BMJ* 2012;344:e256.
3. O'Connor AM, Legare F, Stacey D. Risk communication in practice: the contribution of decision aids. *BMJ* 2003;327(7417):736-740.
4. Robinson A, Thomson R. Variability in patient preferences for participating in medical decision making: implication for the use of decision support tools. *Qual Health Care* 2001;10 Suppl 1:i34-i38.
5. Zolciak A, Bujko K, Kepka L, Oledzki J, Rutkowski A, Nowacki MP. Abdominoperineal resection or anterior resection for rectal cancer: patient preferences before and after treatment. *Colorectal Dis* 2006;8(7):575-580.
6. Bossema E, Stiggelbout A, Baas-Thijssen M, van d, V, Marijnen C. Patients' preferences for low rectal cancer surgery. *Eur J Surg Oncol* 2008;34(1):42-48.
7. den Dulk M, Marijnen CA, Collette L et al. Multicentre analysis of oncological and survival outcomes following anastomotic leakage after rectal cancer surgery. *Br J Surg* 2009;96(9):1066-1075.
8. Asteria CR, Gagliardi G, Pucciarelli S et al. Anastomotic leaks after anterior resection for mid and low rectal cancer: survey of the Italian Society of Colorectal Surgery. *Tech Coloproctol* 2008;12(2):103-110.
9. Peeters KC, Tollenaar RA, Marijnen CA et al. Risk factors for anastomotic failure after total mesorectal excision of rectal cancer. *Br J Surg* 2005;92(2):211-216.
10. den Dulk M, Smit M, Peeters KC et al. A multivariate analysis of limiting factors for stoma reversal in patients with rectal cancer entered into the total mesorectal excision (TME) trial: a retrospective study. *Lancet Oncol* 2007;8(4):297-303.
11. Gooszen AW, Geelkerken RH, Hermans J, Lagaay MB, Gooszen HG. Temporary decompression after colorectal surgery: randomized comparison of loop ileostomy and loop colostomy. *Br J Surg* 1998;85(1):76-79.
12. Saha AK, Tapping CR, Foley GT et al. Morbidity and mortality after closure of loop ileostomy. *Colorectal Dis* 2009;11(8):866-871.
13. Harris DA, Egbeare D, Jones S, Benjamin H, Woodward A, Foster ME. Complications and mortality following stoma formation. *Ann R Coll Surg Engl* 2005;87(6):427-431.
14. Nastro P, Knowles CH, McGrath A, Heyman B, Porrett TR, Lunniss PJ. Complications of intestinal stomas. *Br J Surg* 2010;97(12):1885-1889.
15. Lange MM, den DM, Bossema ER et al. Risk factors for faecal incontinence after rectal cancer treatment. *Br J Surg* 2007;94(10):1278-1284.
16. Légaré F, O'Connor AM, Graham ID et al. Primary health care professionals'

- views on barriers and facilitators to the implementation of the Ottawa Decision Support Framework in practice. *Patient Educ Couns* 2006;63(3):380-390.
17. Gravel K, Legare F, Graham ID. Barriers and facilitators to implementing shared decision-making in clinical practice: a systematic review of health professionals' perceptions. *Implement Sci* 2006;1:16.
 18. Elwyn G, Edwards A, Wensing M, Hood K, Atwell C, Grol R. Shared decision making: developing the OPTION scale for measuring patient involvement. *Qual Saf Health Care* 2003;12(2):93-99.
 19. Karnieli-Miller O, Eisikovits Z. Physician as partner or salesman? Shared decision-making in real-time encounters. *Soc Sci Med* 2009;69(1):1-8.
 20. Knops AM, Ubbink DT, Legemate DA, de Haes JC, Goossens A. Information communicated with patients in decision making about their abdominal aortic aneurysm. *Eur J Vasc Endovasc Surg* 2010;39(6):708-713.
 21. Vohra HA, Ledsham J, Vohra H, Patel RL. Issues concerning consent in patients undergoing cardiac surgery-the need for patient-directed improvements: a UK perspective. *Cardiovasc Surg* 2003;11(1):64-69.
 22. Graham ID, Logan J, O'Connor A et al. A qualitative study of physicians' perceptions of three decision aids. *Patient Educ Couns* 2003;50(3):279-283.
 23. Holmes-Rovner M, Valade D, Orłowski C, Draus C, Nabozny-Valerio B, Keiser S. Implementing shared decision-making in routine practice: barriers and opportunities. *Health Expect* 2000;3(3):182-191.
 24. Charles C, Gafni A, Whelan T. Self-reported use of shared decision-making among breast cancer specialists and perceived barriers and facilitators to implementing this approach. *Health Expect* 2004;7(4):338-348.
 25. Davis RE, Dolan G, Thomas S et al. Exploring doctor and patient views about risk communication and shared decision-making in the consultation. *Health Expect* 2003;6(3):198-207.
 26. Edwards A, Elwyn G. Involving patients in decision making and communicating risk: a longitudinal evaluation of doctors' attitudes and confidence during a randomized trial. *J Eval Clin Pract* 2004;10(3):431-437.
 27. Hibbard JH, Greene J, Tusler M. Improving the outcomes of disease management by tailoring care to the patient's level of activation. *Am J Manag Care* 2009;15(6):353-360.
 28. van Tol-Geerdink JJ, Stalmeier PF, van Lin EN et al. Do patients with localized prostate cancer treatment really want more aggressive treatment? *J Clin Oncol* 2006;24(28):4581-4586.
 29. Bruera E, Willey JS, Palmer JL, Rosales M. Treatment decisions for breast carcinoma: patient preferences and physician perceptions. *Cancer* 2002;94(7):2076-2080.
 30. Brown RF, Butow PN, Dunn SM, Tattersall MH. Promoting patient participation and shortening cancer consultations: a randomised trial. *Br J Cancer* 2001;85(9):1273-1279.
 31. Huizenga GA, Slijfer DT, van de Wiel

- HB, van der Graaf WT. Decision-making process in patients before entering phase III cancer clinical trials: a pilot study. *Cancer Nurs* 1999;22(2):119-125.
32. Coleman T. Using video-recorded consultations for research in primary care: advantages and limitations. *Fam Pract* 2000;17(5):422-427.
33. Krarup PM, Jorgensen LN, Andreasen AH, Harling H. A nationwide study on anastomotic leakage after colonic cancer surgery. *Colorectal Dis* 2012;14(10):e661-e667.
34. www.ipdas.ohri.ca/IPDAS_Background.pdf.
35. Elwyn G, Frosch D, Rollnick S. Dual equipoise shared decision making: definitions for decision and behaviour support interventions. *Implement Sci* 2009;4:75.
36. Bollschweiler E, Apitzsch J, Obliers R et al. Improving informed consent of surgical patients using a multimedia-based program? Results of a prospective randomized multicentre study of patients before cholecystectomy. *Ann Surg* 2008;248(2):205-211.
37. Bader JL, Strickman-Stein N. Evaluation of new multimedia formats for cancer communications. *J Med Internet Res* 2003;5(3):e16.
38. Evrard S, Mathoulin-Pelissier S, Larrue C, Lapouge P, Bussieres E, Tunon De LC. Evaluation of a preoperative multimedia information program in surgical oncology. *Eur J Surg Oncol* 2005;31(1):106-110.
39. Gilbert JE, Green E, Lankshear S, Hughes E, Burkoski V, Sawka C. Nurses as patient navigators in cancer diagnosis: review, consultation and model design. *Eur J Cancer Care* 2011;20(2):228-236.

