

Title: Sharing vs. Caring - The relative impact of sharing decisions versus managing emotions on patient outcomes

Running Head: Comparing the effect of shared decision making and emotional relating on patient outcomes

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## **Abstract**

*Objective:* To assess the relative impact of cognitive and emotional aspects of shared decision making (SDM) on patient outcomes.

*Methods:* Cognitive and emotional aspects of SDM in consultations between 20 oncologists and 55 early breast cancer patients were coded using the Observing Patient Involvement (OPTION) scale and the Response to Emotional Cues and Concerns (RECC) coding system, plus blocking and facilitating behaviour scales. Patient outcomes including anxiety, decisional conflict, and satisfaction with: i) the decision, ii) the consultation, and iii) doctor SDM skills, were assessed. Relationships between cognitive and emotional aspects of SDM, and patient outcomes were examined using hierarchical regression.

*Results:* The OPTION score predicted satisfaction with doctor SDM skills 2 weeks post-consultation ( $p=.010$ ), and with the treatment decision 4 months post-consultation ( $p=.004$ ). Emotional blocking predicted decisional conflict ( $p=.039$ ), while the number of emotional cues emitted ( $p=.003$ ), and the degree of empathy provided ( $p=.011$ ), predicted post-consultation anxiety.

*Conclusion:* Cognitive and emotional aspects of SDM in oncology consultations have different effects on various patient outcomes.

*Practice Implications:* It is important that doctors focus on both sharing decisions and managing emotions in consultations. Communication skills training addressing both these areas may be an effective way to improve diverse patient outcomes.

*Keywords:* doctor-patient communication, shared decision making, emotional relating, patient outcomes, oncology.

## 1. Introduction

In recent times shared decision making (SDM) has become the favoured model of treatment decision making, largely due to an increased emphasis on informed choice driven by the consumer rights movement, and changes in the nature of contemporary medical care [1]. Shared decision making refers to the mutual involvement of the doctor and patient in all aspects of decision making: information exchange, deliberation regarding treatment options, and choosing which treatment to implement [2]. The elicitation of patients' fears, concerns and hopes has also been identified as a critical aspect of this process, through interviews with key informants regarding the essential components of SDM [3]. In addition, Stewart [4] noted that SDM could not occur outside of a caring, respectful and empowering doctor-patient relationship.

Further to granting patients' greater autonomy and control over their care, there is some evidence that SDM improves patient outcomes, such as decisional conflict, satisfaction, and psychological adjustment [5,6]. However, research indicates that SDM accounts for only a small amount of variance in some of these outcomes [7], and is not always practical, or desired by patients [8,9]. Further, the specific components of SDM that produce beneficial outcomes have not been clearly delineated. In particular, it is unclear whether it is the cognitive aspects of SDM (information exchange, deliberation and choice), or the relationship that is established between the doctor and patient during this process, which lead to positive outcomes. For example, Fallowfield et al [10] found that after SDM in breast surgery consultations, it was not *having* choice that produced improved psychological adjustment per se, but rather being seen by a surgeon who routinely *offered* choice.

Other research has highlighted the impact of emotional aspects of SDM such as emotional relating (facilitation of emotional expression and provision of empathy), on patient outcomes

including satisfaction and psychological adjustment [11]. For example, a survey of 454 patients attending an oncology outpatient clinic showed that physician attentiveness and empathy were associated with greater patient satisfaction, increased self-efficacy, and reduced emotional distress [12]. Street et al [13] found that patient participatory behaviours were associated with doctor supportive talk, further demonstrating the inter-relatedness of these behaviours. In a later paper, Street et al [14] noted that communication might affect health in a number of ways, including indirectly via proximal outcomes of the interaction (e.g. satisfaction with care). They suggested that future research should investigate relationships between specific aspects of communication and particular patient outcomes, and hypothesise potential pathways for any associations.

One pathway by which specific aspects of communication, namely the cognitive and emotional aspects of SDM, may affect patient outcomes is outlined in Leventhal's parallel processing model [15]. According to this model, people adapt to health threats via cognitive and emotional processing of illness information [15]. Both representations influence the patient's appraisal of threat, which in turn influences their behaviour. Thus, doctors need to consider both their cognitive and emotional interactions with patients in order to optimise coping.

Systems for coding SDM in medical consultations have tended to focus on the cognitive aspects of SDM. The Observed Patient Involvement (OPTION) scale for instance, codes whether the doctor defines the problem, explains the existence of different treatment options, describes the outcomes associated with these options, and initiates the decision-making process [16].

Emotional relating is usually coded outside the context of an over-arching communication framework like SDM. For example, the Response to Emotional Cues and Concerns (RECC)

coding system described below, was developed to characterise doctors' responses to emotional expressions; however, it captures emotional relating behaviours described by Ford et al [3] as essential components of SDM.

The aim of the current study was therefore to assess the relative impact of cognitive and emotional aspects of SDM on patient outcomes in a single dataset. It was hypothesised that doctor behaviours targeting cognitive processing of information (as measured by the OPTION scale) would account for more variance in outcomes related to the decision itself, such as decisional conflict and decisional satisfaction. In contrast, it was hypothesised that doctor behaviours focused on eliciting and responding to emotion (as measured by the RECC coding system) would account for more variance in outcomes linked with emotional processing, such as anxiety and satisfaction with the consultation.

## **2. Methods**

The audio-taped consultations and patient outcome data analysed in this study come from the International Breast Cancer Study Group (IBCSG) Trial 33-03, which is evaluating the efficacy of a communication skills training program.

### **2.1. Sample**

#### **2.1.1. Clinicians**

Medical, radiation and surgical oncologists from Australian, New Zealand and European centers participating in IBCSG clinical trials were invited to take part in the communication study.

However, to avoid cross-cultural issues (such as differences in emotional expression, clinic organization and services) clouding the results, only data from the Australian and New Zealand

participants were included in the current analysis. Australia and New Zealand both have a public health system, although in Australia there are tax incentives to join a private health fund.

### **2.1.2. Patients**

Eligible patients were: i) over the age of 18, ii) newly diagnosed with early-stage breast cancer, iii) competent at communicating in English, and iii) mentally and physically capable of participating in the study.

### **2.2. Procedure and study design**

Ethics approval was obtained from the University of Sydney and area health service ethics committees linked to participating cancer centres (n=10). Participating doctors were asked to invite consecutive patients with whom treatment options would be discussed to take part in the study. Patients completed a baseline assessment prior to their initial consultation eliciting demographics, information and involvement preferences, and current anxiety levels. Doctors were asked to audiotape their consultations with a subset of the patient cohort (on average three to four per doctor). In the original study these were used to provide feedback to doctors about their consultation skills. Two weeks after their initial consultation, patients were mailed a questionnaire assessing their: i) level of decisional conflict, ii) satisfaction with their treatment decision, iii) satisfaction with the consultation, iv) satisfaction with doctor SDM skills, and v) current anxiety levels. Patients were mailed another questionnaire assessing satisfaction with the decision four months after the consultation.

Quantitative and qualitative data were available from 70 audio-taped consultations. After removing cases with incomplete transcripts (due to recording problems), or insufficient patient data (due to non-return of questionnaires), a total of 55 consultations from 20 clinicians were

included in the current study. No differences in demographics or patient outcomes were found between the 55 complete cases and the 15 cases with incomplete data (data not shown).

### **2.3. Coding**

Audio-taped consultations were transcribed verbatim. The OPTION scale [16], and the RECC coding system [17,18], plus scales assessing blocking and facilitating behaviours [19], were applied to the transcripts by different coders to minimise bias. Coders were trained on five incomplete transcripts (excluded from the main analysis) by an experienced independent coder until a high level of agreement was established. Coders read the hard copy of the transcript while listening to the audio-tape to pick up para-verbal cues. When coding was complete, each coder re-coded 10% of the transcripts coded by a second coder to establish inter-rater reliability.

### **2.4. Coding Systems**

#### The Observing Patient Involvement (OPTION) scale

The 12 item OPTION scale was designed by European researchers to assess key competences of doctors' SDM behaviours, namely: defining the problem, explaining the existence of different treatment options, describing the outcomes associated with these options, and initiating the decision-making process [16]. Shared decision making is assessed on a five-point scale, ranging from "the behaviour is not observed" (0) to "the behaviour is exhibited to a very high standard" (4). Raw scores for the OPTION scale, ranging from 0 to 48, were transformed to a score out of 100. Higher scores indicate a high level of behaviour exhibiting the competences of SDM. Evaluation of the OPTION scale in the general practice setting has demonstrated its' construct validity through associations with factors thought to affect involvement in decision making, such as age and the presence of equipoise in consultations [16]. It has also shown the ability to reliably

detect differences between practitioners and the extent to which they involve patients in decision making [16]. Inter-rater reliability was confirmed for the 12 statements with a mean kappa score of 0.66 [16]. In the current study the mean inter-rater kappa score was 0.58 indicating acceptable agreement after correcting for chance.

### The Response to Emotional Cues and Concerns (RECC) coding system

The RECC system [17,18] is based on general counseling theory, which emphasises the importance of facilitating emotional expression and responding in an empathic manner [20]. It was developed to code emotional expressions, specifically cues, concerns, and psychosocial issues raised by cancer patients, and doctor responses to these. This system has proven inter-rater reliability [17,18], and has demonstrated associations with patient outcomes such as depression [18]. It has been further developed by the Verona Network on Sequence Analysis group [21], although the original version of the coding system (with some minor modifications) is used here. A cue was defined as a verbal or non-verbal expression by the patient that contained an implicit reference to negative emotional content (e.g. “I just can’t seem to relax”). A concern was defined as an explicit expression of a negative emotion related to an issue of importance to the patient (e.g. “I am so worried about this constant pain”). A psychosocial issue was defined as a reference to a lifestyle issue, without any associated negative emotion (e.g. “Will I be able to work during my chemotherapy?”).

The specific features of each cue and concern, such as the initiator, and the intensity of the expressed emotion were coded for descriptive purposes. Cues and concerns were coded as being initiated by the doctor if they occurred immediately after the doctor had said something with psychosocial content (e.g. “How have you been feeling?” or “That must have been very hard for



you.”). Cues and concerns were coded as initiated by the patient if they occurred without such a prompt. Cues and concerns were coded as *weak* if the implicit or explicit emotion was of low intensity (e.g. “It has been difficult lately”). Cues and concerns were coded as *strong* if the implicit or explicit emotion was of high intensity (e.g. “I’ve been extremely worried” or “It’s been terrible”).

The doctor’s level of empathy in response patient cues or concerns was coded as follows:

Level 0: Ignores, changes the subject or offers false reassurance;

Level 1: Responds with minimal encouragers (e.g. “Mmmm”, “Yes”, “Indeed”)

Level 2: Responds to content or feeling (e.g. “It must be hard for you...”)

Level 3: Responds to feeling and invites elaboration (e.g. “I can see you are worried...can you tell me a bit more about what scares you?”)

The total number of cues and concerns emitted, and the average empathy level (0-3) of doctors’ responses across all cues and concerns were calculated. The initiator and the intensity of each cue and concern were not taken into account when calculating doctors’ empathy levels.

### Blocking and facilitating behaviour scales

These scales were developed to assess doctor blocking and facilitating behaviours as part of a previous study evaluating communication skills training in eliciting and responding to emotional cues [19]. Specifically, the 10 item blocking behaviour scale identified behaviours known to hinder discussion of emotional issues (e.g. interrupting, monopolising, changing the subject). Conversely, the 9 item facilitating behaviour scale included behaviours that facilitate such discussions via active listening and conveying basic empathy (e.g. appropriate use of questions, use of words with emotional content, listening without interrupting). The subscales demonstrated

good inter-rater agreement (0.68-0.91). Blocking and facilitating behaviours were identified as per the scales, and then a subjective overall rating was given to the degree of blocking and facilitating behaviour exhibited by the doctor.

Ten percent of consultations were double-coded to determine inter-rater reliability. The average inter-rater kappa score for the RECC coding system and the blocking and facilitating scales was 0.54 indicating acceptable inter-rater agreement after correcting for chance.

## **2.5. Demographics and Outcome Measures**

Decisional Conflict was assessed using two independently validated subscales of the Decisional Conflict Scale (DCS) [22], measuring decisional uncertainty (3 items), and factors contributing to uncertainty (9 items). Subscale scores were summed to produce a total score (12-60). Higher scores (reversed for consistency with other measures) indicate lower decisional conflict. In the current sample the Cronbach's alpha coefficient was 0.71.

Anxiety levels were measured using the state scale of the State-Trait Anxiety Inventory [23], which consists of 20 items measuring current levels of anxiety. Scores range from 20 to 80. Higher scores indicate greater levels of anxiety. Internal consistency has been found to be very high in several normative samples, with Cronbach's alphas above 0.90 [23].

Satisfaction with the decision was assessed using the Satisfaction with Decision Scale [24]. This scale consists of 6 items and total scores range from 6 to 30. Higher scores are indicative of greater satisfaction with the decision. In the current study the Cronbach's alpha coefficient was 0.91.

Satisfaction with the consultation was assessed using a 25 item Likert scale adapted from Roter [25] and Korsch et al [26]. Total scores range from 25 to 125. The measure includes items assessing satisfaction with the: i) amount and quality of information received, ii) communication skills of the clinician, and iii) level of patient participation throughout the consultation. Higher scores indicate greater satisfaction with the consultation. In the current sample, the Cronbach's alpha coefficient was 0.93.

#### Satisfaction with doctor SDM skills

Patient satisfaction with doctor SDM skills was assessed using a 12 item purpose-designed measure. Total scores range from 12-60. Higher scores represent greater satisfaction with doctor SDM skills. The Cronbach's alpha coefficient for the current study was 0.79.

#### Demographic characteristics

Patients' age, gender, marital status, education, occupation, place of birth, first language spoken, and relevant health training were assessed. Doctor characteristics including age, gender, specialty, communication skills training, years of practice, years spent working with cancer patients, and hours per week in direct patient contact were also assessed.

## **2.6. Data Analysis**

Data analyses were conducted using the Statistical Packages for Social Sciences (SPSS) Version 16.0 [SPSS Inc., Chicago, IL]. The OPTION total score, average empathy level over cues/concerns, overall level of blocking behaviour, and overall level of facilitating behaviour were calculated for each consultation. Bivariate Pearson's correlations were conducted as a

preliminary assessment of the hypothesised relationships between each of these variables and patient outcomes.

A series of hierarchical linear regressions were then performed with each of the patient outcomes entered as the dependent variable, and any demographic or consultation behaviour variables that were correlated at  $\leq 0.3$  entered as independent variables. These included the OPTION total score, level of blocking behaviour, and average empathy score.

### **3. Results**

Ten centres participated, with a median of 1.5 doctors per centre (range: 1-6), and 3 patients per doctor (range: 1-5). The doctor sample consisted of 11 male and 9 female doctors, with a mean age of 47 years (SD=8.5, range 33-62). Eleven were medical oncologists, 6 were radiation oncologists, and 3 were surgical oncologists with an average of 20 years in practice (SD= 10.3, range 2-37). Participating patients (n=55) had a mean age of 52.5 years (S.D=12.5, range 31-81), and almost two-thirds (62%) were in a married or de facto relationship. Nearly three quarters (72.7%) were born in Australia or New Zealand, and close to 89% listed English as their first language. The highest level of education reached by most of the women (62%) was secondary schooling, and 61% were working in a non-professional capacity. Less than a quarter of all patients reported some form of healthcare training (18%).

#### **3.1. SDM in consultations**

The mean total score on the OPTION scale was 23.44 (SD=9.1, range 10-44). Although this mean score is higher than reported in previous samples [16], in absolute terms it still indicates a low level of SDM behaviours, with most items being rated as not observed or minimally

exhibited.

### **3.2. Emotional relating in consultations**

A total of 51 cues, concerns and psychosocial issues were identified, with a median of 5 per consultation, and a range of 0-14 (additional details can be found in Table 1). Emotional expressions were initiated by patients (48%) and doctors (48%) equally, most commonly in the form of a verbal cue (52%), with the intensity of emotion being weak in the majority of cases (63%). Most emotional expressions were related to existential issues (48%), and almost two thirds (63%) were responded to with no empathy. As Table 2 indicates, whilst more than two thirds of the consultations (69%) contained a medium to high level of facilitating behaviour, half of the consultations (50%) also contained a medium to high level of blocking behaviour.

*Table 1 & 2 about here*

### **3.3. Patient Outcomes**

Descriptive statistics for all patient outcomes are shown in Table 3. Satisfaction with the treatment decision remained high and stable over time. Satisfaction with the consultation was also high, but there was more variability in satisfaction with doctor SDM skills. Anxiety and decisional conflict were relatively low in this sample.

*Table 3 about here*

### **3.4. Relationships between consultation behaviours and patient outcomes**

Correlations between scores on each coding system and outcome measure are displayed in Table 4. Table 5 shows the results of the 6 linear regressions conducted with each of the patient outcomes entered as the dependent variable, and the number of cues, average empathy, level of blocking behaviour, and OPTION total score entered as independent variables. As facilitation scores were highly correlated with blocking, they were not included in the regression analyses.

*Table 4 about here*

The OPTION score significantly predicted satisfaction with doctor SDM skills two weeks after the consultation ( $p=.010$ ), and with the treatment decision 4 months after the consultation ( $p=.004$ ). Blocking significantly predicted decisional conflict ( $p=.039$ ), while the number of cues ( $p=.003$ ), and the degree of empathy ( $p=.011$ ) significantly predicted post-consultation anxiety. However, only a moderate amount of variance was explained by these variables, ranging from 38% for post-consultation anxiety to 2% for satisfaction with the consultation.

*Table 5 about here*

## **4. Discussion and Conclusion**

### **4.1. Discussion**

This study was the first in the literature to directly compare the impact of SDM and emotional relating on patient outcomes. It was shown that both emotional relating and SDM behaviours within oncology consultations are related to patient outcomes. Consistent with expectations, SDM as coded by the OPTION scale predicted patient satisfaction with doctor SDM skills and

satisfaction with the decision 4 months later. The number of cues elicited and doctors' provision of empathy were significantly related to patient post-consultation anxiety. However, counter to what was hypothesised, higher levels of these facets of emotional relating were predictive of higher, rather than lower anxiety. Higher levels of blocking behaviour, which was common in this dataset, predicted a higher level of patient decisional conflict. Short-term satisfaction with the decision and satisfaction with the consultation were not explained by either SDM behaviours, or the degree of emotional relating during the consultation. Possible explanations for these findings are explored below.

The importance of SDM behaviours was reinforced by the significant associations between doctors' SDM behaviours and patient satisfaction with the decision and SDM, which are concordant with previous findings demonstrating the impact of SDM on patient satisfaction [6,27]. Nevertheless, the doctor's SDM behaviours explained only 31% and 24% of the variance in satisfaction with the decision and doctor SDM skills respectively. This suggests that patients may be using different, or additional criteria of SDM, to that embodied in the OPTION scale. Other research has suggested that patients' views of SDM do not always correspond with academic or clinical conceptions [28]. Further research is needed to establish items for SDM coding systems that accurately reflect what is important to patients, and can enhance the prediction of patient outcomes.

SDM behaviours were not associated with decisional conflict. Previous studies have found that interventions designed to facilitate SDM (such as decision aids) reduce decisional conflict [e.g. 29], although a recent review concluded that evidence of effectiveness is mixed [30]. In contrast, blocking behaviour, such as interrupting and monopolising, *was* associated with increased

decisional conflict. Blocking may have prevented the patient from exploring concerns about the available treatments. As a result, patients may have felt they did not have adequate advice or support to help them make difficult treatment choices. SDM behaviours that do not directly address patient concerns may be less helpful to patients in making decisions, and this may explain variability in study findings regarding this outcome.

Surprisingly, neither blocking nor any of the more constructive emotional relating behaviours, were associated with consultation satisfaction. However, satisfaction measures are known to suffer from ceiling effects [18,31], so the results of analyses involving this variable tend to be inconclusive [32]. Indeed, in the current data set, average satisfaction rates were high, and none of the behaviours assessed were associated with this outcome. Improved strategies to capture patient satisfaction are still needed.

As predicted, doctors' ability to elicit and respond to emotional cues and concerns with empathy in the consultation was associated with post-consultation anxiety, but in the opposite direction to that hypothesised. Patients whose doctors elicited and responded empathically to more emotional cues were more anxious after the consultation. In this study, post-consultation anxiety was highly correlated with pre-consultation anxiety and with the number of cues emitted. Perhaps anxious patients gave more cues in the consultation and doctors, while detecting and responding to these cues to the best of their ability, were unable to provide the reassurance required. Other studies [e.g. 33] have found that when health professionals respond to emotions, short-term anxiety increases, perhaps because emotions and difficult issues are being aired. However, short-term elevated levels of anxiety and decisional conflict should not necessarily be perceived as adverse outcomes. In fact, such responses could be expected considering the complexity of information,



and the emotionally charged atmosphere characterising consultations that involve discussion of treatment options closely following initial diagnosis of cancer. Indeed, increased levels of decisional conflict and anxiety short-term may be a reflection of a thorough discussion of pros and cons of various treatment options. Further, studies that have included longer follow-up have shown that health professional empathy does result in reduced psychological morbidity [18], suggesting that resolution takes time.

#### **4.2. Conclusion**

The findings of this study reinforce the importance of both SDM and emotional relating in consultations with cancer patients, with both being linked to important but different patient outcomes. This study was limited in the relatively small number of consultations analysed (n=55), which restricted its power to detect more subtle relationships between variables. It also precluded multilevel analyses assessing any affect of variables, such as doctor specialty or recruitment centre, on patient outcomes. Study strengths were the homogeneity of consultations (initial consultations with early stage breast cancer patients) and the independent coding of consultations using two coding systems. Future studies could fruitfully employ similar methodology in varying patient groups confronting different decisions.

#### **4.3. Practice Implications**

Both SDM and emotional relating seem to affect patient outcomes. Consequently, it is important that doctors focus not only on sharing decisions but also on managing emotions in the consultation. Previous literature indicates that communication skills training is effective in improving both SDM and emotional relating [34]. Therefore, it is important that communication

skills training programmes address both these areas if they are to be effective in improving patient outcomes.

I confirm all patient/personal identifiers have been removed or disguised so the patient/person(s) described are not identifiable and cannot be identified through the details of the story.

## References

- [1] Charles C, Gafni A, Whelan T. Shared decision-making in the medical encounter: What does it mean? (Or it takes at least two to tango). *Soc Sci Med* 1997;44:681-92.
- [2] Charles C, Gafni A, Whelan T. Decision-making in the physician patient encounter: Revisiting the shared treatment decision-making model. *Soc Sci Med* 1999;49:651-61.
- [3] Ford S, Schofield T, Hope T. What are the ingredients for a successful evidence-based patient choice consultation?: A qualitative study. *Soc Sci Med* 2003;56:589-602.
- [4] Stewart, MA. Effective physician-patient communication and health outcomes: a review. *CMAJ* 1995;152:1423-1433.
- [5] Fallowfield LJ, Hall A, Maguire P, Baum M, A'Hern RP. Psychological effects of being offered choice of surgery for breast cancer. *Br Med J* 1994;309:448.
- [6] Joosten EAG, DeFuentes-Merrillas L, de Weert GH, Sensky T, van der Staak CPF, de Jong CAJ. Systematic review of the effects of shared decision-making on patient satisfaction, treatment adherence and health status. *Psychother Psychosom* 2008;77:219-26.
- [7] Ong LML, Visser MRM, Lammes FB, de Haes JCM. Doctor-patient communication and cancer patients' quality of life and satisfaction. *Patient Educ Couns* 2000;41:145-56.
- [8] Butow PN, Solomon M, Young JM, et al. Consumer impact of an interactive decision aid for rectal cancer patients offered adjuvant therapy. *Colorectal Dis* 2006;8:676-82.
- [9] Lam W, Fielding R, Chan M, Chow L, Ho E. Participation and satisfaction with surgical treatment decision-making in breast cancer among Chinese women. *Breast Cancer Res & Tr* 2003;80:171-80.

- [10] Fallowfield LJ, Hall A, Macguire CP, et al. Psychological outcomes of different treatment policies in women with early breast cancer outside a clinical trial. *Br Med J* 1990;301:575-580.
- [11] Neumann M, Wirtz M, Bollschweiler E, Mercer SW, Warm M, Wolf J, Pfaff H. Determinants and patient-reported long-term outcomes of physician empathy in oncology: A structural equation modelling approach. *Patient Educ Couns* 2007;69:63-75.
- [12] Zachariae R, Pederson CG, Jensen AB, Ehrnrooth E, Rossen PB, von der Maase H. Association of perceived physician communication style with patient satisfaction, distress, cancer-related self efficacy, and perceived control over the disease. *Br J Cancer* 2003;88:658-65.
- [13] Street RL Jr, Gordon HS, Ward MM, Krupat E, Kravitz RL. Patient participation in medical consultations: why some patients are more involved than others. *Med Care* 2005;43:960-9.
- [14] Street RL Jr, Makoul G, Arora NK, Epstein RM. How does communication heal? Pathways linking clinician-patient communication to health outcomes. *Patient Educ Couns* 2009;74:295-301.
- [15] Leventhal H. Findings and theory in the study of fear communications. *Adv Exp Soc Psychol* 1970;5:119-86.
- [16] Elwyn G, Hutchings H, Edwards A, Rapport F, Wensing M, Cheung W, Grol R. The OPTION scale: measuring the extent that clinicians involve patients in decision-making tasks. *Health Expectations* 2005;8:34-42.
- [17] Butow PN, Brown RF, Cogar S, Tattersall MHN, Dunn SM. Oncologists' reactions to cancer patients' verbal cues. *Psycho-Oncology* 2002;11:47-58.

- [18] Duric V, Butow P, Sharpe L, Lobb E, Meiser B, Barrat A, Tucker K. Reducing psychological distress in a genetic counseling consultation for breast cancer. *J Genet Couns* 2003;12(3):243-264.
- [19] Butow P, Cockburn J, Girgis A, et al. Increasing oncologists' skills in eliciting and responding to emotional cues: Evaluation of a communication skills training program. *Psycho-Oncology* 2008;17:209-218.
- [20] Hill CE, Corbett M. A perspective on the history of process and outcome research in counseling psychology. *Jnl Couns Psych* 1993;40:3-24.
- [21] Del Piccolo, Goss C, Zimmermann C. The third meeting of the Verona Network on Sequence Analysis: Finding common grounds in defining patient cues and concerns and the appropriateness of provider responses. *Patient Educ Couns* 2005;57:241-4.
- [22] O'Connor A. Validation of a decisional conflict scale. *Med Decis Making* 1995;15:25-30.
- [23] Spielberger CD. Manual for the State-Trait Anxiety. Palo Alto: Consulting Psychologists Press, 1983.
- [24] Holmes-Rovner M, Kroll J, Schmitt N, Rovner DR, Breer ML, Rothert ML, Padonu G, Talarczyk G. Patient satisfaction with health care decisions: The satisfaction with the decision scale. *Med Dec Making* 1996;16:58-64.
- [25] Roter D. Patient participation in the patient-provider interaction: The effect of patient question asking on the quality of interaction, satisfaction and compliance. *Health Educ Monogr* 1977;5:281-315.
- [26] Korsch BM, Gozzi EK, Francis V. Gaps in doctor-patient communication. *Pediatrics* 1968;42:855-71.

- [27] Gattellari M, Butow PN, Tattersall MHN. Sharing decisions in cancer care. *Soc Sci Med* 2001;52:1865-78.
- [28] Entwistle V, Prior M, Skea ZC, Francis JJ. Involvement in treatment decision-making: Its meaning to people with diabetes and implications for conceptualisation. *Soc Sci Med* 2008;66:362-75.
- [29] Schwartz MD, Valdimarsdottir HB, DeMarco TA, Peshkin BN, Lawrence W, Rispoli J, Brown K, Isaacs C, O'Neill S, Shelby R, Grumet SC, McGovern MM, Garnett S, Bremer H, Leaman S, O'Mara K, Kelleher S, Komaridis K. Randomized trial of a decision aid for BRCA1/BRCA2 mutation carriers: impact on measures of decision making and satisfaction. *Health Psychol* 2009;28:11-9.
- [30] Leatherman S, Warrick L. Effectiveness of decision aids: a review of the evidence. *Medical Care Res Rev* 2008;65:79S-116S,
- [31] Brown R, Dunn S, Butow P. Meeting patient expectations in the cancer consultation. *Ann Oncol* 1997;8:877-82.
- [32] Mead N, Bower P. Patient-centred consultations and outcomes in primary care: a review of the literature. *Patient Educ Couns* 2002;48:51-61.
- [33] Michie S, Marteau, T, Bobrow M Genetic counseling: the psychological impact of meeting patients' expectations. *J Med Gen* 1997;34:237-41.
- [34] Fallowfield L, Jenkins V, Farewell V, Saul J, Duffy A, Eves R. Efficacy of a Cancer Research UK communication skills training model for oncologists: a randomised controlled trial. *Lancet* 2002;359:650-6.