ORIGINAL REPORT

Interpretation in Consultations With Immigrant Patients With Cancer: How Accurate Is It?

Phyllis N. Butow, David Goldstein, Melaine L. Bell, Ming Sze, Lynley J. Aldridge, Sarah Abdo, Michelle Tanious, Skye Dong, Rick Iedema, Janette Vardy, Ray Ashgari, Rina Hui, and Maurice Eisenbruch

Phyllis N. Butow, Melaine L. Bell, Ming Sze, Lynley J. Aldridge, Sarah Abdo, Michelle Tanious, Skye Dong, University of Sydney; Phyllis N. Butow, Ming Sze, Lynley J. Aldridge, Sarah Abdo, Michelle Tanious, Centre for Medical Psychology and Evidence-Based Decision-Making, University of Sydney; David Goldstein, Prince of Wales Hospital; Rick Iedema, University of Technology Sydney; Janette Vardy, Concord Hospital, Sydney; Ray Ashgari, Bankstown Hospital, Bankstown; Rina Hui, Westmead Hospital, Westmead, and Blacktown Hospital, Blacktown, New South Wales; and Maurice Eisenbruch, Monash University, Caulfield East, Victoria, Australia.

Corresponding author: Phyllis Butow, PhD, University of Sydney, Rm 164 Transient Building F12, New South Wales 2006 Australia; e-mail: phyllis.butow@sydney.edu.au.

ABSTRACT

Purpose
Immigrants with cancer often have professional and/or family interpreters to overcome challenges communicating with their health team. This study explored the rate and consequences of nonequivalent interpretation in medical oncology consultations.

Patients and Methods
Consecutive immigrant patients with newly diagnosed with incurable cancer, who spoke Arabic, Cantonese, Mandarin, or Greek, were recruited from the practices of 10 medical oncologists in nine hospitals. Their first two consultations were audio taped, transcribed, translated into English and coded.

Results
Thirty-two of 78 participants had an interpreter at 49 consultations; 43% of interpreters were family, 35% professional, 18% both a professional and family, and 4% a health professional. Sixty-five percent of professional interpretations were equivalent to the original speech versus 50% for family interpreters ($P = .02$). Seventy percent of nonequivalent interpretations were inconsequential or positive; however, 10% could result in misunderstanding, in 5% the tone was more authoritarian than originally intended, and in 3% more certainty was conveyed. There were no significant differences in interpreter type for equivalency of interpretations.

Conclusion
Nonequivalent interpretation is common, and not always innocuous. Our study suggests that there may remain a role for family or telephone versus face-to-face professional interpreters. Practice implications: careful communication between oncologists and interpreters is required to ensure optimal communication with the patient.

J Clin Oncol 29:2801-2807. © 2011 by American Society of Clinical Oncology

INTRODUCTION

Migration is increasing worldwide, with the number of people who do not speak the dominant language of the country in which they live similarly increasing.[1] Immigrants diagnosed with cancer have poorer outcomes than comparable nonimmigrant groups, with lower screening and survival rates,[2,3] more adverse effects, poorer quality of life,[4,5] and greater distress.[6,7]

Such disparities may be due to unfamiliarity with health care systems, difficulty accessing care, and poor doctor-patient communication.[8] Immigrants often report that they struggle with language difficulties, lack information, and that health professionals do not understand them, which may adversely affect their psychological and physical well being.[8-11]

While the provision of interpreters potentially addresses these difficulties, studies have revealed problems with medical interpretation, including inaccuracy, inconsistency,[12,13] and confusion regarding the interpreter's role.[14] Medical interpreting standards of practice developed by the International Medical Interpreters Association[15,16] and the Australian Institute of Interpreters and Translators Inc[16] state that interpreters must interpret accurately and maintain confidentiality, impartiality, and professional distance at all times. However, while in both the United States and Australia accreditation bodies oversee standards of interpreter training, the content of such training is diverse and it is impossible to determine how clearly they communicate standards of conduct. It is clear that interpreters experience difficulty trying to adhere to these standards.[17]

These challenges may be further heightened in oncology because of the complexity of information and treatment options, cultural stigma related to cancer, and the frequency with which bad news is discussed.[18] Australian interpreters do not receive

oncology-specific training and often interpret across diseases; thus their knowledge of oncology-specific terms and issues may be limited. However, no studies to date have explored oncologist/interpreter/patient communication in the adult oncology setting.

This study aimed to describe the equivalency of messages conveyed by interpreters, the nature of differences in interpreted messages when they occurred, their possible impact on the immigrant patient with cancer, and predictors of nonequivalent interpretations. This study is part of a larger study evaluating immigrant-oncologist communication.

PATIENTS AND METHODS

Community Advisory Boards and Patients and Methods

Three community advisory boards comprising health professionals, community representatives, and consumers from each language group were established to provide advice on study methods.

Consecutive adult cancer patients who: had newly diagnosed incurable cancer either at first presentation or as a recurrence; had either immigrated to Australia from countries where Arabic, Cantonese, Mandarin, or Greek is spoken, or were born in Australia or another predominantly English speaking country and were of Anglo-Australian ethnicity; and where possible at least one family member/friend accompanying the patient to their consultation, were recruited from the practices of 10 medical oncologists in nine hospitals. These language groups are among the largest recent immigrant groups in Australia and encompass diverse nationalities, dialects, religious affiliations, and historical experiences.

Procedure

Patients were identified as potentially eligible by their oncologist, and introduced to bilingual research staff, who provided further information about the study and gained consent. If a family member was not present, the patient was provided with an information sheet and consent form for the family member, to take home. Patients and carers completed a measure eliciting demographic variables including age, sex, and whether they had any medical or allied health training. Cancer variables were provided by the oncologist.

Where possible, the first two consultations after diagnosis of metastatic disease were audio-taped, transcribed, and translated into English by bilingual researchers with high level language skills in both languages (English, and Arabic, Chinese, or Greek) and coded, using the English translation. Consultations could include a family member/friend and often included an interpreter. We chose this point of the cancer trajectory because it is a time of heightened need for information and emotional support, when effective doctor-patient communication is arguably critical. After the second consultation, the patient and family member were interviewed by a bilingual researcher regarding their consultation experience.

Coding

We developed a coding system for analyzing interpretations based on the literature on immigrant communication and interpretation challenges[8-29] and a careful reading of 20 consultations. The coding system was discussed, refined, manualized, and applied by the authors to five consultations. Disparities in coding were discussed and resolved. A further three consultations were coded and final changes made. Two coders completed the coding.

The consultation was divided into speech units which change when a person stops speaking. The coder noted for each speech unit who was speaking (ie, doctor, patient, family/friend, professional interpreter in person or on telephone, family/friend interpreter); we also coded to whom the speech was directed (same categories). All interpretations were coded as equivalent or nonequivalent to the source speech. If not equivalent, we coded how the speech had changed (eg, missing information, added information) and our perception of the potential impact of that change (Table 1). Codes were transferred into SAS version 9.2 (SAS Institute, Cary, NC) for analysis.

The coders were bilingual (in English, and Chinese or Arabic) and so for most transcripts could refer back to the original language transcript if necessary. They recoded a random 10% of their own and the other's consultations to determine intra- and inter-rater reliability. Reliability was considered by calculating the mean proportion of equivalently interpreted speech units for six patients (inter-rater) and five patients (intrarater). Inter- and intrarater reliability for identical interpretation was 80% and 92%; for "what had changed" was 90% and 97%, respectively; and for the outcome of this change 78% and 82%.

The Human Research Ethics Committees at the University of Sydney and at all participating sites approved the study.

Analysis

To model the proportion of interpreted speech units that were equivalent, we used binary mixed models with a random subject effect, as implemented in SAS version 9.2 Proc NLMixed and Glimmix (SAS Institute, Cary, NC). This accounted for the lack of independence in the data (multiple speech units and multiple consultations for each patient). To explore predictors of potentially negative nonequivalent interpretations, we collapsed the following coding categories: misinformation, authoritative/paternalistic, euphemistic, less certainty, or more certainty. Predictors considered of nonequivalent interpretations were: patient age, acculturation, years in Australia, sex, language group, and English ability, whether the interpreter was a professional, and the content and function of the speech.

RESULTS

Ten oncologists participated; their demographic and practice details are presented in Table 2. Seventy-eight patients participated in the larger study and completed the baseline assessment, of whom 47 were immigrants and 32 had an interpreter present, either professional or family. These 32 patients (20 Chinese, five Arabic, and seven Greek) formed the sample for this analysis. Eighty-six percent of these patients had between one and four family members and/or friends at their cancer consultation, for a total of 58 carers.

Fifty-six percent of 32 patients had two consultations; four had a professional interpreter for one consultation, but not both. We used only the consultation for which an interpreter was present. Sensitivity analyses showed that results changed only very slightly when all data were used, with these patients classified as immigrants with interpreters. This resulted in a total pool of 49 consultations available for analysis.

In these 49 consultations, most frequently the interpreter was professional, physically present (39%), a family member without medical/allied health training (33%), a professional over the phone (14%), and a family member with medical/allied health training (8%; Table 3). We were not able to test the interpreters' knowledge of oncology or its terminology.

Demographic and disease characteristics of patients and family members who had an interpreter present are presented in Table 4. Patients had a median age of 65, and were most commonly diagnosed with lung (38%) or breast cancer (16%). Sixty-one of their carers completed demographic questionnaires. Most often, family members were the spouse (29%) or offspring (52%) of the patient.

Equivalency of Interpretation

On average, interpretations were equivalent 60% of the time (95% CI, 52% to 68%). Professional interpretations were equivalent 65% of the time, whereas family and friend interpretations were

Table 1. Mean Proportion of Functionally Non-Equivalent Interpretations With Different Outcomes

Outcome	Example	Mean Proportion	Range
No change			
Meaning unchanged	Dr: You are doing well Int: You are doing fine Professional interpreter	17.16	13.25-21.07
Insignificant information omitted	Dr: I have booked you in to see the radiation oncologist at 4 pm in the afternoon Int: I have booked you in to see the radiation oncologist at 4 pm Professional interpreter	19.40	14.24-24.56
Positive change			
Corrected or clarified information	Dr: The medication that we gave you for nausea can cause constipation and that's why it's important to take that Blacity regularly Int: Because the medication that he's given for your nausea will cause constipation…that's why he also gives you a medication for your bowel movement. You have to take that medication for your bowel movement regularly…you have to take that more often . . . you have to take that on time Health professional interpreter	21.61	14.58-28.64
Message simplified	Dr: With the first 2 cycle of treatment, we already are seeing that your two tumor markers are coming down Int: After 2 cycle of treatment, your cancer index, your cancer cells index shown in your blood test report are already going down from there Professional interpreter	5.96	3.02-8.91
Comforting, reduced impact	Dr: Under local anaesthetic only Int: It's only under local anaesthetic . . . not very big issue. Under local anaesthetic you don't have pain . . . you don't have pain or any other discomfort Professional interpreter	3.88	2.02-5.75
Potentially negative change			
More certainty than original message	Dr: We think there is a 40% chance that the treatment will prolong your life Int: The treatment will prolong your life Family interpreter	3.14	1.76-4.51
Less certainty or emphasis than original message	Example 1 Dr: You must take the tablets every day for them to work Int: You should take the tablets every day Professional interpreter Example 2 Pt: It just can't plug in. Try several locations, can't find . . . the needle Int: Ah, problem locating the vein Pt: The vein is very weak, very small, very weak Int: Hard to locate the site Professional interpreter	1.46	0.70-2.23
Euphemistic	Dr: Your cancer has grown despite the chemotherapy we have given you Intr: The growth in your lungs has got a little bigger, although you have had chemotherapy Professional interpreter	1.39	0.01-2.76
More authoritative or paternalistic	Example 1 Dr: OK and we do know that because of the extent of the disease in the lung, if we didn't change treatment last time, you would be in much more trouble sooner Int: The treatment I used for you is correct. If it is not changed, the situation would be even worse Pt: Yeah, yeah, yeah, you are right, you are right. This, I am very thankful, you tell (the doctor) that I am very thankful to Doctor Professional interpreter Example 2 Pt: I'm afraid . . . the radiotherapy has already made me like this [weak], after the chemotherapy I would become even more. . . . I can't tolerate Int: (to patient) No! After the radiotherapy . . . your tumor in the lung has grown, and that's why you are like this Int: (to doctor): Yes, she will have the chemotherapy Dr: [not aware of Pt's concern - goes on talking about starting chemotherapy the following week] Pt: Not to start the chemotherapy that soon Int: You can't. No . . ..If it is delayed further, it'll become even worse Family Interpreter	4.99	2.79-7.21
	(continued on following page)		

Table 1. Mean Proportion of Functionally Non-Equivalent Interpretations With Different Outcomes (continued)

Outcome	Example	Mean Proportion	Range
Misinformation given	Example 1	9.74	7.26-12.22
	Dr: From the information I got from you regarding your tumor in China I don't think that you had that particular receptor looked at		
	Int: From the information you gave me about treatment in China, I felt you hadn't received this treatment		
	Professional Interpreter		
	Example 2		
	Dr: I think it is better that she knows. Especially when she is asking the question, for her to know and to be very honest with her. She then knows that she can trust me to be honest and I will answer her questions		
	Int: Hmm, yeh, yeh		
	Dr: [Went on explaining the extent of the disease - 3A lung cancer]		
	Int: She said . . . it should be in its initial stage		
	Family interpreter		

equivalent only 50% of the time (95% CI, 3% to 28% for the difference; $P = .02$). There was no evidence of difference in rates of equivalent interpretations based on who was being interpreted, the content, and whether the professional interpreter was physically present or on the telephone. Among family interpreters with more than five interpretations, there was no evidence of a difference in rates of equivalent interpretations between different relations of the patient (eg, husband, offspring, sister-in-law, unknown; $P = .8$). However, this only represented 14 of 32 patients, and 22 of 50 interpreters.

What Changed in Nonequivalent Interpretations?

Of the 1,274 interpretations which were nonequivalent, we found that on average medical terms were left out or replaced 7% of the time

(4, 9%); information was missing 31% (25, 36%); information was added 15% (11, 18%); words had been changed 40% (35, 45%); and agency had been changed 2% of the time (1, 4%).

What Was the Outcome of Nonequivalent Interpretations?

In many instances, nonequivalent interpretation was judged by coders to have had no effect on the meaning conveyed, an insignificant effect, or potentially a positive effect (Table 1, which includes text exemplars). For example, 21.6% of nonequivalent interpretations were judged to have corrected or clarified information, 5.9% were thought to have simplified information, and 3.9% had the effect of neutralizing or reducing the impact of challenging information (although the latter may have been sometimes inappropriate).

However, in other instances changes were judged to have led to a negative effect on communication, including causing misunderstanding (9.7%), conveying a harder, more paternalistic tone (4.9%), and conveying more certainty than the doctor had intended (3.1%).

In some instances, relatives did not disclose the prognosis or treatment options. Patients often recognized such manipulation. At interview later, one patient, a 74-year-old Chinese woman, said: "I

Table 2. Oncologist Demographics and Practice Details

Demographic	No. of Oncologists (n = 10)
Age, years	
< 40	0
40-50	9
> 50	1
Sex	
Male	3
Female	7
Ethnicity	
Anglo/Australian	6
Other	4
	(2 Chinese, 1 Hungarian, 1 Iranian)
Years of experience in oncology	
<10	2
10-20	5
>20	3
Proportion of immigrant patients seen in practice, %	
<10	1
10-30	2
30-50	5
>50	2
No. using interpreters always or usually (multiple responses permitted)	
Professional interpreter face to face	7
Professional interpreter by phone	1
Family member interpreter	6

Table 3. Interpreters and Interpretation

Parameter	Consultations No.	%
Main interpreter		
Family with medical knowledge	4	8
Family without medical knowledge	16	33
Family (unknown medical knowledge)	1	2
Medical professional	2	4
Telephone interpreter	7	14
Face to face interpreter	19	39
Relation to patient, if main interpreter is family		
Daughter	9	43
Daughter-in-law	2	10
Son	5	24
Sister-in-law	2	10
Husband	2	10
Family unknown	1	5

Table 4. Patient and Carer Demographics				
	Patients (n = 32)		Carers (n = 58)	
Demographic	No.	%	No.	%
Age, years	65		53	
Range	55-75		42-55	
Years in Australia	20		20	
Range	13-35		13-30	
Language of patient				
Chinese	20	63	39	67
Arabic	5	16	9	16
Greek	7	22	10	17
English speaking ability*				
Poor	16	50	10	17
Average	13	41	10	17
Good	1	3	12	21
Unknown	2	6	26	45
Cancer type				
Lung	12	38	—	—
Breast	5	16	—	—
Other	15	47	—	—
Relationship to patient				
Spouse/partner			17	29
Child*			30	52
Sibling			5	9
Other			3	5
Unknown			3	5
Sex				
Male	16	50	22	38
Female	16	50	29	50
Missing/unknown	—		7	12
Relationship status				
Married/defacto	22	69	29	50
Single	9	28	5	9
Unknown	1	3	24	41
Highest education level				
Grade 12 or below	19	59	12	21
Vocational/trade	5	16	10	17
University	6	19	12	21
Unknown	2	6	24	41
Religion				
Christianity	14	44	13	22
Buddhism	5	16	6	10
Muslim	3	9	2	3
Other/none/unknown	10	31	37	64
Medical background				
Yes	3	9	2	3
No	31	91	35	57
Unknown	0		24	39
Family/friends present				
0	3	9	—	—
1	15	47	—	—
2 or more	14	44	—	—

NOTE. Medians and interquartile ranges are shown for continuous variables. Frequencies (%) are shown for categorical variables.
*For analysis purposes missing values were imputed as poor.

In another example, the patient (a 78-year-old Chinese man) reported that "from my personal point of view, it [chemotherapy] may not be worth all the suffering. My wife. . . and I are on the same side [no further treatment]. Those two [sons] are on the doctor's side [to try chemotherapy]. . . . "

Predictors of Nonequivalent Interpretations With Potentially Negative Outcomes

The only statistically significant predictor of potentially negative nonequivalent interpretations was the number of years the patient had been in Australia ($P = .03$), with decreasing likelihood of negative nonequivalent interpretations as the years in Australia increased (odds ratio = 0.82 for each additional 10 years). Surprisingly, professional interpreters had a higher proportion of negative changes than did family or friends (26% v 21%), but this was not statistically significant ($P = .2$). There were no significant differences between professional face-to-face versus phone interpreters.

Interpreter Talk When Not Interpreting

Interpreters sometimes talked within the consultation on their own behalf (16.5% of professional interpreter speech and 49.3% of family interpreter speech). Most commonly this was to inform or explain (30% of additional talk), indicate agreement to either patient or doctor (21%), or confirm the patient had understood (12%). The function of such speech was most commonly psychosocial (32%).

DISCUSSION

This study provides important new data on communication between oncologists, interpreters, and immigrants diagnosed with incurable cancer. In this sample of 32 patients requiring interpreters in 49 consultations, in only 53% was a professional interpreter present, with the rest relying on interpreting by a family member. This high rate of family involvement in interpretation is reported elsewhere in the literature. In a recent study, physicians treating breast cancer were surveyed regarding their use of interpreters in the past 12 months.[19] Forty-one percent reported using a trained medical interpreter, 21% a telephone language interpretation service, 76% bilingual staff untrained in interpretation, and 86% patients' friends or family members. Only one third reported good availability of trained medical interpreters which may explain their low rate of usage. We do not know why professional interpreters were (or were not) used in this study.

Professional medical interpreters are rigorously trained to provide sensitive interpretation of high fidelity, and have been shown to improve patient outcomes such as adherence to follow-up and reduced emergency department utilization and costs,[20] and clinician satisfaction with the quality of interpretation.[21] Nonprofessional interpreters have been reported to make significant errors in interpreting.[22] In our study, family interpreters had a significantly higher rate of nonequivalent interpretations than professionals, but these seemed mostly inconsequential. Potentially negative nonequivalent interpretations were made equally as often by family and professional interpreters, although qualitatively, our sense was that family members were more likely to deliberately hide diagnoses and prognoses. A number of experts in cross cultural communication have emphasized

don't know English…What can I do?. . . I am already old, I won't be able to learn…The doctor wanted me to repeat [treatment]. At that moment, I knew [my condition is worse]. Deep down, I felt rather upset. Indeed, if you tell me directly, I wouldn't be so bothered."

the importance of using professional interpreters.[23] We in principle agree with this stand, despite patients sometimes preferring family interpreters and system challenges in ensuring professional interpreter presence; however, our data does not provide strong support for this.

It is noteworthy that there was no difference in the equivalency of interpretations of professional in-person and telephone interpreters in this study. Previous results in the general practice setting comparing interpreter modalities have produced conflicting results. Napoles et al[21] compared clinician satisfaction with in-person versus video-conference interpreters and found no difference in the rated quality of interpretation, although in person interpreters were judged to be more culturally competent. Another study[24] found that remote simultaneous interpreter services provided more functionally equivalent interpretations and were preferred by patients and clinicians over in-person consecutive interpretation, although the interpreters preferred the latter. In focus groups, interpreters of cancer consultations emphasized that for bad news consultations particularly, face-to-face interpretation was superior, to ensure that emotion and support was appropriately conveyed.[25] Finally, in a large randomized controlled trial of remote telephone interpretation, in-person interpretation, and a bilingual doctor for 1,201 families in a pediatric emergency department, Crossman et al[26] found similar concordance of understanding of discharge diagnosis between groups, and no differences in satisfaction ratings, although there was a trend favoring telephone over in-person interpretation. Thus, the evidence suggests that telephone interpretation may be logistically simpler, cheaper, and as effective, but in some circumstances (eg, bad news consultations), less preferable than face-to-face interpretation.

About one third of interpretations in this study were judged to be nonequivalent, with potentially negative consequences. Clinicians and trialists are required by regulation in most countries to ensure informed consent to standard treatments and clinical trials, so this is a concern.

However, many nonequivalent interpretations were judged by coders to have no or a positive effect on communication in the consultation, emphasizing that change is not necessarily bad. Researchers have noted that interpreters are not neutral participants in medical encounters, but rather employ deliberative strategies to manage provider-patient interactions.[17,27] Hsieh[28] termed these attempts co-diagnostician behaviors, and identified five varieties: assuming the provider's communicative goals; editorializing information for medical emphases; initiating information-seeking behaviors; participating in diagnostic tasks; and volunteering medical information to the patients. We observed interpreters trying sometimes to reassure the patient, and sometimes clarifying or simplifying information. Of note, this is not dissimilar to the behavior of many doctors, who also rush to console patients and may even contradict themselves in the process.[29]

There is controversy over whether such behaviors in interpreters is positive or negative. Hsieh[17,28] believes they can be positive, but can also diminish the authority and control of the doctor, causing rifts between doctors and patients. She recommends training oncologists and interpreters to better negotiate how information will be conveyed during the consultation. A model where interpreters were integrated into the multidisciplinary team might be optimal, although hard to achieve in the current health system. Ways in which oncologists can work more effectively with interpreters have been identified in several

studies,[18,23,25] and include keeping to the schedule so that interpreters' time is spent in the consultation, using a professional interpreter, briefing the interpreter on the case beforehand and discussing potential challenges, speaking directly to the patient rather than to the interpreter, checking patient understanding and paraphrasing, providing access to written information in the patient's language, and debriefing with the interpreter after the consultation.

A recent review[22] found that interventions improved doctors' knowledge about and attitudes to interpreters and increased the likelihood of these services being used when needed. Similarly, training about cancer and cancer clinical trials for interpreters increased knowledge.[30] To our knowledge, no one has investigated training doctors and interpreters together to negotiate their roles, language, and cultural approaches before the consultation. This may be one way to enhance communication during cancer consultations and improve outcomes for migrants with cancer.

The study sample was relatively small. Recruitment was a challenge in this vulnerable group. Therefore, generalizability to all exchanges between oncologists, interpreters, and patients is not assured. However, we recruited patients from nine hospitals and from a variety of backgrounds, increasing the likelihood of a representative sample. Because of small numbers we were unable to analyze language groups separately. While we did interview patients and carers after the consultation, we were not able to speak to interpreters, and it would have been of interest to obtain their perspective.

Strengths of the study included the audiotaping of two consultations, translation of all material, and the detailed coding. This was further supported by the interviews with patients and carers after the second consultation.

This study revealed a high level of nonequivalent interpretations during cancer consultations with patients newly diagnosed with incurable cancer. Most nonequivalent interpretations were seemingly inconsequential or positive, but a minority had the potential to cause misunderstanding or distress, and to disrupt the doctor-patient relationship. No differences were observed in the equivalency of professional face-to-face versus telephone interpreters, supporting the use of the latter if appropriate and convenient. Oncologists and interpreters alike could benefit from training in cultural competence, to negotiate their roles and use of culturally appropriate language, and educate interpreters in cancer specific issues.

REFERENCES

1. Australian Bureau of Statistics: Australian social trends (4102.0). Canberra, Australia, Australian Government Publishing Service, 2006

2. Du XL, Meyer TE, Franzini L: Meta-analysis of racial disparities in survival in association with socioeconomic status among men and women with colon cancer. Cancer 109:2161-2170, 2007

3. Chu KC, Miller BA, Springfield SA: Measures of racial/ethnic health disparities in cancer mortality rates and the influence of socioeconomic status. J Natl Med Assoc 99:1092-1100, 2007

4. Krupski TL, Sonn G, Kwan L, et al: Ethnic variation in health-related quality of life among low-income men with prostate cancer. Ethn Dis 15:461-468, 2005

5. Gotay CC, Holup JL, Pagano I: Ethnic differences in quality of life among early breast and prostate cancer survivors. Psycho-Oncology 11:103-113, 2002

6. Christensen S, Zachariae R, Jensen AB, et al: Prevalence and risk of depressive symptoms 3-4 months post-surgery in a nationwide cohort study of Danish women treated for early stage breast-cancer. Breast Cancer Res Trt 113:339-355, 2009

7. Thomas BC, Carlson LE, Bultz BD: Cancer patient ethnicity and associations with emotional distress–the 6th vital sign: A new look at defining patient ethnicity in a multicultural context. Immigrant Minority Health 11:237-248, 2009

8. Moore R, Butow P: Culture and oncology, in Speigel D (ed): Cancer, Communication and Culture. New York, NY, Kluwer Academic/Plenum Publishers, 2005, pp 15-54

9. Butow P, Sze M, Dugal-Beri P, et al: From inside the bubble: Migrants' perceptions of communication with the cancer team. Support Care Cancer 19:281-290, 2010

10. Goldstein D, Thewes B, Butow P: Communicating in a multicultural society II: Greek community attitudes towards cancer in Australia. Intern Med J 32:289-296, 2002

11. Ngo-Metzger Q, Massagli MP, Clarridge BR, et al: Linguistic and cultural barriers to care: Perspectives of Chinese and Vietnamese immigrants. J Gen Intern Med 18:44-52, 2003

12. Dysart-Gale D: Clinicians and medical interpreters: Negotiating culturally appropriate care for patients with limited English ability. Fam Community Health 30:237-246, 2007

13. Flores G: The impact of medical interpreter services on the quality of health care: A systematic review. Med Care Res Rev 62:255-299, 2005

14. Kaufert JM, Koolage WW: Role conflict among 'culture brokers': The experience of Native Canadian medical interpreters. Soc Sci Med 18:283-286, 1984

15. International Medical Interpreters Association: Medical Interpreting Standards of Practice. Boston, MA, International Medical Interpreters Association and Education Development Center, 2007

16. Australian Institute of Interpreters and Translators Incorporated: AUSIT Code of Ethics. 1996. http://server.dream-fusion.net/ausit2/pics/ethics.pdf

17. Hsieh E: Conflicts in how interpreters manage their roles in provider–patient interactions. Social Science Medicine 62:721-730, 2006

18. Abbe M, Simon C, Angiolillo A, et al: A survey of language barriers from the perspective of paediatric oncologists, interpreters, and parents. Pediatric Blood Cancer 47:819-824, 2006

19. Rose DE, Tisnado DM, Malin JL, et al: Use of interpreters by physicians treating limited English proficient women with breast cancer: Results form the provider survey of the Lost Angeles

women's health study. Health Serv Res 45:1 2010 doi: 10.1111/j.1475-6773.2009.01057.x

20. Bernstein J, Bernstein E, Dave A, et al: Trained medical interpreters in the emergency department: Effects on services, subsequent charges and follow-up. J Immigrant Health 4:171-176, 2002

21. Napoles AM, Santoyo-Olsson J, Karliner LS, et al: Clinician ratings of interpreter mediated visits in underserved primary care settings with ad hoc, in-person professional and video-conferencing modes. J Health Care for the Poor and Underserved 21:301-317, 2010

22. Jacobs E, Chen AHJM, Karliner LS, et al: The need for more research on language in health care: A proposed research agenda. The Milbank Quarterly 84:111-133, 2006

23. Schapira L, Vargas E, Hidalgo R, et al: Lost in translation: Integrating medical interpreters into the multidisciplinary team. Oncologist 13:586-592, 2008

24. Hornberger JC, Gibson CD, Wood W, et al: Eliminating language barriers for non-English speaking patients. Med Care 34:845-856, 1996

25. Butow PN, Lobb EA, Jefford M, et al: A bridge between cultures: Interpreters' perspectives of consultations with migrant oncology patients. Support Care Cancer doi: 10.1007/s00520-010-1046-z [epub ahead of print on November 26, 2010]

26. Crossman KL, Wiener E, Roosevelt G, et al: Interpreters: Telephonic, in-person interpretation and bilingual providers. Paediatrics 125:e61-8, 2010

27. Angelelli CV: Medical Interpreting and Cross-Cultural Communication. Cambridge, United Kingdom, Cambridge University Press, 2004

28. Hsieh E: Interpreters as co-diagnosticians: Overlapping roles and services between providers and interpreters. Soc Sci Med 64:924-937, 2007

29. Schapira L, Butow P, Brown R, et al: Pessimism is no poison. J Clin Oncol 28:705-707, 2010

30. Donelan K, Hobrecker K, Schapira L, et al: Medical interpreter knowledge of cancer and cancer clinical trials. Cancer 115:3283-3292, 2009