
Available from: http://dx.doi.org/10.1002/pon.4380

This is the peer reviewed version of the following article: Tzelepis, Flora; Hanna, Joseph H.; Paul, Christine L.; Boyes, Allison W.; Carey, Mariko L. (2017), “Quality of patient-centred care: medical oncology patients' perceptions and characteristics associated with quality of care”, Psycho-Oncology, which has been published in final form at http://dx.doi.org/10.1002/pon.4380. This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Self-Archiving.

Accessed from: http://hdl.handle.net/1959.13/1353174
Quality of patient-centred care: medical oncology patients’ perceptions and characteristics associated with quality of care

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KEY POINTS

- Comprehensive patient-centred cancer care measures are needed to inform quality improvement efforts.
- We examined medical oncology patients’ perceptions using the Quality of Patient-Centered Cancer Care measure.
- Respectful communication had the highest quality care score while co-ordinated and integrated care had the lowest.
- Treatment centre attended was associated with: treatment decision-making; respectful communication; patient preferences and values; and cancer information.
- Measuring medical oncology patients’ experiences is important for prioritising areas for improvement.

**Keywords:** cancer, oncology, patient-centred care, quality assessment
BACKGROUND

Measuring the quality of patient-centred care in medical oncology units is essential to identifying areas that require improvements.\(^1\) In UK\(^2\) and Turkish\(^3\) studies, medical oncology patients’ rated interpersonal and technical aspects of nursing care highly but reported improvements were needed to patient information. Evaluation in diverse treatment centres is valuable because the barriers and areas needing improvement may also be relevant to similar centres nationally or internationally. Furthermore, identifying characteristics associated with patients’ perceived care is important for prioritising which patient subgroups may benefit from improved access to services or enhanced support. Evidence has reported that medical oncology patients who were older,\(^4\) male,\(^2,4\) more educated,\(^4\) and had lower anxiety\(^2\) perceived receiving higher quality care.

A systematic review found that no patient-centred cancer care measure met all criteria for adequate validity and reliability or addressed all patient-centred care dimensions.\(^5\) The Quality of Patient-Centered Cancer Care (QPCCC) measure, developed to address this limitation,\(^6\) has acceptable face validity, content validity, construct validity and internal consistency with haematological cancer survivors.\(^6\) However, to investigate the transferability of this validated measure its factor structure and internal consistency should be tested with other cancer populations.

This study examined in medical oncology patients:

1) the QPCCC measure’s factor structure and internal consistency;

2) perceptions of which aspects of cancer care were commonly delivered or required improved delivery; and

3) patient and treatment centre characteristics associated with perceived quality of patient-centred care.

METHODS
Sample: Three medical oncology treatment centres from Tasmania (centre 1), New South Wales (centre 2), and Victoria (centre 3), Australia that treated ≥400 new cancer patients annually participated. Patient eligibility criteria were: confirmed cancer diagnosis; attending outpatient medical oncology unit for second/subsequent appointment; aged ≥18 years; physically and mentally capable; and could complete English survey.

Procedure: Between March 2013-June 2014, centre staff identified potentially eligible patients from the clinic list, and a research assistant approached them in the waiting room. Eligible patients who signed a consent form were given a questionnaire assessing demographics, cancer history and psychological distress. Patients completed the questionnaire in the waiting room, unless they preferred to return it later using a reply-paid envelope. After three weeks, another survey was mailed to non-responders. A month after recruitment, patients were mailed a second questionnaire containing the QPCCC measure. Non-responders received reminder surveys after three and six weeks.

The University of Newcastle Human Research Ethics Committee and committees for each treatment centre granted ethical approval.

Measures

Quality of Patient-Centered Cancer Care: The 48-item QPCCC measure examined patients’ perceived care across ten factor analytically-derived subscales: timely care; respectful communication; cancer information; treatment decision-making; treatment delivery; patient preferences and values; equitable care; coordinated and integrated care; emotional support; follow-up care.6 Response options were Strongly agree, Agree, Disagree, Strongly disagree, and Not applicable to me. The QPCCC measure’s development is described elsewhere.6
**Other measures:** The following characteristics were measured because they have been associated with perceived quality of care in our previous work\textsuperscript{7} and/or existing literature\textsuperscript{2,4}: age, sex, rurality, marital status, education, employment, private health insurance, cancer type, time since diagnosis, anxiety and depression. The Hospital Anxiety and Depression Scale measured depression and anxiety and subscale scores of $\geq8$ indicated depression or anxiety respectively.

**Statistical analysis**

Confirmatory factor analysis examined the factor structure and factor loadings $\geq0.40$ were acceptable.\textsuperscript{8} Five respondents per item is the minimum for factor analysis so because the QPCCC subscales contain 46 items, 230 patients were needed. Cronbach’s alphas examined internal consistency and were acceptable if between 0.70-0.95.\textsuperscript{9}

Percentages and 95% confidence intervals indicated areas of cancer care commonly delivered or not delivered. Means and standard deviations were calculated for QPCCC subscales (1=lowest quality to 4=highest quality). To examine characteristics associated with each QPCCC subscale score, multiple linear regression models were used. Estimates with robust standard errors, and adjusted Wald p-values were calculated.

**RESULTS**

Of 1,723 potential participants approached, 934 were ineligible. Of 789 eligible patients, 601 (76.2%) consented, 498 (63.1%) returned the first questionnaire and 397 (50.3%) returned the questionnaire containing the QPCCC measure. Mean participant age was 61 years (SD=12), most were female (60.5%), married/living with partner (68.2%), urban residents (58.3%), not employed (73.5%) and had private health insurance (52.6%), while 20.7% were university-educated. Patients were diagnosed with: breast (32.5%), colorectal (21.6%), lung (8.1%), haematological (6.8%),
prostate (3.9%) or other (27.3%) cancers and 32.0% were diagnosed in the last 6 months. Patients attended: centre 1 (37.8%); centre 2 (32.0%); or centre 3 (30.2%).

**Factor structure**

Nine subscales had all items with factor loadings >0.40. However, five items in the *co-ordinated and integrated care* subscale did not: Q35 (factor loading=0.32); Q36 (factor loading=0.30); Q37 (factor loading=0.17); Q38 (factor loading=0.30); and Q41 (factor loading=0.38). Given these items addressed issues not covered elsewhere and others have classified factor loadings >0.30 as acceptable all items were retained in the *co-ordinated and integrated care* subscale. The root mean square error of approximation estimate was 0.065.

**Internal consistency**

Cronbach’s alphas were: treatment delivery (α=0.91); treatment decision-making (α=0.91); coordinated and integrated care (α=0.74); emotional support (α=0.81); timely care (α=0.94); follow-up care (α=0.92); respectful communication (α=0.94); patient preferences and values (α=0.87); cancer information (α=0.85); equitable care (α=0.78) and total scale (α=0.94).

**Subscale scores**

Subscale scores were: respectful communication [mean(SD)=3.6(0.6)]; treatment delivery [mean(SD)=3.4(0.5)]; timely care [mean(SD)=3.2(0.9)]; cancer information [mean(SD)=3.2(0.7)]; treatment decision-making [mean(SD)=3.1(0.6)]; equitable care [mean(SD)=3.1(0.7)]; follow-up care [mean(SD)=3.0(0.6)]; patient preferences and values [mean(SD)=2.9(0.8)]; emotional support [mean(SD)=2.8(0.5)] and co-ordinated and integrated care [mean(SD)=2.5(0.4)].

**Cancer care commonly delivered or not delivered**
The five areas of care most commonly delivered or not delivered are reported in Tables 1 and 2 respectively.

**Characteristics associated with perceived quality of care**

No characteristics were associated with *treatment delivery, emotional support or follow-up care*. Rural residence (p=0.02) and attending centres 2 (p=0.01) and 3 (p=0.002) compared to 1 were associated with higher perceived quality of *treatment decision-making*. Colorectal cancer patients (p=0.004) perceived lower *coordinated and integrated care* than haematological cancer patients. Being male (p=0.03) or having breast cancer (p=0.01), compared to haematological cancer were associated with lower perceived *timely care*. Being depressed (p=0.002) and attending centre 2 (p=0.004) compared to 1 was associated with lower perceived *respectful communication*. Private health insurance (p=0.005) and attending centre 3 (p<0.001) compared to 1 were associated with lower perceived quality regarding *patient preferences and values*. Attending centre 3 (p=0.045) compared to 1, was associated with higher perceived quality of *cancer information*. Private health insurance (p=0.04) was associated with perceived lower *equitable care*. Prostate cancer patients (p=0.02) perceived higher *equitable care* than haematological cancer patients.

**CONCLUSIONS**

The QPCCC measure had reasonable factor structure and acceptable internal consistency with medical oncology patients. Medical oncology patients most commonly perceived that *respectful communication* was delivered. The four items perceived most frequently by medical oncology patients as delivered were identical to those previously reported by haematological cancer survivors. Patients most commonly perceived that doctors had not explained they could get a second medical opinion if they wished. Clinicians should communicate areas of uncertainty in treatment options and ensure patients are aware they can seek a second opinion. Furthermore, treatment centre attended was associated with the most QPCCC subscales. Additional
communication skills training or reminders/checklists in healthcare systems may reduce centre variation and facilitate consistent, high-quality patient-centred care.

Study limitations included that our sample’s representativeness is unknown because non-responders’ characteristics were not collected and we are unaware of data describing the characteristics of all Australian medical oncology patients. The generalisability of findings to all Australian medical oncology treatment centres may be limited. Additionally, >50% were diagnosed with breast or colorectal cancer, so results may be less generalisable to less common cancers.

Assessment of patient-centred care is crucial to understanding patients’ experiences and prioritising areas for improvement. Longitudinal studies are needed to determine whether patient experiences change over time and which patient characteristics predict perceived quality of patient-centred cancer care.

ACKNOWLEDGEMENTS

This research was supported by a NHMRC Project Grant (ID1010536), a Cancer Council NSW Strategic Research Partnership Grant (CSR11-02) to the Newcastle Cancer Control Collaborative, and infrastructure funding from the Hunter Medical Research Institute. FT was supported by a Leukaemia Foundation of Australia/Cure Cancer Australia Post-Doctoral Research Fellowship. CLP is supported by an NHMRC Career Development Fellowship (APP1061335). MLC is supported by a NHMRC TRIP Fellowship. AWB is supported by NHMRC (APP1073317) and Cancer Institute NSW (13/ECF/1-37) Early Career Fellowships. Thanks to Rochelle Smits, Alison Zucca, Heidi Turon and Hannah Small for research support; and Sandra Dowley for data management.
<table>
<thead>
<tr>
<th>Subscale</th>
<th>n</th>
<th>% (95% CIs)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital staff showed respect for me</td>
<td>377</td>
<td>96.4 (94.6-98.3)</td>
<td>Respectful communication</td>
</tr>
<tr>
<td>Hospital staff made sure I received the correct treatment</td>
<td>377</td>
<td>96.4 (94.6-98.3)</td>
<td>Treatment delivery</td>
</tr>
<tr>
<td>Hospital staff talked to me in a way I could understand</td>
<td>371</td>
<td>95.1 (93.0-97.3)</td>
<td>Respectful communication</td>
</tr>
<tr>
<td>Hospital staff showed respect for my family/friends</td>
<td>362</td>
<td>92.6 (90.0-95.2)</td>
<td>Respectful communication</td>
</tr>
<tr>
<td>During treatment hospital staff made sure I did not receive unnecessary tests or treatments</td>
<td>359</td>
<td>91.8 (89.1-94.5)</td>
<td>Treatment delivery</td>
</tr>
</tbody>
</table>
Table 2: Care most commonly not delivered

<table>
<thead>
<tr>
<th>Subscale</th>
<th>n</th>
<th>% (95% CIs)</th>
<th>Strongly disagree/disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors at hospital explained I could get a second medical opinion if I wanted to</td>
<td>148</td>
<td>38.9 (34.0-43.9)</td>
<td>Treatment decision-making</td>
</tr>
<tr>
<td>Hospital staff helped me find other cancer patients I could talk to about their cancer experiences</td>
<td>136</td>
<td>36.1 (31.2-40.9)</td>
<td>Coordinated and integrated care</td>
</tr>
<tr>
<td>Hospital staff helped my family/friends find others in a similar situation to talk to</td>
<td>125</td>
<td>32.7 (28.0-37.4)</td>
<td>Coordinated and integrated care</td>
</tr>
<tr>
<td>During my treatment, I was able to choose which doctor I saw for each appointment</td>
<td>116</td>
<td>30.1 (25.5-34.6)</td>
<td>Patient preferences and values</td>
</tr>
<tr>
<td>Doctors at hospital explained how each treatment option might affect my length of life</td>
<td>110</td>
<td>28.5 (24.0-33.0)</td>
<td>Treatment decision-making</td>
</tr>
</tbody>
</table>
REFERENCES

10. Costello AB, Osborne JW. Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. Practical Assessment, Research and Evaluation 2005;10(7).