Comparison of Baseline Quality of Life between Minority and Non-Minority Patients Participating in Oncology Clinical Trials

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Mayo QOL team
Alliance Disparities, HOC Committees, CCP
Being in the minority brings unique challenges
...and unique benefits
Do differences result in QOL deficits?
...or are we all getting along doing equally as well in terms of QOL?
Background

- Minority patients (MP) suffer deficits in access to care and participation in clinical trials.
- Study design exclusion and inclusion criteria rendered the majority of minority population ineligible. *(Adams-Campbell JCO 2004)*
- Consistent measurement approaches for recruitment are needed. *(Bolen, Cancer 2006)*
- Establishing community partnerships and contacting potential participants are vital and achievable. *(Paskett, Contemporary Clinical Trials 2008)*
Enhancing minority participation in clinical trials (EMPaCT).

Durant, Cancer 2014

1) racial and ethnic minorities are influenced by varying degrees of skepticism related to trial participation,

2) potential minority participants often face multilevel barriers that preclude them from being offered an opportunity to participate in a clinical trial,

3) facilitators at both the institutional and participant level potentially encourage minority recruitment, and

4) variation between internal and external trial referral procedures may limit clinical trial opportunities for racial and ethnic minorities.
One way to increase minority accrual: separate data streams

- Smoking cessation studies. Left trial open until sufficient minority accrual was accomplished (Croghan MCP, 2007)

- Hot flash studies. Separate substudy accrual streams for minority and majority patients. (Sloan, JCO, 2001)
QOL and minorities

- Hispanic cancer patients in the USA, report significantly worse distress, depression, social HRQoL, and overall HRQoL (Luckett, Lancet Oncology 2011)

- Limited comprehension of prostate cancer terms and low literacy create barriers to measuring QOL in African American men (Kilbridge, JCO 2009)

- Latina breast cancer survivors report greater psychosocial concerns over as compared to whites. (Napoles-Springer, JIH 2008; Burgess, BMJ 2005)
QOL and minorities: translations
(Advances in Survey Methodology, Lepkowski, 2013, pp. 234-235)

- There is a self-serving cottage industry in producing “validated” translations of QOL assessments.
- There are roughly 6,500 spoken languages in the world today. You can’t translate every tool into every language.
- Extensive literature points out the POTENTIAL bias of cultural impact on questionnaire answers, few indicate large, clear effect.
- Response tendencies reflect association with both stable cultural traits, as well as individual differences.
- Cultural bias can be a function of language, gender, education, experience…
- Language is not static or consistent: dialects. French Canadian versus France French

There is almost NO evidence of translation-treatment interactions
QOL and minorities: translations pragmatic solutions

- If a substantial proportion of your patient population speaks a particular language, you can minimize the impact of language difficulties through a formal, expensive translation process.

- Allowing for informal oral translation removes barriers to participation and establishes trust in the community.

- Record when an oral translation is involved, include an indicator covariate into the analysis to estimate treatment-translation bias.

- “Perfection is the enemy of progress.”
QOL and everyone: why are the questionnaires so long?

- Need to know
- Nice to know
- People lie?
- Psychometrics

Every question should have a reason for being there (Baseline)
QOL and everyone: why are they asking the same thing repeatedly?

- Cognitive test
- Consistency
- Sensitive information
- Security for the researcher

Tell the patient up front why some questions are repeated (R01)
Motivation

- Some isolated studies look at QOL of minority patients indirectly.
- No large scale investigation.
- We hence undertook a patient-level pooled analysis to explore whether these deficits translate into quality of life (QOL) differences between minority patients and non-minority patients on clinical trials.
47 Studies included in the Meta Analysis

- Studies were conducted either at the Mayo Clinic Cancer Center or in the North Central Cancer Treatment Group
- 6513 total patients
- 531 (8%) minorities
- Used only the baseline QOL
- QOL Scores were transformed into 0-100 scales with 0=Low QOL and 100=Best QOL
Studies Included

- 12 GI cancer treatment studies
- 14 cancer control studies
- 6 lung cancer treatment studies
- 5 QOL assessment studies
- 10 other studies (various tx trials)
# Study Assessment Tools

<table>
<thead>
<tr>
<th>QOL Assessment</th>
<th>Questions/Subscales</th>
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<tbody>
<tr>
<td>Uniscale</td>
<td>Overall QOL</td>
</tr>
<tr>
<td>Linear Analogue Assessment (LASA)</td>
<td>Overall QOL, Physical WB, Emotional WB, Spiritual WB, Mental/Intellectual WB</td>
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<tr>
<td>Symptom Distress Scale (SDS)</td>
<td>Nausea Frequency, Nausea Severity, Appetite, Insomnia, Pain Frequency, Pain Severity, Fatigue, Bowel, Concentration, Appearance, Breathing, Outlook, and Cough</td>
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<tr>
<td>Profile of Mood States (POMS)</td>
<td>Tension-Anxiety, Depression-Dejection, Anger-Hostility, Vigor-Activity, Fatigue-Inertia, Confusion-Bewilderment</td>
</tr>
</tbody>
</table>
Overall Patient Characteristics (N=6513)

- **Race**
  - White: 5982 (92%)
  - Black/African American: 327 (5%)
  - Hispanic: 100 (2%)
  - Asian: 47 (1%)
  - American Indian/Alaskan Native: 31 (1%)
  - Native Hawaiian: 7 (0.1%)
  - Other: 19 (0.3%)

- **Age (Median, Range)**: (62, 17-95)

- **% Female**: 46
## Overall Patient Characteristics (N=6513)

### Performance Score

<table>
<thead>
<tr>
<th>Score</th>
<th>Count</th>
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<td>6%</td>
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### Major Tumor Site

<table>
<thead>
<tr>
<th>Site</th>
<th>Count</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>GI</td>
<td>3072</td>
<td>47%</td>
</tr>
<tr>
<td>Lung</td>
<td>1040</td>
<td>16%</td>
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<tr>
<td>Breast</td>
<td>543</td>
<td>8%</td>
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<tr>
<td>GU</td>
<td>262</td>
<td>4%</td>
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<tr>
<td>Neuro</td>
<td>247</td>
<td>4%</td>
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<tr>
<td>Multiple</td>
<td>35</td>
<td>1%</td>
</tr>
<tr>
<td>Other</td>
<td>813</td>
<td>13%</td>
</tr>
<tr>
<td>Unknown</td>
<td>501</td>
<td>8%</td>
</tr>
</tbody>
</table>
Overall QOL Scores

Minorities reported worse overall FACT-G scores (8 points)
Overall QOL Assessment

<table>
<thead>
<tr>
<th>Mean Score</th>
<th>SDS</th>
<th>LASA</th>
<th>POMS</th>
<th>Uniscale</th>
<th>FACT-G</th>
</tr>
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<tbody>
<tr>
<td>N</td>
<td>3377</td>
<td>778</td>
<td>540</td>
<td>3704</td>
<td>1438</td>
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<tr>
<td>p-value</td>
<td>0.05</td>
<td>0.92</td>
<td>0.88</td>
<td>0.21</td>
<td>&lt; 0.001</td>
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</table>

*Minority*, *Non-Minority*
QOL Subscales

There were no significant differences by race on LASA or POMS subscales
LASA Questions

Mean Score

- Spiritual WB: p = 0.88
- Mental WB: p = 0.53
- Emotional WB: p = 0.31
- Physical WB: p = 0.91

Minority
Non-Minority
POMS Subscales

- Depression/Dejection: p = 0.41
- Anger/Hostility: p = 0.31
- Confusion/Bewilderment: p = 0.93
- Tension/Anxiety: p = 0.95
- Fatigue/Inertia: p = 0.98
- Vigor/Activity: p = 0.57

Legend:
- Minority
- Non-Minority
Minorities reported slightly better scores on most SDS questions (<6 points), likely due to statistical power overwhelming clinical significance.
SDS Individual Questions

- Breath: p = 0.04
- Concentration: p < 0.001
- Cough: p = 0.04
- Nausea Severity: p = 0.02
- Appetite: p = 0.03
- Fatigue: p < 0.001
- Outlook: p = 0.03

Legend:
- Minority
- Non-Minority
Minorities reported worse FACT-G subscale scores, especially functional QOL (10 points)
FACT-G Subscales

Mean Score

- Physical WB: p = 0.04
- Social/Family WB: p < 0.001
- Functional WB: p < 0.001
- Emotional WB: p = 0.8928

Minority
Non-Minority
# Minority QOL Differences by Site

<table>
<thead>
<tr>
<th>Minorities Worse</th>
<th>Site</th>
<th>Minorities Better</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social/Family WB</td>
<td>GI</td>
<td>Fatigue</td>
</tr>
<tr>
<td>Functional WB</td>
<td></td>
<td>Concentration</td>
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<tr>
<td>FACT-G Total Score</td>
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<td>Outlook</td>
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<tr>
<td>Nausea</td>
<td>Lung</td>
<td>Cough</td>
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<tr>
<td>Insomnia</td>
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<tr>
<td>Functional WB</td>
<td>Breast</td>
<td>- -</td>
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<tr>
<td>FACT-G Total Score</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional WB</td>
<td>Neuro</td>
<td>- -</td>
</tr>
</tbody>
</table>
Overall, there was no significant survival difference by race
Overall Survival Time

Log-Rank P-value = 0.14

Survival Time (Years)

Percent Alive

Minority

Non-Minority
So what have we found?

HOT HOT HOT
Discussion

- Minority patients chosen had access to clinical trials and may not be representative of minorities in the general population.
- Minority patients did not report large QOL deficits at baseline relative to non-minority patients.
- Minority patients did not show a difference in overall survival.
Conclusions

- Minority patients did indicate small deficits in physical, social, and emotional subscales, but less than what one might expect.

- Minority patients experienced large tumor-specific deficits for a few QOL domains that might bear further attention.
Are the differences real or an illusion?
Some open questions

- Is meeting minority accrual targets addressing the challenges faced by minority populations?

- Are analyses on minority patients from clinical trials under-estimating the problems?

- If differences are observed, are they REALLY big?
Future Research

- Plan focus groups to drill down to find out what underlies the differences observed?

- Plan **specific** intervention studies to reduce the deficits in QOL observed, (fatigue/physical functioning)?
Me and you is friends
you smile, I smile...
you hurt, I hurt...
you cry, I cry...
You jump off Bridge
I gonna miss your E-Mails.
Backup slides
12 GI Studies

- 954651 – 776C85/5FU Adv Colon/Rectum
- 959257 – Prostate Pin Flutamide
- MC0145 – Esophageal ACA Registry
- N0044 – Esophageal/Chemo + RT
- N0048 – Colorectal/OXAL/CPT-11
- N0149 – Esophageal CA OXAL CAPCIT
- N014C – Pancreatic CA PS341 GEMZAR
- N0242 – ACA Stom GE Junc TATER CAPCIT
- N9741 – Advanced Colon CPT11/5FU/CF
- N9841 – Adv Colorectal CPT-11/OXPLAT
- N9942 – Pancreas CA Gemcitabine
- N9946 – Colorectal ACA OXAL 5-FU CF
11 Cancer Control Studies

- 959255 – Anorexia/Cachexia Megace/Marin
- 969256 – Pelvic RT Proctitis Glutamine
- 971151 – Shark Cartilage
- 979251 – LMWHH Advanced CA
- 979253 – RHUEPO/Anemia Pts with Cancer
- 989251 – Cervical Imiquimod Chemopreven
- MC99C2 – DB Oral Glut Myalgia/Arthralgi
- N00C9 – Cognitive Dys Ginkgo Biloba
- N01C4 – Head & Neck/Zinc Sulfate
- N01C9 – NSCLC Tater Infliximab
- N02C2 – Anemic CA Pts RHEUPO
6 Lung Studies

- 952053 – Trt plus VP16, CDDP, SCLC
- 962451 – Adv NSCLC LU103793
- 972451 – NSCLC Cai Stage IIIB/IV
- 982452 – NSCLC Tater + Gemzar Phase II
- N0022 – NSCLC/Oral Vinorelbine
- N9923 – Lung CDDP/VP16/Ethyol/RT
5 QOL Studies

- 959204 – QOL in Hospice Pts & Caregiver
- MC0115 – QOL Phase I Trials
- MC0192 – QOL/Ovarian Cancer
- MC997C – QOL Struct Interv
- MC9991 – Social Support Pilot CA Pts
3 Hot Flash Studies

- MC00C6 – Hot Flashes/Citaloprim
- MC01C1 – Pilot Paxil/Hot Flashes
- N99C7 – Hot Flashes - MPA
10 Other Studies

- 979202 – Monoclonal Gammopathy Deh
- 983252 – TAXOL/CBDCA/RHUMAB HER2-Breast
- 987251 – Astrocytoma-BCNU, CISPLAT, ETOP
- 987252 – Glioblastoma, BCNU, CDDP, VP16
- 987403 – IA CDDP Plus RT H&N
- N0021 – Mesothelioma/Gemzar Epirubicin
- N0031 – Breast Cancer/Topical Ceramide
- N0074 – Glioblastoma/ZD1839
- N0087 – NHL/Interleukin-12/Rituximab
- N0272 – Oligodendroglioma STI571
### Patient Characteristics by Assessment

<table>
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<tr>
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<th>Uniscale (N=4201)</th>
<th>LASA (N=946)</th>
<th>SDS (N=3802)</th>
<th>POMS (N=662)</th>
<th>FACT-G (N=1805)</th>
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<tbody>
<tr>
<td>% Minority</td>
<td>9</td>
<td>4</td>
<td>10</td>
<td>3</td>
<td>7</td>
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<tr>
<td>% Female</td>
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<td>37</td>
<td>44</td>
<td>50</td>
<td>48</td>
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<td>Age (median)</td>
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<td>63</td>
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<td>Major Tumor Site</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>GI</td>
<td>63%</td>
<td>20%</td>
<td>72%</td>
<td>6%</td>
<td>19%</td>
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<tr>
<td>Lung</td>
<td>16%</td>
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<td>8%</td>
<td>4%</td>
<td>30%</td>
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<tr>
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<td>10%</td>
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<tr>
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<td>2%</td>
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<td>0%</td>
<td>25%</td>
<td>3%</td>
<td>34%</td>
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<td>0%</td>
<td>0%</td>
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