

TO: The Workgroup on the MHSIP Consumer Oriented Report Card  
Consumer Survey

SUBJ: Consumer Survey Analyses

Using data from the 16 state project, obtained from Judy Hall, I have analyzed the MHSIP Consumer Survey in order to provide information to inform decisions regarding:

- ❑ The choice of items for scales;
- ❑ The number of items for scales;
- ❑ Recommendations regarding “short” versions;
- ❑ Negative versus positive wording;
- ❑ Recommendations regarding wording to make items applicable to more people.

Table 1 (MHSIP Table 1.xls --all tables are Excel-97 files) displays the different versions currently in use within the 16 state project (Thank you Judy!). Three states, Colorado, DC, and Rhode Island, use the full 40 item survey. Colorado and Rhode Island use positively worded items (except for q29 in Colorado) while DC uses the original survey with 7 negatively worded items.

For the purposes of this analysis I constructed two study samples.

- ❑ The first, to evaluate the positively worded survey, is drawn from Colorado and Rhode Island.
- ❑ The second, to evaluate the original survey, is drawn from DC and 97-98 Colorado data.

I used the following methodology:

- 1) Individuals with more than one-third missing data in any one domain (satisfaction, access, appropriateness or outcome) were deleted from the analyses.
- 2) For the remainder, missing data was estimated as the mean of all the other items for the domain.
- 3) For the Colorado/Rhode Island Data, two random samples of 700 surveys each were selected. Within each random sample, 350 surveys were selected from Colorado, and 350 from Rhode Island.
- 4) I conducted preliminary analyses using one random sample of 700 surveys; then checked the procedures using the second random sample.
- 5) Since only minimal differences were found between samples, final analyses were conducted on the combination of these samples (700 surveys from Colorado and 700 surveys from Rhode Island).

- 6) I conducted factor analyses, alpha reliability analyses, and other item analytic procedures for the 40-item survey and for each of the various proposed short versions of the survey.
- 7) For the DC/Colorado data, a single sample was constructed consisting of 255 surveys from DC and a random sample of 300 surveys from Colorado.

Table 2 lists the items and alpha reliabilities for full survey, and proposed short versions (NASMHPD 22-item survey; 21-item survey sent to NCQA; 25-item survey, labeled CO25 that I proposed last year; and Rhode Island's current 29-item proposal).

Table 2 also describes:

- Two new short versions arising from the current analyses:
  - OPT21, that includes 21 items, optimized for uni-factorialness, communality, factor pattern loading, and minimal missing data;
  - OPT12, that includes a 12 item subset of the OPT21 items representing the "Core of the Core".
- Columns that identify item level problems;

Table 3 & 4 display the results of factor analyses of the 40-items and OPT21 items respectively.

Table 5 & 6 display EQS, structural equation models for the 40-items and OPT21 items.

Tables 7 & 8 display factor and EQS analyses for the DC/Colorado sample including the 7 negatively worded items.

Finally there are slides (MHSIP Slides.ppt in power point) describing the EQS path relationships among the domains

## Observations and Recommendations:

- ✓ The patterns of missing data in Rhode Island and Colorado are virtually identical (see Table 2). Questions resulting in relatively high proportions of missing data are not recommended for the construction of scales (e.g., Q33, Q20, Q29, Q35).
- ✓ Q29 written as a positive item or as a negative item has low communality, and is not recommended for inclusion in scales.
- ✓ Questions that are substantially multifactorial, particularly with general satisfaction (e.g., Q9, Q14, Q24, Q25), are not recommended for inclusion in scales.
- ✓ Alpha reliabilities over .9 are indicative of excessive length and/or overly redundant questions; therefore, it appears that in most instances four to six questions per scale would be optimal.
- ✓ The exploratory factor analyses are striking in their factor clarity. Except for the three multi-factorial items already mentioned, there are no cross loadings that are greater than or equal to .2. Reducing the variables to 21 improves the solution, and when modeled results in a very high model fit index of .977 (see Table 6).
- ✓ The path model is virtually identical to the models I constructed from last year's data (See Slide 2).
- ✓ The original MHSIP, with its seven negatively worded items, does not analyze as cleanly as the version with positively worded items. However, once the negative dimension is accounted for in an EQS model, the path model is virtually identical to the ones calculated in the previous analysis (See Slides 3 and 4).
- ✓ It is clear from these analyses that at least the majority of the variance from the negative dimension is method variance, and is not dissatisfaction.
- ✓ In the path model, I allowed the negative dimension to be associated with all four domains. The analysis indicated that all paths with the negative dimension were non-significant and should be deleted.
- ✓ Other evidence also indicates method variance including:
  - Statements from consumers filling out the instrument that they had difficulty understanding the double negatives; and,

- Perseveration response tendencies observed within this data set, as well as by other researchers including Paul Cleary and his team of researchers at Harvard Medical School.
- ✓ Based on the current analyses and observations, it is recommended that:
  - for scaling purposes, the twenty-one items in the OPT21 set be used.
  - five items representing important MHSIP indicators be added to the OPT21 set to form a core survey of 26 items.
  - anyone using the MHSIP survey use these 26 items plus any other items either from the MHSIP survey or other sources deemed important for the population being surveyed.

I am looking forward to the meeting next week.