Mode and Order

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Evaluation of Mode (Mail vs. Phone administration) Effects for Generic Health-Related Quality of Life Measures in Clinical Outcomes and Measurement of Health Study (COMHS)

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The Dixie Chicks were right.

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Hanmer, J., Hays, R. D., & Fryback, D. G. (2007). Mode of administration is important in U. S. national estimates of health-related quality of life. <u>Medical Care</u>, <u>45</u>, 1171-1179.

Prior Research on Mode of Administration Effects

Telephone yields more positive HRQOL than mail administration

- "Excellent" health reported by 30% in selfadministration, 37% by phone and 44% in a face-to-face interview (Hochstim, 1967)
- SF-36 (McHorney et al., 1994; Weinberger et al., 1996; Jones et al., 2001)
- HUI3 was 0.05 (0.25 SD) higher for phone than mail (Hanmer et al., 2007)

Health-Related Quality of Life Measures

■ SF-36v2TM

- PCS (6.6 -> 71.8)
- MCS (5.7 -> 71.0)
- SF-6D (0.30 -> 1.00)
- EQ-5D (-0.11 -> 1.00)
- QWB (0.09 ->1.00)
- HUI
 - HUI2 (-0.03 -> 1.00)
 - HUI3 (-0.36 -> 1.00)

Cross-over Design

Self-administration (mail) of HRQOL measures at baseline, 1 month, 3 months, and 6 months post-baseline.

At 6 months, additional administration by telephone, with participants randomized to order of mail/phone administration

Differences in days between survey dates

□ 61% were within 3 weeks (maximum = 213 days)



535 patients (159 entering a heart failure program, 376 scheduled for cataract survey) from UCSD, UCLA, and University of Wisconsin

447 patients (84%) at 6 months followup:

- 121 heart failure
- 326 cataract surgery

Mean age ~ 66 (36-91 range)

~ 53% female, 86% white, 26% high school education or less

Mean Differences

Repeated measures mixed model with random intercepts

- Controlling for fixed effects:
 - Gender
 - Age (35-44, 45-64, 65+)
 - Race (White vs. Non-white)
 - Education (1-11th grade, high school, some college, 4 year college+)
 - Site/disease (UCSD, UCLA, Wisconsin by heart failure and cataract).

Means for Mail by Order of Administration

	Mail (1) before phone	Mail (2) after phone	
MCS	51 ^b	50 ^b	
PCS	41 ^{b,c}	40 ^c	
SF-6D	0.70 ^b	0.69 ^b	
QWB	0.61 ^a	0.59 ^{a,b}	
EQ-5D	0.79 ^{b,c}	0.77 ^c	
HUI-2	0.80 ^b	0.79 ^b	
HUI-3	0.68 ^b	0.67 ^b	

Means for Phone by Order of Administration

	Phone (1) before phone	Phone (2) after mail	
MCS	53 ^a	54 ^a	
PCS	41 ^{a,b}	43 ^a	
SF-6D	0.74 ^a	0.75 ^a	
QWB	0.58 ^b	0.60 ^{a,b}	
EQ-5D	0.82 ^{a,b}	0.85 ^a	
HUI-2	0.80 ^{a,b}	0.83 ^a	
HUI-3	0.73 ^a	0.78 ^a	

Mail Versus Phone Means on Initial Administration

	Mail (1) before phone	Phone (1) before mail	
MCS	51 ^b	53 ^a ↑	
PCS	41 ^{b,c}	41 ^{a,b}	
SF-6D	0.70 ^b	0.74 ^a ↑	
QWB	0.61 ^a	0.58 ^b ↓	
EQ-5D	0.79 ^{b,c}	0.82 ^{a,b}	
HUI-2	0.80 ^b	0.80 ^{a,b}	
HUI-3	0.68 ^b	0.73 ^a ↑	

Mail Versus Phone Means on 2nd Administration

	Mail (2) after phone	Phone (2) after mail	
MCS	50 ^b	54ª ↑	
PCS	40 ^c	43ª ↑	
SF-6D	0.69 ^b	0.75 ^a ↑	
QWB	0.59 ^{a,b}	0.60 ^{a,b}	
EQ-5D	0.77 ^c	0.85 ^a ↑	
HUI-2	0.79 ^b	0.83ª ↑	
HUI-3	0.67 ^b	0.78ª ↑	

Means by Mode and Order

	Mail (2) after phone (n = 178)	Mail (1) before phone (n = 222)	Phone (1) before mail (n = 225)	Phone (2) after mail (n = 177)
MCS	50 ^b	51 ^b	53 ^a	54 ^a
PCS	40 ^c	41 ^{b,c}	41 ^{a,b}	43 ^a
SF-6D	0.69 ^b	0.70 ^b	0.74 ^a	0.75 ^a
QWB	0.59 ^{a,b}	0.61 ^a	0.58 ^b	0.60 ^{a,b}
EQ-5D	0.77°	0.79 ^{b,c}	0.82 ^{a,b}	0.85 ^a
HUI-2	0.79 ^b	0.80 ^b	0.80 ^{a,b}	0.83 ^a
HUI-3	0.67 ^b	0.68 ^b	0.73 ^a	0.78 ^a

Maximum Differences by HRQOL Measure

	Max. Difference	ES
SF-6D	6	0.5
EQ-5D	8	0.5
MCS	4	0.4
PCS	4	0.4
HUI3	10	0.4
HUI2	4	0.2
QWB	3	0.2

Mean difference vs. Correlation

ESmaximum difference	Pearson (ICC)	Rank of ICC
0.5	0.76 (0.76)	2
0.5	0.73 (0.73)	3
0.4	0.64 (0.63)	5.5
0.4	0.84 (0.83)	1
0.4	0.69 (0.68)	4
0.2	0.59 (0.59)	7
0.2	0.63 (0.63)	5.5
	ESmaximum difference 0.5 0.5 0.4 0.4 0.4 0.4 0.2 0.2	ESmaximum differencePearson (ICC)0.50.76 (0.76)0.50.73 (0.73)0.40.64 (0.63)0.40.84 (0.83)0.40.69 (0.68)0.20.59 (0.59)0.20.63 (0.63)

Summary of Results

- * The most positive HRQOL scores occur when measures administered by phone after a mail administration
- * The least positive scores occur by mail after a phone administration.
 - Effect sizes range from small to medium
- * Correlations (individual level) tell somewhat different story than mean differences (group) by mode
- * Caution warranted in comparing HRQOL estimates that differ by mode and/or order of administration

Questions?



SF-36 Means by Group



EQ-5D Means by Group



HUI Means by Group

