

Online Supplementary Document

McCarthy et al. Women's recall of maternal and newborn interventions received in the postnatal period: a validity study in Kenya and Swaziland

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Supplemental Table 1: Accuracy of women's recall of whether provider discussed breastfeeding/feeding for the baby by interview and socio-demographic characteristics, Kenya, 2009 - 2012

| | Sensitivity (%) (95%CI) | Specificity (%) (95%CI) | AUC (95%CI) | Sample Size |
|------------------------|----------------------------|----------------------------|---------------------------|----------------|
| Survey Round | | | | |
| R0 2009 | 84.3 (76.4,90.5) | 87.7 (79.9, 93.3) | 0.860 (0.815, 0.906) | 221 |
| R2 2011 | 85.1 (76.7,91.4) | 48.0 (27.8, 68.7) | 0.666 (0.560, 0.772) | 126 |
| R3 2012 | 71.0 (62.7,78.4) | 50.0 (34.6, 65.4) | 0.605 (0.521, 0.689) | 182 |
| Age of Client | | | | |
| 15-24 | 82.2 (75.2,88) | 64.6 (53.3, 74.9) | 0.734 (0.674, 0.795) | 234 |
| 25-34 | 78.8 (71.6,85.0) | 81.3 (70.7, 89.4) | 0.801 (0.746, 0.856) | 231 |
| 35-44 | 76.9 (60.7,88.9) | 72.2 (46.5, 90.3) | 0.746 (0.620, 0.872) | 57 |
| Age of Baby | | | | |
| <2wks | 80.2 (70.6,87.8) | 47.4 (24.4, 71.1) | 0.638 (0.515, 0.760) | 110 |
| 2-4wks | 76.3 (65.2,85.3) | 75.0 (58.8, 87.3) | 0.757 (0.673, 0.840) | 116 |
| 5-6wks | 80.9 (73.8,86.8) | 75.6 (64.9, 84.4) | 0.783 (0.726, 0.839) | 234 |
| 7-10wks | 79.4 (62.1,91.3) | 76.5 (58.8, 89.3) | 0.779 (0.679, 0.879) | 68 |
| Prior Parity | | | | |
| 1 | 82.0 (73.1,89.0) | 72.7 (59, 83.9) | 0.774 (0.703, 0.844) | 155 |
| 2 | 77.8 (67.2,86.3) | 71.8 (55.1, 85) | 0.748 (0.663, 0.833) | 120 |
| 3 | 80.0 (68.2,88.9) | 72.7 (54.5, 86.7) | 0.764 (0.672, 0.855) | 98 |
| 4+ | 80.2 (71.1,87.5) | 75.0 (59.7, 86.8) | 0.776 (0.700, 0.852) | 145 |
| Education Level | | | | |
| Less than secondary | 84.5 (76.6,90.5) | 87.0 (78.8, 92.9) | 0.778 (0.736, 0.820) | 429 |
| Secondary or more | 70.4 (58.4,80.7) | 65.5 (45.7, 82.1) | 0.680 (0.577, 0.783) | 100 |
| Total | 79.4 | 72.6 | 0.76 (0.72, 0.799) | 529 |

NA= estimate suppressed due to small sample size.

Supplemental Table 2: Accuracy of women's recall of whether provider discussed postpartum danger signs for the mother by interview and socio-demographic characteristics, Kenya, 2009 - 2012

| | Sensitivity (%) | Specificity (%) | AUC (95%CI) | Sample Size |
|---------------------|-------------------------|--------------------------|-----------------------------|-------------|
| Round | | | | |
| R0 2009 | NA | NA | NA | 0 |
| R2 2011 | 63.2 (49.3,75.6) | 85.7 (75.3, 92.9) | 0.744 (0.669, 0.820) | 127 |
| R3 2012 | 59.0 (45.7,71.4) | 91.5 (85.4, 95.7) | 0.753 (0.686, 0.819) | 191 |
| Age of Client | | | | |
| 15-24 | 66.1 (53.0,77.7) | 90.8 (81.9, 96.2) | 0.785 (0.717, 0.852) | 138 |
| 25-34 | 55.0 (38.5,70.7) | 90.7 (83.1, 95.7) | 0.729 (0.645, 0.812) | 137 |
| 35-44 | 56.2 (29.9,80.2) | 78.3 (56.3, 92.5) | 0.673 (0.520, 0.825) | 39 |
| Age of Baby | | | | |
| <2wks | 65.5 (51.9,77.5) | 85.5 (73.3, 93.5) | 0.755 (0.677, 0.832) | 113 |
| 2-4wks | 68.2 (45.1,86.1) | 92.4 (83.2, 97.5) | 0.803 (0.698, 0.908) | 88 |
| 5-6wks | 52.8 (35.5,69.6) | 88.7 (79.0, 95.0) | 0.708 (0.617, 0.798) | 107 |
| 7-10wks | NA | NA | NA | 0 |
| Prior Parity | | | | |
| 1 | 60.0 (43.3,75.1) | 91.1 (80.4, 97.0) | 0.755 (0.670, 0.841) | 96 |
| 2 | 77.8 (52.4,93.6) | 88.5 (76.6, 95.6) | 0.831 (0.723, 0.939) | 70 |
| 3 | 65.0 (40.8,84.6) | 94.6 (81.8, 99.3) | 0.798 (0.685, 0.911) | 57 |
| 4+ | 52.6 (35.8,69.0) | 82.6 (68.6, 92.2) | 0.676 (0.579, 0.774) | 84 |
| Education Level | | | | |
| Less than secondary | 64.3 (54,73.7) | 89.8 (83.1, 94.4) | 0.770 (0.716, 0.825) | 225 |
| Secondary or more | 45.0 (23.1,68.5) | 88.9 (79.3, 95.1) | 0.669 (0.552, 0.787) | 92 |
| Total | 61.0 (51.6,69.9) | 89.5 (84.4, 93.4) | 0.753 (0.704, 0.802) | 238 |

NA= estimate suppressed due to small sample size.

Supplemental Table 3: Accuracy of women's recall of whether provider weighed the baby by interview and socio-demographic characteristics, Kenya, 2009 - 2012

| | Sensitivity (%) | Specificity (%) | AUC (95%CI) | Sample Size |
|---------------------|-------------------------|--------------------------|----------------------------|--------------------|
| Round | | | | |
| R0 2009 | NA | NA | NA | 0 |
| R2 2011 | 99.0 (94.4,100) | 20.7 (08.0, 39.7) | 0.598 (0.523, 0.674) | 126 |
| R3 2012 | 95.2 (90.7,97.9) | 56.2 (29.9, 80.2) | 0.757 (0.630, 0.884) | 181 |
| Age of Client | | | | |
| 15-24 | 96.4 (91.0,99.0) | 34.6 (17.2, 55.7) | 0.655 (0.560, 0.750) | 136 |
| 25-34 | 95.7 (90.2,98.6) | 35.7 (12.8, 64.9) | 0.657 (0.525, 0.789) | 130 |
| 35-44 | 100 (89.4,100) | 20.0 (00.5, 71.6) | 0.600 (0.404, 0.796) | 38 |
| Age of Baby | | | | |
| <2wks | 94.9 (87.4,98.6) | 22.6 (09.6, 41.1) | 0.587 (0.509, 0.666) | 109 |
| 2-4wks | 93.4 (85.3,97.8) | 57.1 (18.4, 90.1) | 0.753 (0.553, 0.953) | 83 |
| 5-6wks | 100 (96.3,100) | 50.0 (11.8, 88.2) | 0.750 (0.531, 0.969) | 104 |
| 7-10wks | 100 (66.4,100) | 100 (02.5, 100) | NA | 10 |
| Prior Parity | | | | |
| 1 | 94.8 (87.2,98.6) | 27.8 (09.7, 53.5) | 0.613 (0.504, 0.722) | 95 |
| 2 | 94.8 (85.6,98.9) | 33.3 (07.5, 70.1) | 0.641 (0.475, 0.807) | 67 |
| 3 | 95.7 (85.2,99.5) | 57.1 (18.4, 90.1) | 0.764 (0.564, 0.964) | 53 |
| 4+ | 100 (94.9,100) | 27.3 (06.0, 61.0) | 0.636 (0.498, 0.774) | 81 |
| Education Level | | | | |
| Less than secondary | 97.8 (94.6,99.4) | 28.1 (13.7, 46.7) | 0.630 (0.550, 0.710) | 217 |
| Secondary or more | 93.5 (85.5,97.9) | 46.2 (19.2, 74.9) | 0.698 (0.555, 0.842) | 90 |
| Total | 96.6 (93.6,98.4) | 33.3 (20.0, 49.0) | 0.649 (0.579, 0.72) | 225 |

NA= estimate suppressed due to small sample size.

Supplemental Table 4: Accuracy of women's recall of whether provider immunized the baby by interview and socio-demographic characteristics, Kenya, 2009 - 2012

| | Sensitivity (%) | Specificity (%) | AUC (95%CI) | Sample Size |
|---------------------|-------------------------|--------------------------|-----------------------------|-------------|
| Round | | | | |
| R0 2009 | NA | NA | NA | 0 |
| R2 2011 | 95.7 (89.5,98.8) | 69.2 (48.2, 85.7) | 0.825 (0.732, 0.918) | 120 |
| R3 2012 | 92.4 (86.7,96.1) | 76.7 (57.7, 90.1) | 0.845 (0.765, 0.925) | 174 |
| Age of Client | | | | |
| 15-24 | 97.5 (93.8,99.3) | 68.8 (50.0, 83.9) | 0.831 (0.749, 0.914) | 193 |
| 25-34 | 95.7 (91.7,98.1) | 77.8 (52.4, 93.6) | 0.867 (0.767, 0.967) | 203 |
| 35-44 | 93.3 (81.7,98.6) | 57.1 (18.4, 90.1) | 0.752 (0.551, 0.954) | 52 |
| Age of Baby | | | | |
| <2wks | 88.6 (80.1,94.4) | 83.3 (58.6, 96.4) | 0.860 (0.765, 0.954) | 106 |
| 2-4wks | 94.0 (85.4,98.3) | 70.8 (48.9, 87.4) | 0.824 (0.727, 0.921) | 91 |
| 5-6wks | 99.5 (97.2,100) | 53.8 (25.1, 80.8) | 0.767 (0.626, 0.908) | 207 |
| 7-10wks | 100 (92.3,100) | 50.0 (06.8, 93.2) | NA | 50 |
| Prior Parity | | | | |
| 1 | 97.3 (92.4,99.4) | 75.0 (50.9, 91.3) | 0.862 (0.763, 0.96) | 132 |
| 2 | 97.6 (91.8,99.7) | 64.7 (38.3, 85.8) | 0.812 (0.694, 0.93) | 102 |
| 3 | 94.7 (86.9,98.5) | 75.0 (34.9, 96.8) | 0.848 (0.686, 1.00) | 83 |
| 4+ | 94.7 (88.9,98) | 69.2 (38.6, 90.9) | 0.82 (0.688, 0.952) | 127 |
| Education Level | | | | |
| Less than secondary | 96.6 (94.0,98.3) | 75.0 (57.8, 87.9) | 0.858 (0.786, 0.93) | 361 |
| Secondary or more | 94.4 (86.2,98.4) | 60.9 (38.5, 80.3) | 0.776 (0.671, 0.882) | 94 |
| Total | 96.2 (93.8,97.9) | 69.5 (56.1, 80.8) | 0.829 (0.769, 0.889) | 434 |

NA= estimate suppressed due to small sample size.

Supplemental Table 5. Covariate Adjusted ROC Regression of Influence of Individual and Interview Characteristics on Women's Ability to Recall Four Postnatal Care Interventions, Adjusting for Correlated Error at Facility Level

| | Beta Coefficient | 95% CI | Wald Test-statistic | P-value |
|--|-------------------------|----------------|----------------------------|----------------|
| Discuss Breastfeeding/ Feeding for Baby (N=522) | | | | |
| Facility (df=14) | -0.04 | (-0.10, 0.02) | -1.38 | 0.168 |
| Round (df=2) | -0.18 | (-0.40, 0.05) | -1.6 | 0.109 |
| Age of Client (df 2) | -0.07 | (-0.21, 0.06) | -1.07 | 0.283 |
| Age of Baby (df=3) | 0.01 | (-0.15, 0.17) | 0.13 | 0.897 |
| Prior Parity (df=3) | -0.01 | (-0.12, 0.10) | -0.16 | 0.874 |
| Education (df=1) | -0.28* | (-0.49, -0.07) | -2.47 | 0.014 |
| Discuss Danger Signs for Mother After Birth (N=318) | | | | |
| Facility (df=14) | -0.04 | (-0.23, 0.15) | -0.43 | 0.664 |
| Round (df=2) | -0.10 | (-0.51, 0.31) | -0.46 | 0.642 |
| Age of Client (df 2) | -0.15 | (-0.47, 0.16) | -0.95 | 0.34 |
| Age of Baby (df=3) | -0.19* | (-0.35, -0.03) | -2.3 | 0.021 |
| Prior Parity (df=3) | -0.07 | (-0.25, 0.12) | -0.72 | 0.472 |
| Education (df=1) | -0.45 | (-1.21, 0.31) | -1.17 | 0.243 |
| Weigh the Baby (N=296) | | | | |
| | | N=296 | | |
| Facility (df=14) | -0.04 | (-0.09, 0.01) | -1.67 | 0.094 |
| Round (df=2) | -0.25 | (-0.49, -0.17) | -2.1 | 0.036 |
| Age of Client (df 2) | 0.07 | (-0.13, 0.28) | 0.7 | 0.481 |
| Age of Baby (df=3) | 0.17 | (-0.01, 0.36) | 1.85 | 0.064 |
| Prior Parity (df=3) | 0.11** | (0.02, 1.8) | 2.78 | 0.005 |
| Education (df=1) | -0.28 | (-0.70, 0.14) | -1.31 | 0.191 |
| Immunize the Baby (N=294) | | | | |
| Facility (df=14) | -0.02 | (-0.07 - 0.03) | -0.82 | 0.415 |
| Round (df=2) | -0.17 | (-0.56 - 0.22) | -0.87 | 0.387 |
| Age of Client (df 2) | -0.16 | (-0.39 - 0.07) | -1.38 | 0.168 |
| Age of Baby (df=3) | 0.25** | (0.10 - 0.40) | 3.36 | 0.001 |
| Prior Parity (df=3) | -0.09 | (-0.26 - 0.08) | -1.08 | 0.28 |
| Education (df=1) | -0.00 | (-0.40 - 0.39) | -0.02 | 0.988 |

** p<0.01, * p<0.05

#Adjusted for clustering at facility level

df= degrees of freedom