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Recall and decay of consent information amongst parents of infants participating in a randomised controlled clinical trial using an audio-visual tool in The Gambia

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1 **Recall and decay of consent information amongst parents of infants participating in a**
2 **randomised controlled clinical trial using an audio-visual tool in The Gambia**

3
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- 6
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12 **Abstract**

13 Communicating essential research information to low literacy research participants in Africa is highly
14 challenging, since this population is vulnerable to poor comprehension of consent information.
15 Several supportive materials have been developed to aid participant comprehension in these
16 settings. Within the framework of a pneumococcal vaccine trial in The Gambia, we evaluated the
17 recall and decay of consent information during the trial which utilized an audio-visual tool called
18 'Speaking Book', to foster comprehension amongst parents of participating infants. The Speaking
19 Book was developed in the two most widely spoken local languages.

20 Four-hundred and nine parents of trial infants gave consent to participate in this nested study and
21 were included in the baseline assessment of their knowledge about trial participation. An additional
22 assessment was conducted approximately 90 days later, following completion of the clinical trial
23 protocol.

24 All parents received a Speaking Book at the start of the trial. Trial knowledge was already high at the
25 baseline assessment with no differences related to socio-economic status or education. Knowledge
26 of key trial information was retained at the completion of the study follow-up. The Speaking Book
27 (SB) was well received by the study participants. We hypothesize that the SB may have contributed
28 to the retention of information over the trial follow-up. Further studies evaluating the impact of this
29 innovative tool are thus warranted.

30
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32 **Keywords: Informed consent, knowledge, recall, decay, speaking book, Africa**
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46 **Introduction**

47 Individual agreement, or informed consent, is a process by which a potential participant voluntarily
48 confirms his or her willingness to participate in a clinical trial after having received necessary
49 information about all aspects relevant to inform this decision. This is a critical requirement for
50 participation in biomedical research and should include a demonstration of recall of the purpose of
51 the trial, potential benefits and harm, and participants' obligations and responsibilities.¹ The
52 informed consent process does not end at signing off the consent form, but continues throughout
53 the trial^{2,3} and participants need to understand their rights including withdrawal at any time without
54 the need to give a reason for doing so.

55

56 When clinical trials are conducted in populations with low literacy levels, the process of informed
57 consent encounters several challenges related but not limited to the basic principles of autonomy,
58 voluntariness and comprehension. It is especially difficult for illiterate participants to appreciate how
59 clinical trials differ from medical care, since investigators perform research procedures with the
60 same medical instruments that are used in standard care.⁴⁻⁶ The perceived authority of a physician
61 in these settings also often makes potential participants reluctant to ask questions or express
62 unwillingness to participate in the trial.⁷ In addition, misunderstanding of trial procedures such as
63 randomization⁸ are common.

64 There are particular challenges faced during the consent process in sub-Saharan Africa, given the
65 combination of low level of literacy in the population and high number of spoken rather than written
66 local languages. In many instances in these settings, the ICD is written in English or the
67 corresponding official language of the country and, for illiterate participants, it is verbally
68 interpreted by trained study staff during the consent process using their spoken language.⁹ Consent
69 of illiterate participants is also supported by the presence of a literate impartial witness who should
70 be present throughout the discussion to attest that the information discussed is consistent with the
71 ICD and the process follows internationally acceptable ethical standards. The literate witness should
72 be independent of the trial and should read and translate any written information supplied to the
73 potential participant.¹ Identifying and recruiting independent, literate witnesses poses an additional
74 challenge.

75

76 In order to enable research participants to make an informed decision based on understanding of
77 consent information, a number of innovative techniques have been developed. These include use of
78 flower diagrams, flip charts with pictures, audio or audio-visual recordings and person-to-person
79 discussions amongst others.^{3,10-13} Speaking Books (SB) have been developed to aid understanding
80 and recall of trial information in low literacy communities. The SB is A5 size, has hard covers and
81 large pages with each page of the book graphically illustrated with simple text relevant to the
82 illustration. Every SB also has a plastic panel with a built in battery, which hosts a series of push
83 buttons, each of which corresponds to a specific page in the speaking book. When activated, the
84 'push buttons' trigger a soundtrack of the text on the relevant page. The soundtrack is narrated by a
85 native speaker with the appropriate voice and tonal quality, and is thus vocalised to the person using
86 the book.¹⁴ SB have been piloted among English speakers^{14,15} but no study has examined their role

87 when provided in participants' local languages despite the fact that the book has been translated
88 into several local languages in Africa and Asia.

89

90 The nested study presented here assessed the recall of parents of infants participating in a
91 pneumococcal vaccine trial in a peri-urban setting in The Gambia, West Africa. This study was nested
92 within a phase III randomised, open-label trial aimed at evaluating the safety, tolerability and
93 immunogenicity of 13-valent pneumococcal conjugate vaccine (PCV13) formulated in multi-dose
94 vials given with routine paediatric vaccinations in healthy infants (*Idoko et al* , under review,
95 *Vaccine*). The adult female literacy rate in this setting is about 30%¹⁶ and health-seeking behaviour is
96 governed by traditions rather than modern health care norm.¹⁷ We also assessed factors associated
97 with decay of knowledge of key information relating to the parent trial¹⁸ during the three month
98 follow-up period employing a descriptive study design. The consent process for the parent trial
99 utilized the SB with information delivered in the main local languages in Western Gambia – Wollof
100 and Mandinka.

101 **Results**

102 Between January and May 2014, 500 infants were recruited for the parent trial. 428 parents (85.6%)
103 were approached for this nested study and 409 (95.6%) parents (all mothers in this case) gave oral
104 consent to answer the questions of the AQ in addition to the ACQ. The analysis was performed on
105 information available at the two time points assessed from 377 respondents (92.1%).

106

107 Most respondents were unemployed women (70.6%); 17.2% had no formal education, over 40% had
108 five or fewer years of formal education and approximately three quarters were in a monogamous
109 family (Table 1),

110

111

112 For the 10 ACQ questions, over 99% of women during pre-trial assessment answered all of the
113 questions correctly at the first attempt and the remaining 1% at the second attempt. At the end of
114 the trial, all women responded correctly to the 10 questions in the only attempt given (Table 2).

115 For the AQ, which was specific for the nested study, the frequency of correct answers was lower
116 with 6 out of 10 questions having less than 90% of correct answers pre-trial; and only 2 out of 10
117 post-trial. Questions with double negative statements like 'Your child will not receive other vaccines
118 for his/her age while in the study' were answered correctly by 71.1% of women pre-trial and 76.9%
119 post-trial compared to over 98% correct responses at both time points, for more straightforward
120 questions like 'You can request a form to take home and discuss with your family' (Table 2). Overall,
121 the proportion of correct answers post-trial was higher than pre-trial, with significant differences for
122 "A malaria test will never be done if your child develops fever" (pre: 80.9% correct versus post:
123 94.7%, $p<0.001$); "the doctor will stop the study for your child if s/he thinks that your baby could be
124 hurt" (pre: 86.7% correct versus post: 97.3%, $p<0.001$) and "If your baby is unwell 5 days after
125 vaccination he/she must be admitted to hospital" (pre: 87.5% correct versus post: 99.6%, $p<0.001$).

126 No differences in level of trial knowledge were found by age, occupation, years of education, religion
127 or family type either at pre or post-trial (Table3). A difference between time points was only
128 observed as an increase in knowledge among farmers (from 75% to 90%), which was the group with
129 lowest knowledge pre-trial. This difference was however not statistically significant as the

130 confidence intervals at both time points overlapped and the 95% confidence interval for the mean
131 difference just crosses 0 (-30.2 - 0.2) .

132

133

134 **Participant responses to open ended questions**

135 Most women (95.5%) did not recommend any change. Among those suggesting improvements
136 (multiple answers permitted), the most common suggestions were addition of other local languages
137 such as Fula, or Jola (2.7%); followed by increasing the speaker volume (0.8%), the need for extra
138 batteries (0.5%) and reduction in the size of the book (0.5%). 97.9% shared the book with other
139 family and friends.

140 The key messages stated by respondents to the open ended questions relating to their recall from
141 the SB are summarized as follows;

142 1) It provided a better recall of research ethics e.g. [*“your child’s confidential information will be*
143 *protected”, “it is your decision to participate in the trial”*].

144 2) It provided a better recall of clinical research e.g. [*“the field worker will visit for five days after*
145 *vaccination, “checking the blood is the most important part to me because without this it’s*
146 *impossible to know what effect the vaccine has had”*].

147 3) It provided information on improving child health e.g. [*“attending monthly maternal child health*
148 *clinics for vaccination can improve the health of your child”*],

149 4) It explained the importance of vaccination e.g. [*“I now understand why we take our children for*
150 *the monthly clinics and the importance of participating in research studies”, “monthly vaccination is*
151 *important, can protect your child from diseases*]

152 5) It stimulated interest in the trial e.g. [One 25year old respondent said “I listened to the book in my
153 neighbours’ home and decided to come and find out more about the trial”].

154

155 **Discussion**

156 In this study, we demonstrated that trial participants receiving a speaking book had a good
157 knowledge of the trial procedures at the start of the trial and retained this information during the 90
158 days of trial procedures.

159 Although trial information was generally well understood, the answers to more difficult questions,
160 such as those with double negative statements or related to clinical care, were less accurate (70-80%
161 correct answers compared to over 90%). This is probably a consequence of the generally low
162 educational levels in our study population. In both developed and developing country contexts it has
163 been shown that educational level was an independent predictor of comprehension.^{19,20} In contrast,
164 however, educational level was not associated with comprehension in our study as previously shown
165 in The Gambia, within a largely illiterate population.^{21,22} It may be that differences in education
166 within the study population are too lean to detect differences and is a subject for future research.

167 Interestingly, we noted that there was a trend of improvement of trial knowledge over the course of
168 the follow-up period for all age groups, occupations, educational levels, religions and family types.
169 We speculate that this trend (though not statistically significant) may, in part, have been due to the
170 use of the SB which encouraged continuous exposure to key trial information.²³ Our statement is
171 supported by the reports of high SB use and the sharing of the SB with other family members and
172 friends which implies continuous exposure to the trial information. Studies with comparator groups
173 where some participants do not receive the SB would however be necessary to confirm this
174 hypothesis as mere participation in the trial and other trial procedures could also account for this
175 trend. Previous studies which have assessed the use of multimedia tools^{10,21} to assess recall of key

176 trial information one week after initial consent have also shown improvements in trial participants
177 knowledge of clinical trials, and their rights and responsibilities. Our study differs as the follow-up
178 period was longer (90 days) compared to the shorter follow-up of 1 week in other studies.

179
180 Most of the women appeared satisfied with the SB and did not suggest any improvements (95.5%).
181 Among suggested improvements were changes to portability of the book and increased battery life.
182 The suggestion to include other major oral languages in the SB, although ideal, it would be
183 impractical for logistical reasons due to the number of minor languages in the country. Still, in
184 countries with several local languages the limitation of the number of languages to be added to the
185 SB would always be a limitation to consider. We also observed that the SB is an additional tool for
186 expanding the information of an ongoing trial in the community, based on the responses of one of
187 our trial participants indicating that she first heard about our trial at a neighbors' home by listening
188 to her SB.

189
190 Beyond the limitations of the SB, this ancillary study has some limitations based on the study design,
191 given that all study participants had access to the SB prior to the assessment and thus there was no
192 comparator group to assess the real advantages of the book. We only included participants who had
193 passed the baseline assessment to the parent trial. We note however that only 2 out of 526
194 participants were excluded from the main trial for failing the baseline comprehension test. In
195 addition, the follow-up period was short and studies with longer follow up may reveal some decay in
196 consent information. The population in the Gambia also has long term exposure to clinical research
197 with the presence of the Medical Research council Unit for over 70 years. This may also have
198 impacted understanding and subsequent recall of information.

199 200 **Conclusion**

201
202
203 The awareness of trial information was generally high in this illiterate population.
204 There was no apparent decay in consent information or change in recall in any of the
205 sociodemographic subgroups.
206 The SB has potential to educate low literacy communities regarding participation in clinical trials in
207 settings where written language translation is a challenge and may have benefits beyond education
208 for the specific trial.

209 **Methods**

210 211 **Study design and population**

212
213 The parent trial enrolled healthy infants aged 42 to 70 days weighing 3.5 kg or more who presented
214 for vaccination at Fajikunda Major Health Centre (FKHC), a government run health facility in western
215 Gambia that vaccinates approximately 5,000 children per year. Details of entry and exclusion criteria
216 are available at (ClinicalTrials.gov, NCT01964716). Children were recruited before the first dose of
217 PCV13 and were visited daily for 5 days after each vaccination to assess for local and systemic
218 adverse vaccine reactions, and seen monthly at the health facility until one month after the third
219 dose of PCV13. Parents who gave consent for their infants to participate in the trial were
220 approached to participate in this descriptive nested study.

221 222 223 **Consent process**

224

225 Community leaders including household heads, women and youth leaders and local religious leaders
226 were visited to give information regarding the trial. This was followed by large community
227 sensitisation meetings at which the trial team explained key trial information and addressed
228 concerns raised on the cultural and social appropriateness of some of the trial procedures such as
229 frequency of appointments and what each clinic/home visit would entail.

230

231 The trial staff subsequently approached potential participants at the Infant Welfare clinic located
232 within FKHC, and held discussions about the parent trial with parents who brought their infants for
233 routine immunisations/care. The parents were encouraged to seek clarity on any aspect of the
234 parent trial. The trial staff then asked the parent a set of questions to ensure understanding, and
235 provided a copy of the ICD to be taken home to discuss with other family members. These steps are
236 in accordance with the routine consent process for trials of this nature in this setting.

237

238 Following this, meetings to discuss the contents of the ICD and answer any questions from other
239 family members identified by the parent were arranged. Individuals who continued to express
240 willingness to participate in the study received a copy of the SB as required by the parent trial. The
241 SB was developed in two major Gambian languages: - Mandinka and Wolof. The book explained in
242 clear local dialect the basic elements of the trial participation including trial purpose, participant
243 rights, and their roles and responsibilities (Figure 1). The research staff further explained to parents
244 who gave consent how to use the book, including how to switch between the two local language
245 recordings.

246 Parents were then requested to visit the FKHC for informed consent procedure (including another
247 explanation of the consent document and an opportunity to ask questions). Assessment of eligibility
248 was also performed by the trial clinicians during this visit. Consent information was given only in
249 Mandinka, Wolof or English, based on participant preference.

250

251 Following these procedures, participant recall of key trial information was assessed using an
252 interviewer-administered Assessment of Consent recall Questionnaire (ACQ).

253

254 The ACQ was a 10-item questionnaire with a 'true' or 'false' response. Domains covered by this
255 questionnaire included purpose of the trial, confidentiality, voluntariness and trial procedures. A
256 score of 1 was assigned for each question answered correctly and 0 for questions answered
257 incorrectly. If the total score was 10 the participant was enrolled. If the score was 9, the question
258 wrongly answered was reviewed with the parent and the participant enrolled. A score of 8 or below
259 required a review of trial information followed by a second attempt at the ACQ. If any error was
260 made at the second attempt, the participant was not eligible for enrolment into the parent trial.

261

262 Parents of infants recruited in the parent trial were subsequently approached to participate in this
263 nested study by giving oral consent. Where consent was given, an **A**dditional Questionnaire (AQ)
264 comprising of 10 question items (8 true or false and two open ended) was then administered on the
265 day of enrolment) asking more in-depth questions regarding the trial. Only one attempt was allowed
266 to respond at these questions and the results did not compromise the participation in the parent
267 trial. Additional questions on experience of use of the SB were asked post trial (90 days post
268 enrolment) along with the re- administration of the ACQ and AQ.

269

270 The knowledge of informed consent information was determined by the responses to questions in
271 the two questionnaires.

272

273 This study utilized a speaking book narrated in the well known voice of a popular local media
274 personality.

275
276

277 **Statistical methods**

278

279 *Statistical analysis*

280

281 Data analysis

282 Twenty items from both questionnaires were used to assess the knowledge of participants,
283 estimated by the proportion of correct responses given by the participants. Socio-demographic
284 factors (age, education level, religion, family type and occupation) and each knowledge assessment
285 item, all categorical, were summarized by proportion. Fisher's exact tests for association were
286 applied to compare the proportions of correct answers for each item between visits.

287 Further, ordinary least square (OLS) linear regression analysis was applied to estimate and compare
288 mean proportions of correct answers (with their 95% confidence intervals) between and within
289 different levels of socio-demographic factors. Separate analyses were conducted at the two time
290 points and for the paired differences between the two visits (knowledge decay). Overall p values of
291 associations were estimated for the outcomes (visit one and visit four), as well as specific p values
292 for within socio-demographic group knowledge decay.

293 All analyses were conducted in Stata version 12 (StataCorp, USA). A two-sided p value <0.05 was
294 considered to be statistically significant.

295 Open ended questions were analyzed through content analysis of participant responses¹⁸.

296

297 **Ethical consideration**

298 The Gambia Government/MRC Joint Ethics Committee approved the parent trial and this nested
299 study. Written informed consent was obtained for parent trial while verbal consent was obtained for
300 the nested study. Participation was voluntary and confidentiality maintained.

301

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ACCEPTED MANUSCRIPT

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378 **Table1: Socio-demographic characteristics of mothers of infants enrolled to answer additional**
379 **questions on consent during parent trial**

Variable	n (%)
Age groups of Respondent (years)	
18-24	147 (39.0%)
25-29	104 (27.6%)
30+	126 (33.4%)
Occupation	
Civil Servant	14 (3.7%)
Farming	1 (0.3%)
Others	29 (7.7%)
Trading	67 (17.8%)
Unemployed	266 (70.6%)
Years Of Education	
0	65 (17.2%)
1-5	90 (23.9%)
6-10	140 (37.1%)
11-14	75 (19.9%)
15+	7 (1.9%)
Family Type	
Monogamy	273 (72.4%)
Polygamy	100 (26.5%)
Single Parent	4 (1.1%)
Total	377

380

381

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383

Table2: Assessment of consent recall and decay in knowledge between visit 1 (D0) and visit 4 (D 90)

Question	Day 0 (pre-trial)	Day 90 (post trial)	p- value
Questions requiring correct answers prior to trial enrolment (ACQ)			
N	377	377	
This study will assess the pneumococcal vaccine already used in Gambia. (attempts)			1.00
1	376 (99.7%)	377 (100.0%)	
2	1 (0.3%)	0 (0.0%)	
Your child will receive trial vaccines on 2 occasions during the study. (attempts)			0.50
1	375 (99.5%)	377 (100.0%)	
2	2 (0.5%)	0 (0.0%)	
This study requires that you come to the clinic for a total of 4 visits. (attempts)			0.25
1	374 (99.2%)	377 (100.0%)	
2	3 (0.8%)	0 (0.0%)	
This new vaccine will protect your child against polio. (attempts)			0.50
1	375 (99.5%)	377 (100.0%)	
2	2 (0.5%)	0 (0.0%)	
A participant in this trial may receive the trial vaccine (attempts)			0.50
1	375 (99.5%)	377 (100.0%)	
2	2 (0.5%)	0 (0.0%)	
1 teaspoon of blood will be collected from your child at the 4 th visit. (attempts)			0.50
1	375 (99.5%)	377 (100.0%)	
2	2 (0.5%)	0 (0.0%)	
You are free to withdraw from this study at any time. (attempts)			0.50
1	375 (99.5%)	377 (100.0%)	
2	2 (0.5%)	0 (0.0%)	
Study nurses can tell anyone about your participation in the study (attempts)			0.50
1	375 (99.5%)	377 (100.0%)	
2	2 (0.5%)	0 (0.0%)	
You will be visited by a field worker for 5 days after each vaccination (attempts)			0.50
1	375 (99.5%)	377 (100.0%)	
2	2 (0.5%)	0 (0.0%)	
Your child's participation in the study will be for a period of 4 months (attempts)			0.50
1	375 (99.5%)	377 (100.0%)	
2	2 (0.5%)	0 (0.0%)	
Additional questions to assess consent recall and decay (AQ)			

Vaccines will help to protect your child against getting diseases caused by germs.			0.75
False	4 (1.1%)	6 (1.6%)	
True	373 (98.9%)	371 (98.4%)	
How Many Babies need to be Recruited, n (%)			0.53
(10-400)	37 (9.8%)	43 (11.4%)	
500	333 (88.3%)	330 (87.5%)	
(600-2000)	7 (1.9%)	4 (1.1%)	
When your child receives vaccines his/her body produces super heroes to fight infection			0.049
False	6 (1.6%)	16 (4.2%)	
True	371 (98.4%)	361 (95.8%)	
Your child will not receive other vaccines for his/her age while in the study			0.081
False	268 (71.1%)	290 (76.9%)	
True	109 (28.9%)	87 (23.1%)	
You can request a form to take home and discuss with your family			0.75
False	6 (1.6%)	4 (1.1%)	
True	371 (98.4%)	373 (98.9%)	
A malaria test will never be done if your child develops fever			<0.001
False	305 (80.9%)	357 (94.7%)	
True	72 (19.1%)	20 (5.3%)	
Which other person can sign the consent form?			0.77
Husband	348 (92.3%)	353 (93.6%)	
Mother	9 (2.4%)	8 (2.1%)	
Other	20 (5.3%)	16 (4.2%)	
Babies may have pain but not swelling when a vaccine is given			0.24
False	70 (18.6%)	57 (15.1%)	
True	307 (81.4%)	320 (84.9%)	
The doctor will stop the study for your child if he/she thinks that your baby could be hurt			<0.001
False	50 (13.3%)	10 (2.7%)	
True	327 (86.7%)	367 (97.3%)	
If your baby is unwell 5 days after vaccination he must be admitted to hospital.			<0.001
True	47 (12.5%)	9 (2.4%)	
False	330 (87.5%)	368 (97.6%)	

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386 **Table 3: Assessment of consent recall and decay in knowledge based on socioeconomic**
 387 **parameters.**

Variables	Day 0	P	Day 90	P	Difference
	(pre trial)		(post trial)		(Visit1-Visit4)
	Mean(95%CI)	value	Mean(95%CI)	value	Mean(95%CI)
Age of Respondent (years)		0.570		0.768	
18-24	87.8(86.7 ; 88.9)		89.3(88.6 ; 90.0)		-1.5(-2.7 ; -0.2)
25-29	88.7(87.4 ; 90.0)		89.0(88.2 ; 89.8)		-0.3(-1.8 ; 1.2)
30+	89.8(88.6 ; 91.1)		89.0(88.3 ; 89.7)		0.8(-0.5 ; 2.2)
Occupation		0.144		0.821	
Civil Servant	89.6(86 ; 93.3)		88.9(86.7 ; 91.1)		0.7(-3.4 ; 4.8)
Farming	75.0(61.4 ; 88.6)		90.0 (81.8 ; 98.2)		-15.0(-30.2 ; 0.2)
Other	86.7(84.2 ; 89.2)		88.6(87.1 ; 90.1)		- 1.9(-4.7 ; 0.9)
Trading	89.1(87.4 ; 90.8)		89.6(88.6 ; 90.6)		- 0.5 (-2.4 ; 1.3)
Unemployed	88.9(88.0 ; 89.7)		89.1(88.6 ; 89.6)		- 0.2 (-1.1 ; 0.7)
Education Level		0.786		0.14	
Arabic Only	89.3(88 ; 90.7)		88.5(87.7 ; 89.3)		0.8(-0.7 ; 2.3)
None	88.5(86.8 ; 90.2)		89.1(88.1 ; 90.1)		-0.6(-2.5 ; 1.3)
Part Primary	87.9(85.3 ; 90.4)		88.8(87.2 ; 90.3)		-0.9(-3.8 ; 2)
Part Secondary	88.8(87.4 ; 90.1)		89.8(89.0 ; 90.5)		-1.0(-2.5 ; 0.4)
Part Tertiary	86.9(82.0 ; 91.7)		86.9(84.0 ; 89.7)		0.0(-5.4 ; 5.4)
Primary	85.9(81.8 ; 90)		90.9(88.5 ; 93.4)		-5.0(-9.6 ; -0.4)
Secondary	89.4(87.2 ; 91.6)		88.7(87.4 ; 90)		0.6(-1.8 ; 3.1)
Tertiary	89.0(85.5 ; 92.5)		90.3(88.2 ; 92.4)		-1.3(-5.3 ; 2.6)
Years Of Education (caretaker)		0.86		0.496	
0	88.5(86.8 ; 90.2)		89.1(88.1 ; 90.1)		-0.6(-2.5 ; 1.3)
1-5	89.2(87.7 ; 90.6)		88.7(87.9 ; 89.6)		0.4(-1.2 ; 2.1)
6-10	88.3(87.2 ; 89.5)		89.5(88.8 ; 90.2)		-1.1(-2.4 ; 0.1)
11-14	89.2(87.6 ; 90.8)		89.2(88.3 ; 90.1)		0.0(-1.8 ; 1.8)
15+	89.3(84.1 ; 94.5)		87.1(84.1 ; 90.2)		2.1(-3.6 ; 7.9)
Religion		0.252		0.524	
Christianity	86.1(81.6 ; 90.7)		90.0(87.3 ; 92.7)		-3.9(-9.0 ; 1.2)
Islam	88.8(88.1 ; 89.5)		89.1(88.7 ; 89.5)		-0.3(-1.1 ; 0.5)
Family Type		0.808		0.257	
Monogamy	88.6(87.8 ; 89.4)		89.1(88.6 ; 89.6)		-0.5(-1.4 ; 0.4)
Polygamy	89.1(87.7 ; 90.4)		89.0(88.2 ; 89.8)		0.1(-1.5 ; 1.6)
Single Parent	90.0(83.2 ; 96.8)		92.5(88.4 ; 96.6)		-2.5(-10.1 ; 5.1)

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