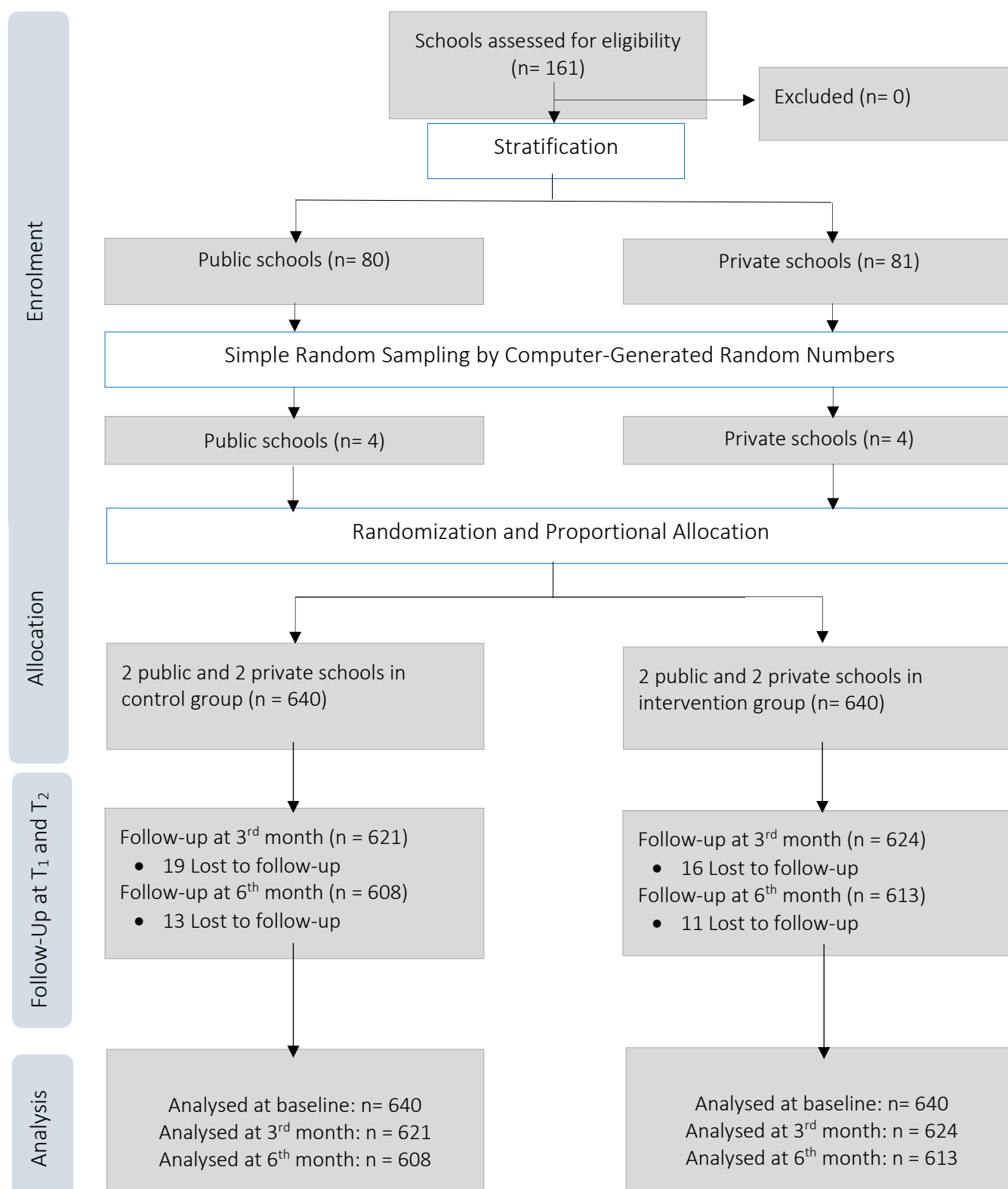


**Table 1:** Characteristics of respondents

Variable	Control (%)	Intervention (%)	Total (%)	$\chi^2/t$	p value
	n = 640	n = 640	n = 1280		
<b>Respondents' characteristics</b>					
<b>Age groups (years)</b>				2.002	0.368
12 – 14	204 (31.9)	208 (32.5)	412 (32.2)		
15 – 17	366 (57.2)	377 (58.9)	743 (58.0)		
>17	70 (10.9)	55 (8.6)	125 (9.8)		
Mean age $\pm$ SD	15.25 $\pm$ 1.69	15.21 $\pm$ 1.65	15.23 $\pm$ 1.67	0.452	0.651
<b>Gender</b>				31.3	0.576
Female	324 (50.6)	314 (49.1)	638 (49.8)		
Male	316 (49.4)	326 (50.9)	642 (50.2)		
<b>School type</b>				1.763	0.184
Public	480 (75.0)	459 (71.7)	939 (73.4)		
Private	160 (25.0)	181 (28.3)	341 (26.6)		
<b>Class</b>				0.0005	0.998
SS1	214 (33.4)	215 (33.6)	429 (33.5)		
SS2	214 (33.4)	214 (33.4)	428 (33.4)		
SS3	212 (33.1)	211 (33.0)	423 (33.1)		
<b>Subject combination</b>				5.763	0.056
Science	238 (37.2)	236 (36.9)	474 (37.1)		
Art	201 (31.4)	236 (36.9)	437 (34.1)		
Commercial	201 (31.4)	168 (26.2)	369 (28.8)		
<b>Tribe</b>				7.149	0.067
Yoruba	507 (79.2)	531 (83.0)	1038 (81.0)		
Hausa	27 (4.3)	33 (5.2)	60 (4.7)		
Igbo	31 (4.8)	17 (2.7)	48 (3.8)		
Others	75 (11.7)	59 (9.2)	134 (10.5)		
<b>Marital status</b>				5.321	0.070
Single	628 (98.1)	614 (95.6)	1242 (97.0)		
Married	4 (0.6)	9 (1.4)	13 (1.0)		
Others	8 (1.3)	17 (2.7)	25 (2.0)		
<b>Religion</b>				3.516	0.061
Christianity	240 (37.5)	208 (32.5)	448 (35.0)		
Islam	400 (62.5)	432 (67.5)	832 (65.0)		
<b>Who respondents lived with</b>				6.341	0.092
Parents	532 (83.1)	563 (88.0)	1095 (88.5)		
Other relatives	87 (13.6)	63 (9.8)	150 (11.7)		
Alone	14 (2.2)	8 (1.3)	22 (1.7)		
Others	7 (1.1)	6 (0.9)	13 (1.0)		
<b>Respondents' Family Characteristics</b>					
<b>Type of family</b>				3.529	0.060
Polygamous	181 (28.3)	212 (33.1)	393 (30.7)		
Monogamous	459 (71.7)	428 (66.9)	887 (69.3)		
<b>Respondents' marital status</b>				5.321	0.070
Single	628 (98.1)	614 (95.6)	1242 (97.0)		

Married	4 (0.6)	9 (1.4)	13 (1.0)		
Others	8 (1.3)	17 (2.7)	25 (2.0)		
<b>Parents marital status</b>				6.679	0.083
Married	542 (84.7)	569 (88.9)	1111 (86.8)		
Separated	65 (10.2)	40 (6.3)	105 (8.2)		
Widowed	22 (3.4)	21 (3.3)	43 (3.4)		
Divorced	11 (1.7)	10 (1.6)	21 (1.6)		
<b>Father's employment status</b>				4.138	0.126
Unemployed	28 (4.4)	44 (6.9)	72 (5.6)		
Self employed	374 (58.4)	354 (55.3)	728 (56.9)		
Civil servant	238 (37.2)	242 (37.8)	480 (37.5)		
<b>Mother's employment status</b>				4.850	0.088
Unemployed	44 (6.9)	46 (7.2)	90 (7.0)		
Self employed	333 (52.0)	369 (57.7)	702 (54.8)		
Civil servant	263 (41.1)	225 (35.1)	488 (38.1)		
<b>Number of siblings</b>				7.804	0.050
0	16 (2.5)	4 (0.6)	20 (1.6)		
1-3	255 (39.8)	252 (39.4)	507 (39.6)		
4-6	310 (48.4)	317 (49.5)	627 (49.0)		
7-18	59 (9.2)	67 (10.5)	126 (9.8)		
<b>Sexuality education at home</b>	475 (74.2)	468 (73.1)	337 (26.3)	0.197	0.657
<b>Sexuality education in school</b>	538 (84.1)	524 (81.1)	1062 (83.0)	1.084	0.298

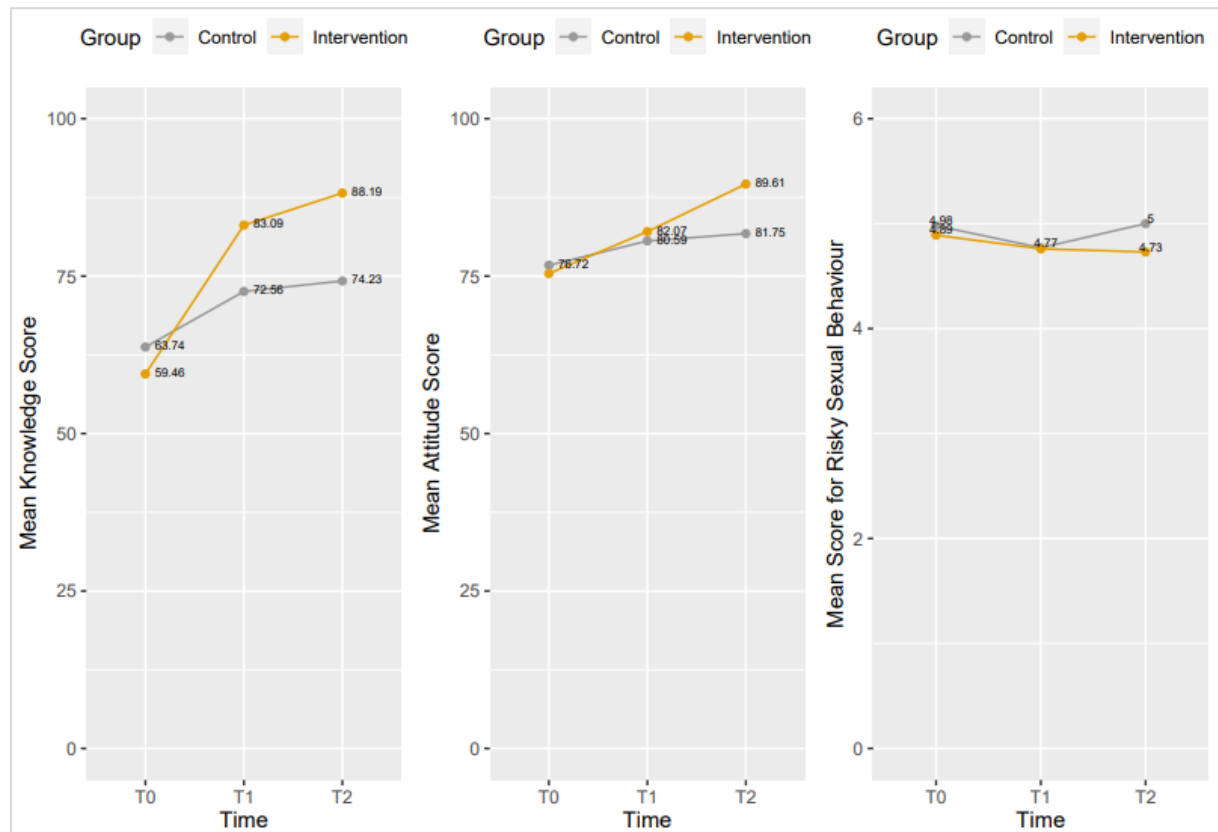
$\chi^2$  - Pearson's Chi square test; t- independent t test; level of significance- p value <0.05



**Figure 1:** Consort flowchart for the trial

Adverse events: nil

## Outcome measures



**Figure 2:** Effect of the mHealth-based Intervention on Knowledge, Attitude and Sexual Behaviour in the control and intervention groups: Repeated Measures graphical illustration

**Table 3:** Effect of the mHealth-based Intervention on Knowledge, Attitude and Sexual Behaviour in the control and intervention groups: Repeated Measures ANOVA estimates

		Control Group				Intervention group			
		Mean $\pm$ SD	F Ratio	p value	$\eta p^2$	Mean $\pm$ SD	F Ratio	p value	$\eta p^2$
<b>SRH Knowledge</b>			21.459	0.073	0.014		2117.252	<0.001	0.776
	T <sub>0</sub>	63.74 $\pm$ 10.10				59.46 $\pm$ 13.99			
	T <sub>1</sub>	72.56 $\pm$ 13.76				83.09 $\pm$ 12.98			
	T <sub>2</sub>	74.23 $\pm$ 14.03				88.19 $\pm$ 9.45			
<b>SRH Attitude</b>			12.203	0.142	0.012		148.493	<0.001	0.195
	T <sub>0</sub>	76.72 $\pm$ 17.15				75.46 $\pm$ 15.87			
	T <sub>1</sub>	80.59 $\pm$ 15.23				82.07 $\pm$ 20.46			
	T <sub>2</sub>	81.75 $\pm$ 14.80				89.61 $\pm$ 10.19			
<b>Risky Sexual Behaviour</b>			5.769	0.572	0.009		0.558	0.572	0.001
	T <sub>0</sub>	4.98 $\pm$ 15.50				4.89 $\pm$ 15.87			
	T <sub>1</sub>	4.77 $\pm$ 14.87				4.76 $\pm$ 15.50			
	T <sub>2</sub>	5.01 $\pm$ 12.78				4.73 $\pm$ 15.48			

SD: Standard deviation;  $\eta p^2$ : Partial eta square; level of statistical significance -  $p < 0.05$

**Table 4:** Univariate analysis of sociodemographic factors associated with respondents' SRH Knowledge, Attitude and SRB, post Intervention

Variable	Knowledge		Attitude		Behaviour	
	Fair (%)	Good (%)	Negative (%)	Positive (%)	Risky (%)	Protective (%)
	n = 26	n = 587	n = 1	n = 612	n = 55	n = 558
<b>Age group (years)</b>						
12 – 14	7 (3.4)	197 (96.6)	0	204 (100.0)	14 (6.9)	190 (93.1)
15 – 17	19 (5.3)	340 (94.7)	0	359 (100.0)	25 (7.0)	334 (93.0)
>17	0	50 (100)	1 (2.0)	49 (98.0)	16 (32.0)	34 (68.0)
	F = 3.521	$\rho = 0.172$	F = 11.278	$\rho = 0.003$	$\chi^2 = 35.348$	$\rho = <0.001$
<b>Gender</b>						
Female	7 (2.2)	305 (97.8)	0	312 (100)	10 (3.2)	302 (96.8)
Male	19 (6.3)	282 (93.7)	1 (0.3)	300 (99.7)	45 (15.0)	256 (85.0)
	$\chi^2 = 6.244$	$\rho = 0.012$	F = 1.038	$\rho = 0.308$	$\chi^2 = 23.102$	$\rho = <0.001$
<b>School type</b>						
Public	23 (5.3)	411 (94.7)	1 (0.2)	433 (99.8)	35 (8.1)	399 (91.1)
Private	0	179 (100.0)	0	179 (100.0)	20 (11.2)	159 (88.8)
	F = 9.693	$\rho = 0.001$	F = 0.413	$\rho = 0.520$	$\chi^2 = 1.500$	$\rho = 0.221$
<b>Class</b>						
SS 1	10 (4.8)	200 (95.2)	0	211 (100.0)	10 (4.7)	201 (95.3)
SS 2	13 (1.6)	195 (98.4)	0	210 (100.0)	29 (13.8)	181 (86.2)
SS 3	3 (4.2)	187 (95.8)	1 (0.5)	191 (99.5)	16 (8.3)	176 (91.7)
	F = 5.477	$\rho = 0.065$	F = 2.196	$\rho = 0.334$	$\chi^2 = 10.741$	$\rho = 0.004$
<b>Subject combination</b>						
Science	6 (2.6)	223 (97.4)	0	225 (100.0)	19 (8.4)	206 (91.6)
Art	13 (5.9)	209 (94.1)	1 (0.4)	229 (99.6)	22 (9.6)	208 (90.4)
Commercial	7 (4.3)	155 (95.7)	0	158 (100.0)	14 (8.9)	144 (91.1)
	$\chi^2 = 2.515$	$\rho = 0.284$	F = 2.86	$\rho = 0.239$	$\chi^2 = 0.178$	$\rho = 0.915$
<b>Marital status</b>						
Single	25 (4.1)	582 (95.9)	1 (0.2)	606 (99.8)	52 (8.6)	555 (91.4)
Married	0	2 (100.0)	0	2 (100.0)	1 (50.0)	1 (50.0)
Others	1 (25.0)	3 (75.0)	0	4 (100.0)	1 (25.0)	3 (75.0)
	F = 4.355	$\rho = 0.113$	F = 0.01	$\rho = 0.995$	$\chi^2 = 5.574$	$\rho = 0.062$
<b>Tribe</b>						
Yoruba	22 (4.2)	500 (95.8)	1 (0.2)	521 (99.8)	41 (7.9)	481 (92.1)
Hausa	0	30 (100.0)	0	30 (100.0)	4 (13.3)	26 (86.7)
Igbo	0	15 (100.0)	0	15 (100.0)	2 (13.3)	13 (86.7)
Others	4 (8.7)	42 (91.3)	0	46 (100.0)	8 (17.4)	38 (82.6)
	F = 4.241	$\rho = 0.237$	F = 0.175	$\rho = 0.982$	$\chi^2 = 5.839$	$\rho = 0.119$
<b>Religion</b>						
Christianity	10 (5.1)	186 (94.9)	0	196 (100.0)	16 (8.2)	180 (91.8)
Islam	16 (3.8)	401 (96.2)	1 (0.2)	416 (99.8)	39 (9.4)	378 (90.6)
	$\chi^2 = 0.525$	$\rho = 0.469$	F = 0.471	$\rho = 0.493$	$\chi^2 = 0.124$	$\rho = 0.725$

<b>Type of family</b>						
Polygamous	6 (2.9)	201 (97.1)	1 (0.5)	206 (99.5)	15 (7.2)	192 (92.8)
Monogamous	20 (4.9)	386 (95.1)	0	406 (100.0)	40 (9.9)	366 (90.1)
	$\chi^2 = 1.388$	$p = 0.239$	$F = 1.965$	$p = 0.1609$	$\chi^2 = 1.14$	$p = 0.285$
<b>Parents marital status</b>						
Married	23 (4.2)	523 (95.8)	1 (0.2)	545 (99.8)	47 (8.6)	499 (91.4)
Separated	2 (5.1)	37 (94.9)	0	39 (94.9)	5 (12.8)	34 (87.2)
Widowed	1 (5.3)	18 (94.7)	0	19 (94.7)	2 (10.5)	17 (89.5)
Divorced	0	9 (100.0)	0	9 (100.0)	1 (11.1)	8 (88.9)
	$F = 0.524$	$p = 0.913$	$F = 0.123$	$p = 0.989$	$F = 0.902$	$p = 0.825$
<b>Father's employment status</b>						
Unemployed	0	28 (100.0)	0	28 (100.0)	9 (32.1)	19 (67.9)
Self-employed	20 (5.7)	330 (94.3)	0	350 (100.0)	37 (10.6)	313 (89.4)
Civil servant	6 (2.6)	229 (97.4)	1	234 (0.4)	9 (3.8)	226 (96.2)
	$F = 4.759$	$p = 0.092$	$F = 1.611$	$p = 0.446$	$\chi^2 = 27.111$	$p < 0.001$
<b>Mother's employment status</b>						
Unemployed	1 (4.8)	41 (95.2)	1 (2.4)	41 (97.6)	3 (7.1)	39 (92.9)
Self-employed	18 (5.0)	341 (95.0)	0	359 (100.0)	32 (8.9)	327 (91.1)
Civil servant	6 (2.8)	206 (97.2)	0	212 (100.0)	20 (9.4)	192 (90.6)
	$F = 1.988$	$p = 0.370$	$F = 1.895$	$p = 0.387$	$F = 0.229$	$p = 0.891$
<b>Number of siblings</b>						
0	0	4 (100)	0	4	0	4 (100.0)
1 – 3	10 (4.0)	237 (96.0)	1	246	19 (7.7)	228 (91.3)
4 – 6	12 (3.8)	300 (96.2)	0	312	28 (9.0)	284 (91.0)
$\geq 7$	4 (8.0)	46 (92.0)	0	50	5 (10.0)	45 (90.0)
	$F = 2.059$	$p = 0.560$	$F = 1.484$	$p = 0.685$	$F = 0.815$	$p = 0.845$
<b>Who respondent lives with</b>						
Parents	22 (4.0)	529 (96.0)	1 (0.2)	550 (99.8)	44 (8.0)	507 (92.0)
Other relatives	4 (7.7)	48 (92.3)	0	52 (100.0)	9 (17.3)	43 (82.7)
Alone	0	6 (100.0)	0	6 (100.0)	1 (16.7)	5 (83.3)
Others	0	4 (100.0)	0	4 (100.0)	1 (25.0)	3 (75.0)
	$F = 2.051$	$p = 0.562$	$F = 0.113$	$p = 0.990$	$F = 6.774$	$p = 0.079$
<b>Sex education at home</b>						
Yes	20 (4.4)	438 (95.6)	1 (0.2)	457 (99.8)	44 (9.6)	414 (90.4)
	$\chi^2 = 0.07$	$p = 0.791$	$F = 0.339$	$p = 0.560$	$\chi^2 = 0.893$	$p = 0.344$
<b>Sex education in school</b>						
Yes	23 (4.4)	496 (95.6)	1 (0.2)	518 (99.8)	42 (8.1)	477 (91.9)
	$F = 0.301$	$p = 0.583$	$F = 0.181$	$p = 0.671$	$\chi^2 = 3.208$	$p = 0.073$

$\chi^2$  - Pearson's Chi square test,  $F$  – Fisher's exact test, level of significance-  $p$  value  $< 0.05$