

Supplementary Material

S1: Sociodemographic characteristics of the DMagic participants at baseline (pre-intervention)

		Control	mHealth	PLA
Cluster Level				
Villages (clusters)		32	32	32
Mean village population aged ≥30 years (SD)		521 (189)	551 (152)	548 (225)
Mean number of households (SD)		269 (97)	282 (79)	285 (112)
Individual Level				
Total participants who completed the survey		4048	4071	4021
Age, Years	30-39	13 (34.4%)	132 (32.7%)	138 (34.5%)
	40-49	991 (24.5%)	1068 (26.2%)	992 (24.7%)
	50-59	767 (19.0%)	765 (18.8%)	761 (18.9%)
	60-100	899 (22.2%)	909 (22.3%)	880 (21.9%)
Gender	Male	1950 (48.2%)	1845 (45.3%)	1889 (47.0%)
	Female	2098 (51.8%)	2226 (54.7%)	2132 (53.0%)
Education	None	2116 (52.3%)	1950 (47.9%)	1905 (47.4%)
	Primary	921 (22.8%)	852 (20.9%)	1004 (25.0%)
	Secondary	989 (24.4%)	1231 (30.2%)	1086 (27.0%)
	Tertiary	22 (0.5%)	38 (0.9%)	26 (0.7%)
Literacy	Literate	1455 (35.9%)	1649 (40.5%)	1561 (38.8%)
	Illiterate	2593 (64.1%)	2422 (59.5%)	2460 (61.2%)
Marital Status	Not married	520 (12.9%)	497 (12.2%)	491 (12.2%)
	Married	3528 (87.2%)	3,574 (87.8%)	3530 (87.8%)
Religion	Muslim	3660 (90.4%)	3674 (90.3%)	3666 (91.2%)
	Other	388 (9.6%)	397 (9.8%)	355 (8.8%)
Occupation	Not working	2216 (54.8%)	2323 (57.1%)	2164 (53.8%)
	Manual Labour	1362 (33.7%)	1296 (31.8%)	1376 (34.2%)
	Non-manual labour	468 (11.6%)	452 (11.1%)	481 (12.0%)
Wealth Tertile	Most Poor	1401 (34.6%)	1523 (37.4%)	1124 (28.0%)
	Poor	1354 (33.5%)	1351 (33.2%)	1392 (34.6%)
	Least Poor	1293 (31.9%)	1197 (29.4%)	1505 (37.4%)
Total participants with baseline data for glycaemic status		4070	4063	4054
Glycaemic status	Normal	2860 (70.3%)	2816 (69.3%)	2801 (69.1%)
	Impaired Fasting Glucose	200 (4.9%)	186 (4.6%)	203 (5.0%)
	Impaired Glucose Tolerance	632 (14.7%)	655 (16.1%)	594 (14.7%)
	Diabetes	378 (9.3%)	406 (10.0%)	456 (11.3%)

S2: Sociodemographic and diabetic parameters among individuals exposed and not exposed to the DMagic mHealth intervention where exposure is defined as a person having ever received an mHealth message.

		Overall			Men			Women		
		Exposed n=2287	Not exposed n=1470	p-value	Exposed n=1184	Not exposed n=537	p-value	Exposed n=1103	Not exposed n=933	p-value
Gender	male	1184 (51.8%)	537 (36.5%)	<0.001						
	female	1103 (48.2%)	933 (63.5%)							
Age (years)	30-39	820 (35.9%)	325 (22.1%)	<0.001	395 (33.4%)	97 (18.1%)	<0.001	425 (38.5%)	228 (24.4%)	<0.001
	40-49	655 (28.6%)	350 (23.8%)		334 (28.2%)	121 (22.5%)		321 (29.1%)	229 (24.5%)	
	50-59	438 (19.2%)	351 (23.9%)		229 (19.3%)	118 (22.0%)		209 (19.0%)	233 (25.0%)	
	≥60	374 (16.4%)	444 (30.2%)		226 (19.1%)	201 (37.4%)		148 (13.4%)	243 (26.1%)	
Religion	Muslim	2035 (89.0%)	1311 (89.2%)	0.846	1034 (87.3%)	482 (89.8%)	0.150	1001 (88.9%)	829 (88.9%)	0.157
	Hindu	252 (11.0%)	159 (10.8%)		150 (12.7%)	55 (10.2%)		102 (9.3%)	104 (11.2%)	
Marital Status	Currently unmarried	174 (7.6%)	264 (18.0%)	p<0.001	24 (2.0%)	25 (4.7%)	0.002	150 (13.6%)	239 (25.6%)	<0.001
	Currently married	2113 (92.4%)	1206 (82.0%)		1160 (98.0%)	512 (95.3%)		953 (86.4%)	694 (74.4%)	
Education	None	1401 (61.3%)	1152 (78.4%)	<0.001	689 (58.2%)	395 (73.6%)	<0.001*	749 (64.6%)	757 (81.1%)	<0.001*
	Primary	675 (29.5%)	266 (18.1%)		346 (29.2%)	108 (20.1%)		329 (29.8%)	158 (16.9%)	
	Secondary	173 (7.6%)	40 (2.7%)		120 (10.1%)	25 (4.7%)		53 (4.8%)	15 (1.6%)	
	Tertiary	38 (1.7%)	12 (0.8%)		29 (2.5%)	9 (1.7%)		9 (0.8%)	3 (0.3%)	
Occupation	Not working	1160 (50.7%)	1013 (68.9%)	<0.001	90 (7.6%)	96 (17.9%)	<0.001	1070 (97.0%)	917 (98.3%)	0.080
	Manual labour	857 (37.5%)	388 (26.4%)		843 (71.2%)	843 (71.2%)		14 (1.3%)	10 (1.1%)	
	Non-manual labour	370 (11.8%)	69 (4.5%)		251 (21.2%)	251 (21.2%)		19 (1.7%)	6 (0.6%)	
Wealth Tertiles	Most poor	822 (35.9%)	387 (26.3%)	<0.001	431 (36.4%)	154 (28.7%)	0.004	391 (35.5%)	233 (25.0%)	<0.001
	Poor	784 (34.3%)	529 (36.0%)		439 (37.1%)	210 (39.1%)		345 (31.3%)	319 (34.2%)	
	Least poor	681 (29.8%)	554 (37.7%)		314 (26.5%)	173 (32.2%)		367 (33.3%)	481 (40.8%)	
Self-reported diabetes status	Not reported	2191 (95.8%)	1605 (97.0%)	0.094	1137 (96.0%)	527 (98.1%)	0.024	1054 (95.6%)	897 (96.1%)	0.512
	Reported	96 (4.2%)	49 (3.0%)		47 (4.0%)	10 (1.9%)		49 (4.4%)	36 (3.9%)	

p-value from X² test

*p-value from Fisher's Exact test

S3: Impact of mHealth and PLA on secondary outcomes stratified by gender, age groups and wealth tertiles. Measures of effect are beta coefficients where the measure is continuous (eg, mean or median) and are odds ratios where the measure is %.

Secondary Outcomes		Gender		Age Group (years)				Wealth Tertiles		
		Male	Female	30-39	40-49	50-59	≥60	1 (most poor)	2	3 (least poor)
Mean diastolic blood pressure (SD) (mmHg)	control	74.27 (10.49)	73.64 (11.76)	72.80 (10.49)	73.49 (11.00)	74.61 (11.60)	75.67 (11.91)	75.34 (11.47)	73.58 (11.21)	73.10 (10.78)
	mHealth	73.06 (10.25)	72.68 (11.25)	71.46 (10.22)	72.84 (10.57)	74.59 (11.47)	73.90 (11.61)	74.29 (11.16)	72.62 (10.70)	71.76 (10.44)
	PLA	74.19 (10.97)	73.42 (11.35)	71.83 (10.25)	74.40 (11.22)	73.83 (10.78)	74.61 (11.60)	74.63 (11.66)	72.72 (10.77)	73.78 (10.86)
Mean diastolic blood pressure coefficient (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	-1.23 (-2.73, 0.27) p=0.109	-1.00 (-2.58, 0.56) p=0.214	-1.21 (-2.81, 0.38) p=0.136	-0.78 (-2.40, 0.83) p=0.340	-0.55 (-2.39, 1.29) p=0.558	-1.70 (-3.53, 0.13) p=0.069	-1.00 (-2.81, 0.81) p=0.278	-0.75 (-2.44, 0.95) p=0.388	-0.94 (-6.33, 4.46) p=0.734
	PLA	-0.17 (-1.76, 1.42) p=0.835	-0.34 (-1.97, 1.29) p=0.684	-1.02 (-2.71, 0.65) p=0.229	0.65 (-1.08, 2.38) p=0.463	0.73 (-1.01, 2.48) p=0.410	-1.00 (-2.99, 0.99) p=0.321	-0.65 (-2.43, 1.12) p=0.470	0.68 (-2.60, 1.24) p=0.487	0.29 (-1.34, 1.93) p=0.728
Mean systolic blood pressure (SD) (mmHg)	control	125.32 (19.58)	125.60 (21.85)	120.11 (15.63)	122.43 (18.41)	127.90 (20.19)	127.97 (19.44)	127.17 (20.67)	124.80 (20.50)	125.54 (20.18)
	mHealth	123.37 (17.78)	125.30 (21.68)	118.56 (14.70)	121.67 (17.82)	126.21 (20.52)	126.29 (20.57)	126.83 (21.27)	124.14 (19.47)	122.49 (19.19)
	PLA	125.30 (18.36)	125.33 (20.67)	118.30 (14.60)	124.08 (18.50)	126.51 (20.13)	126.53 (20.19)	126.48 (19.87)	123.65 (18.75)	125.54 (20.18)

Mean systolic blood pressure coefficient (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	-1.90 (-4.42, 0.60) p=0.103	-0.31 (-2.96, 2.33) p=0.816	-1.53 (-3.93, 0.87) p=0.210	-0.80 (-3.44, 1.84) p=0.551	0.01 (-3.25, 3.26) p=0.996	-2.47 (-5.92, 0.97) p=0.160	-0.32 (-3.39, 2.76) p=0.839	-0.130 (-2.76, 2.50) p=0.923	-2.32 (-4.97, -0.34) p=0.087
	PLA	-0.02 (-2.50, 2.47) p=0.990	-0.301 (-2.86, 2.26) p=0.818	-1.89 (-4.13, 0.34) p=0.097	1.44 (-1.14, 4.03) p=0.273	1.76 (-1.38, 4.89) p=0.273	-1.55 (-5.43, 2.34) p=0.435	-0.72 (-3.29, 1.85) p=0.584	-0.84 (-3.68, 2.00) p=0.563	0.63 (-2.25, 3.51) p=0.668
Hypertension n(%)	control	374 (20.8%)	524 (25.9%)	150 (11.9%)	179 (17.4%)	206 (29.3%)	363 (43.9%)	312 (27.5%)	257 (20.6%)	321 (23.0%)
	mHealth	302 (17.4%)	551 (26.7%)	122 (10.6%)	175 (17.3%)	218 (27.2%)	338 (40.5%)	333 (27.7%)	267 (20.5%)	251 (19.8%)
	PLA	381 (22.3%)	565 (27.6%)	133 (11.0%)	233 (23.3%)	222 (30.0%)	358 (44.2%)	423 (28.6%)	245 (20.7%)	274 (25.4%)
Hypertension OR (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	0.80 (0.62, 1.04) p=0.093	1.04 (0.85, 1.28) p=0.688	0.90 (0.65, 1.23) p=0.499	0.99 (0.75, 1.3) p=0.964	0.91 (0.67, 1.23) p=0.534	0.87 (0.68, 1.12) p=0.274	0.99 (0.76, 1.29) p=0.945	1.04 (0.80, 1.35) p=0.787	0.84 (0.67, 1.04) p=0.111
	PLA	1.08 (0.84, 1.43) p=0.501	1.08 (0.85, 1.36) p=0.543	0.92 (0.65, 1.29) p=0.614	1.42 (1.06, 1.90) p=0.018	1.06 (0.76, 1.48) p=0.737	1.03 (0.76, 1.41) p=0.870	1.02 (0.77, 1.35) p=0.912	1.04 (0.78, 1.38) p=0.789	1.11 (0.84, 1.47) p=0.454
Hypertension control (among those with known hypertension) n (%)	control	34 (36.2%)	56 (34.4%)	14 (38.9%)	21 (38.9%)	24 (40.7%)	31 (28.7%)	41 (35.7%)	23 (34.3%)	26 (34.7%)
	mHealth	36 (39.1%)	85 (38.6%)	14 (50.0%)	30 (49.2%)	37 (38.5%)	40 (31.5%)	58 (37.9%)	29 (34.9%)	34 (44.7%)
	PLA	37 (31.4%)	92 (43.8%)	18 (50.0%)	41 (49.4%)	28 (32.6%)	41 (34.2%)	75 (40.1%)	32 (41.6%)	22 (34.4%)

Hypertension control (among those with known hypertension) OR (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	0.99 (0.51, 1.93) p=0.984	1.16 (0.74, 1.84) p=0.519	1.67 (0.60, 4.62%) p=0.327	1.49 (0.70, 3.17) p=0.303	0.84 (0.36, 1.95) p=0.679	1.04 (0.59, 1.86) p=0.882	1.03 (0.62, 1.71) p=0.916	1.03 (0.52, 2.04) p=0.925	1.34 (0.68, 2.64) p=0.401
	PLA	0.71 (0.35, 1.43) p=0.333	1.55 (0.93, 2.57) p=0.090	1.72 (0.48, 6.18) p=0.403	1.55 (0.76, 3.15) p=0.229	0.74 (0.36, 1.53) p=0.422	1.20 (0.66, 2.16) p=0.554	1.10 (0.67, 1.81) p=0.706	1.40 (0.54, 3.61) p=0.486	0.91 (0.44, 1.89) p=0.801
Mean BMI (SD) (kg/m²)	control	21.63 (3.27)	22.18 (3.78)	22.75 (3.52)	22.34 (3.62)	21.57 (3.42)	20.45 (3.17)	22.99 (3.75)	21.77 (3.44)	21.18 (3.31)
	mHealth	21.43 (3.22)	22.23 (3.92)	22.50 (3.66)	22.25 (3.63)	21.53 (3.61)	20.83 (3.39)	22.89 (3.87)	21.60 (3.35)	21.18 (3.49)
	PLA	21.54 (3.23)	22.39 (3.91)	22.53 (3.53)	22.40 (3.64)	21.94 (3.74)	20.81 (3.43)	22.83 (3.88)	21.53 (3.38)	21.39 (3.37)
Mean BMI coefficient (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	-0.19 (-0.46, 0.74) p=0.157	0.05 (-0.25, 0.36) p=0.729	-0.21 (-0.55, 0.13) p=0.223	-0.09 (-0.40, 0.22) p=0.578	-0.02 (-0.46, 0.41) p=0.917	0.35 (0.01, 0.71) p=0.054	-0.51 (-0.36, 0.26) p=0.746	-0.13 (-0.48, 0.22) p=0.464	-0.04 (-0.30, 0.23) p=0.793
	PLA	-0.08 (-0.44, 0.29) p=0.671	0.22 (-0.11, 0.55) p=0.191	-0.22 (-0.60, 0.15) p=0.246	-0.34 (-0.34, 0.41) p=0.858	0.36 (-0.16, 0.87) p=0.174	0.36 (-0.04, 0.77) p=0.080	-0.12 (-0.52, 0.27) p=0.542	-0.20 (-0.58, 0.18) p=0.296	0.14 (-0.23, 0.51) p=0.468
Overweight or obese n(%)	control	559 (31.1%)	764 (37.8%)	546 (43.2%)	399 (38.8%)	208 (29.6%)	170 (20.6%)	528 (46.6%)	409 (32.8%)	369 (26.4%)
	mHealth	480 (27.7%)	782 (37.9%)	458 (39.8%)	372 (36.9%)	244 (30.4%)	188 (22.5%)	544 (45.2%)	394 (30.1%)	322 (25.4%)
	PLA	495 (29.0%)	828 (40.4%)	503 (41.7%)	394 (39.4%)	237 (32.1%)	189 (23.3%)	650 (43.9%)	350 (29.5%)	320 (29.7%)

Overweight or obese OR (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	0.85 (0.72, 0.99) p=0.040	1.01 (0.87, 1.17) p=0.927	0.89 (0.74, 1.06) p=0.185	0.93 (0.77, 1.11) p= 0.409	1.02 (0.81, 1.28) p=0.856	1.12 (0.84, 1.49) p=0.456	0.96 (0.81, 1.14) p=0.641	0.9 (0.74, 1.09) p=0.274	0.93 (0.78, 1.11) p=0.403
	PLA	0.91 (0.73, 1.13) p=0.398	1.12 (0.96, 1.30) p=0.156	0.95 (0.76, 1.18) p=0.625	1.02 (0.83, 1.25) p=0.876	1.09 (0.84, 1.42) p=0.525	1.20 (0.88, 1.63) p=0.250	0.90 (0.74, 1.11) p=0.327	0.85 (0.67, 1.08) p=0.178	1.1 (0.88, 1.42) p=0.366
Abdominal Obesity (waist:hip ratio >0.9 for men and >0.85 for women) n(%)	control	1450 (80.7%)	465 (23.0%)	327 (25.9%)	281 (27.3%)	195 (27.8%)	205 (24.8%)	319 (28.4%)	286 (23.2%)	394 (28.2%)
	mHealth	1429 (82.5%)	505 (24.46%)	292 (25.4%)	289 (28.6%)	246 (30.6%)	203 (24.3%)	342 (28.4%)	304 (23.2%)	382 (30.2%)
	PLA	1428 (83.7%)	455 (22.2%)	314 (26.0%)	316 (31.6%)	217 (29.4%)	205 (25.3%)	433 (29.2%)	301 (25.4%)	315 (29.2%)
Abdominal Obesity OR (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	1.14 (0.85, 1.52) p=0.395	1.05 (0.75, 1.47) p=0.780	0.85 (0.53, 1.36) p=0.503	1.08 (0.70, 1.65) p=0.732	1.03 (0.63, 1.70) p=0.899	0.97 (0.61, 1.53) p=0.900	0.94 (0.69, 1.28) p=0.680	1.01 (0.67, 1.54) p=0.956	0.99 (0.57, 1.71) p=0.961
	PLA	1.22 (0.89, 1.68) p=0.224	0.96 (0.68, 1.35) p=0.815	0.85 (0.53, 1.36) p=0.494	1.24 (0.80, 1.95) p=0.336	1.17 (0.72, 1.90) p=0.529	1.18(0.73, 1.93) p=0.499	0.98 (0.66, 1.46) p=0.921	1.13 (0.73, 1.77) p=0.577	1.14 (0.69, 1.88) p=0.608
Median lnEQ5D‡ (IQR)	control	0.85 (0.73, 1.00)	0.73 (0.73, 0.85)	0.85 (0.73, 1.00)	0.85 (0.73, 1.00)	0.73 (0.73, 0.85)	0.73 (0.59, 0.85)	0.85 (0.73, 1.00)	0.85 (0.73, 1.00)	0.73 (0.69, 0.85)
	mHealth	0.85 (0.73, 1.00)	0.73 (0.73, 0.85)	0.85 (0.73, 1.00)	0.85 (0.73, 1.00)	0.80 (0.73, 1.00)	0.73 (0.62, 0.85)	0.85 (0.73, 1.00)	0.85 (0.73, 1.00)	0.80 (0.73, 1.00)
	PLA	0.85 (0.73, 1.00)	0.73 (0.73, 0.85)	0.85 (0.73, 1.00)	0.81 (0.73, 1.00)	0.73 (0.73, 0.85)	0.73 (0.59, 0.85)	0.82 (0.73, 1.00)	0.85 (0.73, 1.00)	0.73 (0.73, 0.85)

Median InEQ5D[‡] coefficient (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	0.00 (-0.05, 0.05) p=0.860	0.05 (-0.01, 0.11) p=0.078	0.02 (-0.02, 0.06) p=0.359	0.04 (-0.01, 0.10) p=0.145	0.05 (-0.01, 0.11) p=0.133	0.02 (-0.07, 0.11) p=0.639	0.00 (-0.06, 0.05) p=0.876	0.03 (-0.03, 0.08) p=0.333	0.05 (0.00, 0.10) p=0.033
	PLA	-0.00 (-0.05, 0.04) p=0.906	-0.01 (-0.07, 0.05) p=0.717	-0.01 (-0.05, 0.04) p=0.783	0.00 (-0.05, 0.06) p=0.877	-0.01 (-0.07, 0.05) p=0.817	-0.02 (-0.10, 0.06) p=0.628	-0.02 (-0.07, 0.04) p=0.561	0.00 (-0.05, 0.05) p=0.972	-0.02 (-0.73, 0.02) p=0.321
Mean self-rated health (SD)	control	77.27 (15.61)	72.08 (16.13)	77.62 (14.34)	76.87 (14.34)	71.97 (15.35)	67.51 (17.77)	77.04 (15.03)	75.60 (15.99)	71.51 (16.56)
	mHealth	79.82 (15.32)	74.03 (16.06)	79.27 (15.15)	76.89 (15.04)	75.00 (15.08)	70.08 (16.65)	77.40 (15.83)	78.17 (15.79)	74.44 (16.11)
	PLA	80.24 (14.51)	76.01 (16.03)	83.51 (13.12)	79.48 (14.72)	78.31 (14.25)	70.24 (15.27)	80.09 (14.92)	78.03 (15.26)	74.89 (16.04)
Mean self-rated health coefficient (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	2.43 (-0.82, 5.69) p=0.143	1.92 (-1.04, 4.89) p=0.204	1.19 (-3.21, 5.61) p=0.595	0.44 (-3.40, 4.27) p=0.824	3.02 (-1.54, 7.58) p=0.195	2.92 (-1.67, 7.51) p=0.213	0.54 (-2.49, 3.58) p=0.725	2.26 (-1.13, 5.64) p=0.191	2.44 (-0.60, 5.37) p=0.115
	PLA	2.89 (-0.38, 6.17) p=0.083	3.83 (0.75, 6.93) p=0.015	5.72 (2.63, 8.81) p<0.001	2.50 (-0.93, 5.94) p=0.153	6.34 (1.54, 11.13) p=0.009	2.86 (-1.25, 6.97) p=0.172	2.48 (-0.65, 5.60) p=0.120	2.34 (-1.16, 5.85) p=0.190	3.55 (0.76, 6.34) p=0.013
Median SRQ20 (IQR) among those with self-reported diabetes	control	7.0 (4.0,10.0)	9.0 (7.0,13.0)	7.0 (6.0, 11.0)	9.0 (9.0, 9.0)	12.0 (4.0,20.0)	9.5 (5.0, 14.0)	8.0 (4.0,11.0)	9.0 (8.0,11.0)	10.0 (7.0,14.0)
	mHealth	5.5 (4.0,9.0)	7.0 (4.0,9.0)	na	3.0 (0.0,5.0)	8.5 (4.0,11.0)	2.0 (0.0,5.5)	6.0 (3.5,9.0)	5 (3.0,8.0)	9.0 (5.0,11.0)
	PLA	8.0 (6.0,11.0)	7.5 (4.0,13.0)	9.5 (8.0,11.0)	4.0 (0.0,15.0)	10.5 (3.0,18.0)	6.5 (0.0,13.0)	7 (4.0,11.0)	9.5 (5.0,13.0)	11.0 (4.0,14.0)

Median InSRQ20 coefficient (95%CI)	control	REF	REF	Insufficient observations for regression analysis				REF	REF	REF
	mHealth	-0.12 (-0.43, 0.20) p=0.460	-0.16 (-0.37, 0.05) p=0.141					-0.10 (-0.40, 0.20) p=0.514	-0.51 (-0.80, -0.21) p=0.001	-0.04 (-0.32, 0.24) p=0.797
	PLA	0.13 (-0.20, 0.47) p=0.430	-0.04 (-0.28, 0.19) p=0.734					0.15 (-0.08, 0.37) p=0.202	-0.15 (-0.49, 0.19) p=0.377	-0.15 (-0.49, 0.19) p=0.377
Ability to report ≥1 valid causes of diabetes n (%)	control	1044 (58.1%)	1105 (54.6%)	757 (59.9%)	604 (58.8%)	394 (56.1%)	394 (47.6%)	775 (68.4%)	734 (58.8%)	640 (45.8%)
	mHealth	1356 (78.3%)	1610 (78.0%)	956 (83.1%)	841 (83.4%)	622 (77.5%)	547 (65.6%)	1025 (85.1%)	1037 (79.1%)	904 (71.4%)
	PLA	1634 (95.7%)	1966 (95.9%)	1170 (96.9%)	967 (96.6%)	714 (96.6%)	749 (92.5%)	1439 (97.2%)	1139 (96.1%)	1022 (94.7%)
Ability to report ≥1 valid causes of diabetes OR (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	3.49 (1.82, 6.71) p<0.001	3.86 (2.19, 6.80) p<0.001	3.64 (2.00, 6.65) p<0.001	4.13 (2.24, 7.59) p<0.001	3.62 (1.98, 6.62) p<0.001	2.63 (1.50, 4.63) p<0.001	3.14 (1.77, 5.55) p<0.001	3.34 (1.81, 6.14) p<0.001	3.68 (1.98, 6.84) p<0.001
	PLA	32.96 (15.9, 68.48) p<0.001	42.27 (19.95, 89.56) p<0.001	38.10 (17.35, 83.68) p<0.001	52.67 (20.45, 125.57) p<0.001	40.51 (18.75, 87.53) p<0.001	23.70 (11.67, 48.15) p<0.001	30.61 (14.80, 63.35) p<0.001	26.34 (12.40, 5.96) p<0.001	37.66 (18.12, 78.30) p<0.001
Ability to report ≥1 valid symptoms of diabetes n (%)	control	1156 (64.3%)	1291 (63.8%)	853 (67.5%)	683 (66.4%)	451 (64.3%)	460 (55.6%)	866 (76.4%)	831 (66.6%)	750 (53.7%)
	mHealth	1456 (84.1%)	1734 (84.0%)	1011 (87.8%)	886 (87.8%)	666 (82.9%)	627 (75.2%)	1089 (90.5%)	1102 (84.1%)	999 (78.9%)
	PLA	1634 (95.7%)	1979 (96.5%)	1174 (97.3%)	969 (96.8%)	713 (96.5%)	757 (93.5%)	1441 (97.3%)	1143 (96.5%)	1029 (95.4%)

Ability to report ≥ 1 valid symptoms of diabetes OR (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	4.28 (1.85, 9.93) p<0.001	4.07 (2.09, 7.90) p<0.001	4.08 (2.01, 8.31) p<0.001	4.60 (2.22, 9.56) p<0.001	3.72 (1.80, 7.67) p<0.001	3.29 (1.62, 6.67) p<0.001	3.43 (1.71, 6.86) p<0.001	3.59 (1.65, 7.80) p<0.001	4.47 (2.06, 9.68) p<0.001
	PLA	22.82 (10.12, 51.48) p<0.001	31.85 (13.88, 73.11) p<0.001	28.46 (12.38, 65.53) p<0.001	34.11 (13.26, 87.72) p<0.001	24.92 (10.89, 57.01) p<0.001	19.63 (9.04, 42.06) p<0.001	20.34 (8.86, 46.68) p<0.001	21.12 (8.71, 51.17) p<0.001	29.00 (13.36, 62.96) p<0.001
Ability to report ≥ 1 valid complications of diabetes n (%)	control	1049 (58.4%)	1107 (54.7%)	744 (58.9%)	598 (58.2%)	403 (57.4%)	411 (49.7%)	788 (69.6%)	726 (58.2%)	642 (45.7%)
	mHealth	1395 (80.5%)	1674 (81.1%)	972 (84.5%)	866 (85.8%)	641 (79.8%)	590 (70.7%)	1061 (88.1%)	1054 (80.4%)	954 (75.3%)
	PLA	1631 (95.6%)	1973 (96.2%)	1172 (97.1%)	964 (96.3%)	714 (96.6%)	754 (93.0%)	1434 (96.8%)	1143 (96.5%)	1027 (95.2%)
Ability to report ≥ 1 valid complications of diabetes OR (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	4.92 (2.16, 11.19) p<0.001	5.46 (2.75, 10.85) p<0.001	4.72 (2.26, 9.86) p<0.001	6.37 (3.11, 13.06) p<0.001	4.47 (2.25, 8.85) p<0.001	3.65 (1.85, 7.20) p<0.001	4.23 (2.27, 7.88) p<0.001	4.75 (2.17, 9.65) p<0.001	4.58 (2.17, 9.65) p<0.001
	PLA	34.59 (15.93, 74.09) p<0.001	46.26 (21.43, 99.89) p<0.001	47.15 (19.74, 112.64) p<0.001	49.63 (20.25, 121.63) p<0.001	37.60 (18.25, 77.49) p<0.001	25.14 (12.36, 51.14) p<0.001	29.79 (13.95, 63.60) p<0.001	35.61 (15.53, 81.64) p<0.001	45.26 (20.59, 99.45) p<0.001
Ability to report ≥ 1 valid complications of diabetes when prompted n (%)	control	1407 (78.3%)	1519 (75.1%)	991 (78.4%)	808 (78.6%)	542 (77.2%)	585 (70.7%)	983 (86.8%)	978 (78.4%)	965 (69.1%)
	mHealth	1523 (87.9%)	1829 (88.6%)	1049 (91.1%)	924 (91.6%)	701 (87.3%)	678 (81.3%)	1131 (93.9%)	1160 (88.5%)	1061 (83.7%)
	PLA	1664 (97.5%)	2013 (98.2%)	1191 (98.7%)	982 (98.1%)	725 (88.1%)	779 (96.2%)	1464 (98.9%)	1161 (98.0%)	1052 (97.5%)

Ability to report ≥ 1 valid complications of diabetes when prompted OR (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	3.46 (1.23, 9.70) p=0.018	4.26 (1.69, 10.73) p=0.002	3.54 (1.41, 8.87) p=0.007	3.63 (1.40, 9.38) p=0.008	3.09 (1.29, 7.40) p=0.011	2.66 (1.18, 6.00) p=0.018	2.80 (1.16, 6.73) p=0.022	3.17 (1.31, 7.64) p=0.010	3.28 (1.25, 8.67) p=0.016
	PLA	16.46 (6.69, 40.44) p<0.001	34.15 (11.74, 99.27) p<0.001	41.59 (12.69, 136.33) p<0.001	22.23 (7.89, 62.69) p<0.001	24.76 (9.81, 62.54) p<0.001	14.47 (6.45, 32.46) p<0.001	18.85 (6.99, 50.82) p<0.001	13.89 (5.71, 33.76) p<0.001	28.07 (10.50, 75.01) p<0.001
Ability to report ≥ 1 valid ways to prevent diabetes n (%)	control	1049 (58.4%)	1107 (54.7%)	904 (71.5%)	720 (70.0%)	486 (69.2%)	511 (61.8%)	892 (78.7%)	889 (71.2%)	840 (60.1%)
	mHealth	1395 (80.5%)	1674 (81.1%)	1021 (88.7%)	909 (90.1%)	697 (86.8%)	652 (78.2%)	1106 (91.9%)	1144 (87.3%)	1029 (81.2%)
	PLA	1,631 (95.6%)	1,973 (96.3%)	1157 (95.9%)	952 (95.1%)	704 (95.3%)	749 (92.5%)	1410 (95.2%)	1129 (95.3%)	1023 (94.8%)
Ability to report ≥ 1 valid ways to prevent diabetes OR (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	4.00 (1.79, 8.92) p=0.001	4.40 (2.25, 8.63) p<0.001	3.78 (1.75, 8.17) p=0.001	5.27 (2.58, 10.74) p<0.001	4.25 (2.07, 8.72) p<0.001	2.96 (1.55, 5.65) p=0.001	3.67 (1.90, 7.10) p<0.001	3.90 (1.82, 8.34) p<0.001	3.85 (1.84, 8.04) p<0.001
	PLA	8.62 (4.44, 16.72) p<0.001	15.63 (7.30, 33.47) p<0.001	10.69 (5.37, 21.26) p<0.001	11.77 (5.88, 23.59) p<0.001	11.78 (6.01, 23.10) p<0.001	11.05 (5.68, 21.52) p<0.001	7.97 (3.97, 16.01) p<0.001	8.68 (4.26, 17.70) p<0.001	16.93 (8.70, 32.95) p<0.001
Ability to report ≥ 1 valid ways to control diabetes n (%)	control	1312 (73.0%)	1477 (73.0%)	971 (76.8%)	769 (74.8%)	518 (73.9%)	531 (65.1%)	935 (92.5%)	941 (75.4%)	913 (65.4%)
	mHealth	1528 (88.2%)	1811 (87.7%)	1042 (90.5%)	918 (91.0%)	714 (88.9%)	665 (79.7%)	1115 (92.6%)	1167 (89.0%)	1057 (83.4%)
	PLA	1620 (94.9%)	1953 (95.3%)	1159 (96.0%)	959 (95.8%)	707 (95.7%)	748 (92.4%)	1414 (95.5%)	1135 (95.8%)	1024 (94.9%)

Ability to report ≥ 1 valid ways to control diabetes OR (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	3.68 (1.67, 8.11) p=0.001	3.70 (1.90, 7.23) p<0.001	3.28 (1.58, 6.80) p=0.001	4.29 (2.08, 8.85) p<0.001	4.44 (1.97, 10.05) p<0.001	2.98 (1.59, 5.58) p=0.001	3.08 (1.58, 6.05) p<0.001	3.68 (1.68, 8.06) p<0.001	3.75 (1.74, 8.12) p<0.001
	PLA	9.22 (4.42, 19.23) p<0.001	10.25 (4.89, 21.51) p<0.001	8.41 (3.78, 18.70) p<0.001	10.59 (4.98, 22.49) p<0.001	10.68 (4.69, 24.31) p<0.001	9.34 (4.91, 17.75) p<0.001	6.12 (2.79, 13.40) p<0.001	8.62 (4.12, 18.03) p<0.001	14.45 (6.84, 30.52) p<0.001
Diabetes control among those with known diabetes n (%)	control	13 (43.3%)	20 (35.7%)	5 (50.0%)	4 (20.0%)	8 (33.3%)	16 (50.0%)	14 (33.3%)	9 (52.9%)	10 (37.0%)
	mHealth	28 (51.9%)	29 (36.3%)	11 (37.9%)	11 (36.7%)	23 (56.1%)	12 (37.5%)	36 (52.9%)	13 (36.1%)	8 (26.7%)
	PLA	35 (66.0%)	33 (47.1%)	5 (50.0%)	18 (47.4%)	21 (65.6%)	24 (55.8%)	40 (55.6%)	19 (59.4%)	9 (47.4%)
Diabetes control among those with known diabetes OR (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	0.96(0.35, 2.62) p=0.940	1.13 (0.34, 3.77) p=0.839	0.58 (0.13, 2.77) p=0.503	1.92 (0.46, 8.01) p=0.369	2.07 (0.44, 9.80) p=0.361	0.43 (0.86, 2.18) p=0.311	2.71 (0.84, 8.83) p=0.096	0.34 (0.05, 2.24) p=0.263	0.50 (0.12, 2.17) p=0.358
	PLA	3.04 (0.76, 12.07) p=0.114	1.51 (0.64, 3.55) p=0.349	0.23(0.00, 243.22) p=0.674	3.75 (0.63, 22.25) p=0.146	4.36 (0.96, 19.73) p=0.056	1.17 (0.25, 5.46) p=0.844	3.09 (0.98, 9.73) p=0.054	1.25 (0.31, 4.94) p=0.754	1.29 (0.33, 4.97) p=0.714
Self-awareness of diabetic status among all those identified as diabetic by objective blood glucose test n (%)	control	37 (21.3%)	57 (18.0%)	11 (9.3%)	24 (17.8%)	25 (25.3%)	34 (24.6%)	45 (27.1%)	18 (13.4%)	31 (16.3%)
	mHealth	58 (28.2%)	86 (24.2%)	33 (25.0%)	30 (22.9%)	47 (32.6%)	34 (22.9%)	72 (31.3%)	39 (24.5%)	33 (19.2%)
	PLA	57 (46.7%)	80 (44.0%)	14 (24.2%)	43 (46.7%)	35 (56.5%)	45 (48.9%)	78 (49.4%)	34 (44.7%)	25 (35.7%)

Self-awareness of diabetic status among all those identified as diabetic by objective blood glucose test OR (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	1.28 (0.57, 2.86) p=0.550	1.40 (0.90, 2.19) p=0.134	3.42 (1.47, 7.94) p=0.004	1.16 (0.58, 2.33) p=0.667	1.59 (0.73, 3.45) p=0.232	0.85 (0.44, 1.66) p=0.636	1.12 (0.61, 2.04) p=0.724	2.16 (1.05, 4.46) p=0.036	1.26 (0.72, 2.19) p=0.420
	PLA	5.27 (2.15, 12.92) p<0.001	4.97 (2.71, 9.15) p<0.001	6.43 (1.38, 30.02) p=0.018	4.73 (2.16, 10.38) p<0.001	6.77 (2.15, 21.38) p=0.001	4.44 (1.88, 10.51) p=0.001	4.36 (1.85, 10.23) p=0.001	7.63 (3.07, 18.96) p<0.001	3.78 (1.70, 8.41) p=0.001
Receipt of professional treatment or advice for diabetes among those aware of their status n (%)	control	27 (73.0%)	51 (89.5%)	10 (90.9%)	18 (75.0%)	20 (80.0%)	30 (88.2%)	37 (82.2%)	17 (94.4%)	24 (77.4%)
	mHealth	49 (84.5%)	73 (84.9%)	25 (75.8%)	28 (93.3%)	40 (85.1%)	29 (85.3%)	63 (87.5%)	31 (79.5%)	28 (84.9%)
	PLA	51 (89.5%)	60 (75.0%)	10 (71.4%)	31 (72.1%)	30 (85.7%)	40 (88.9%)	67 (85.9%)	26 (76.5%)	18 (72.0%)
Receipt of professional treatment or advice for diabetes among those aware of their status OR (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	1.65 (0.33, 8.17) p=0.539	0.54 (0.16, 1.90) p=0.341	0.21 (0.01, 6.61) p=0.378	4.64 (0.79, 27.3) p=0.089	0.93 (0.13, 6.82) p=0.947	0.64 (0.14, 2.97) p=0.572	1.27 (0.42, 3.77) p=0.672	0.248 (0.03, 2.28) p=0.218	1.65 (0.43, 6.34) p=0.465
	PLA	3.51 (0.56, 22.24) p=0.181	0.36 (0.12, 1.11) p=0.074	1.03 (0.79, 1.35) p=0.830	0.81 (0.25, 2.69) p=0.734	1.71 (0.32, 9.15) p=0.531	0.88 (0.20, 3.91) p=0.863	1.53 (0.37, 6.34) p=0.560	0.178 (0.02, 1.75) p=0.139	0.845 (0.22, 3.21) p=0.805
Average ≥150 min physical activity per week n (%)	control	1523 (84.8%)	1394 (68.9%)	1030 (81.7%)	858 (83.5%)	538 (76.6%)	488 (59.0%)	888 (78.4%)	973 (78.0%)	1056 (75.6%)
	mHealth	1459 (84.2%)	1413 (68.4%)	980 (85.1%)	806 (80.0%)	601 (74.8%)	485 (58.2%)	899 (74.7%)	1028 (78.4%)	945 (74.6%)

	PLA	1426 (83.5%)	1385 (67.6%)	966 (80.0%)	796 (79.5%)	578 (78.2%)	471 (58.2%)	1103 (74.5%)	912 (77.0%)	796 (73.8%)
Average \geq150 min physical activity per week OR (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	0.96 (0.60, 1.54) p=0.863	1.04 (0.60, 1.81) p=0.897	1.23 (1.00, 2.57) p=0.568	1.04 (0.49, 2.21) p=0.926	0.965 (0.51, 1.77) p=0.884	0.97 (0.65, 1.46) p=0.882	0.81 (0.50, 1.30) p=0.375	1.03 (0.64, 1.65) p=0.903	1.10 (0.60, 2.02) p=0.750
	PLA	0.91 (0.54, 1.53) p=0.729	0.88 (0.52, 1.51) p=0.644	0.79 (0.40, 1.56) p=0.506	0.79 (0.41, 1.50) p=0.469	0.99 (0.55, 1.83) p=0.998	0.96 (0.64, 1.43) p=0.824	0.74 (0.48, 1.15) p=0.183	0.92 (0.57, 1.47) p=0.719	0.980 (0.54, 1.76) p=0.945
Mean number of portions of fruit and/or vegetables consumed per day (SD)	control	3.80 (1.79)	3.44 (1.47)	3.78 (1.78)	3.35 (1.44)	3.65 (1.66)	3.22 (1.52)	3.85 (1.73)	3.52 (1.59)	3.49 (1.59)
	mHealth	3.77 (1.75)	3.12 (1.45)	3.34 (1.76)	3.36 (1.54)	3.75 (1.71)	3.14 (1.47)	3.64 (1.70)	3.46 (1.54)	3.18 (1.62)
	PLA	4.10 (2.16)	3.85 (2.37)	4.14 (2.66)	4.04 (2.80)	3.81 (1.99)	3.39 (1.95)	4.63 (2.62)	3.71 (1.93)	3.33 (1.84)
Mean number of portions of fruit and/or vegetables consumed per day coefficient (95%CI)	control	REF	REF	REF	REF	REF	REF	REF	REF	REF
	mHealth	-0.04 (-0.48, 0.41) p=0.878	-0.32 (-0.69, 0.06) p=0.100	-0.48 (-1.06, 0.78) p=0.091	-0.18 (-0.64, 0.27) p=0.438	-0.08 (-0.36, 0.53) p=0.712	-0.23 (-0.50, 0.40) p=0.818	-0.28 (-0.70, 0.14) p=0.190	-0.13 (-0.52, 0.26) p=0.509	-0.16 (-0.52, 0.20) p=0.382
	PLA	0.25 (-0.23, 0.72) p=0.307	0.42 (-0.15, 0.98) p=0.152	0.43 (-0.23, 1.08) p=0.204	0.53 (-0.19, 1.25) p=0.151	0.28 (-0.22, 0.79) p=0.267	0.26 (-0.22, 0.75) p=0.290	0.41 (-0.10, 0.93) p=0.113	0.21 (-0.24, 0.66) p=0.365	0.15 (-0.26, 0.57) p=0.462

‡EuroQol-5D (EQ-5D) using UK tariffs

SRQ-20=Self-Reporting Questionnaire 20-Item

PLA=participatory learning and action