Supplementary tables

Table S1: Baseline socio demographic characteristics and anthropometric measurements of trial individuals (n=291)

Variables	Trial arms		Total
	Intervention	**Control**	
	(n=159)	**(n=132)**	**(n=291)**
	Freq (%)	**Freq (%)**	**Freq (%)**
Sociodemographic characteristics			
Residency			
Patan	149 (93.7)	126 (95.5)	275 (94.5)
Dhulikhel	10 (6.3)	6 (4.5)	16 (5.5)
Ethnicity			
Newar	134 (84.3)	112 (84.9)	246 (84.5)
Other*	25 (15.7)	20 (15.1)	45 (15.5)
Education			
More than high school	24 (15.1)	19 (14.4)	43 (14.8)
High school or below	79 (49.7)	78 (59.1)	157 (54.0)
No formal education	56 (35.2)	35 (26.5)	91(31.3)
Occupation			
Business	52 (32.7)	48 (36.4)	100 (34.4)
Housewife	53 (33.3)	46 (34.8)	99 (34.0)
Office	31 (19.5)	16 (12.1)	47 (16.2)
Other $^\Theta$	23 (14.5)	22 (16.7)	45 (15.5)
Marital Status			
Currently married	124 (78)	109 (82.6)	233 (80.1)
Not currently married ¥	35 (22)	23 (17.4)	58 (19.9)
Living status			
Living with family	154 (96.9)	129 (97.7)	283 (97.3)
Living alone	5 (3.1)	3 (2.3)	8 (2.8)
Annual household per capita income (USD) $^\$	(n=158)	(n=132)	(n=290)
##	862.3 (517.4-1293.4)	862.3 (597.4-1164.1)	862.3 (517.4-1293.4)
Above international poverty line $^\varsigma$	95 (60.1)	83 (62.9)	178 (61.4)
Below international poverty line	63 (39.9)	49 (37.1)	112 (38.6)
Anthropometric measurement			
	(n=101)	(n=87)	(n=188)
BMI (kg/m^2) #	28.8 (4.1)	28.9 (4.0)	28.8 (4.0)
BMI category €	(n=101)	(n=87)	(n=188)

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Normal (18.5-24.9)	17 (16.8)	10 (11.5)	27 (14.4)
Overweight (25-29.9)	47 (46.5)	47 (54.0)	94 (50.0)
Obese (≥30)	37 (36.6)	30 (34.5)	67 (35.6)
WHR category €€	(n=158)	(n=132)	(n=290)
High risk (F≥0.86, M≥1)	139 (87.9)	124 (93.9)	263 (90.7)
Moderate risk (F: 0.81-0.85, M: 0.96-0.99)	8 (5.1)	5 (3.8)	13 (4.5)
Low risk (F≤0.8, M≤0.95)	11 (7.0)	3 (2.3)	14 (4.8)

* Brahmin, Chhetri, Magar, Tamang, Sherpa, Rai, Limbu, Madhesi, Shah, Dalit

ᴼ Agriculture, Driver, Teacher, Student, Retired, Unemployed, other

¥ Never married, Separated, Widowed

$1 USD = NRs115.97 dated 8 Feb 2021

 # Mean (SD)

Median (IQR)

ᵡ International Poverty line is defined as annual equivalent of 1.9USD income per day = 80425 NRs per year.

€ as per WHO guideline for Standard BMI Category

€€ as per WHO guideline for WHR Category

BMI: Body mass index; Kg/m²: Kilogram per meter square; WHR: Waist-hip ratio; F: Female; M: Male

Table S2. Baseline lifestyle and clinical characteristics (n=291)

Variables	Trial arms		Total
	Intervention	**Control**	
	(n=159)	**(n=132)**	**(n=291)**
	Freq (%)	**Freq (%)**	**Freq (%)**
Lifestyle characteristics			
Smoking status	(n=158)	(n=132)	(n=290)
Current	14 (8.7)	19 (14.4)	33 (11.4)
Former	2 (1.3)	6 (4.5)	8 (2.8)
Non smoker	142 (89.9)	107 (81.1)	249 (85.9)
Alcohol status	(n=158)	(n=131)	(n=289)
Current	63 (39.8)	48 (36.6)	111 (38.4)
Former	5 (3.2)	4 (3.1)	9 (3.1)
Never	90 (57.0)	79 (60.3)	169 (58.5)
METs mins/week ##	(n=158)	(n=132)	(n=290)
	800 (0-1680)	840 (100-1680)	820 (0-1680)
METs category £	(n=158)	(n=132)	(n=290)
<600 mins/week	67 (42.4)	57 (43.2)	124 (42.8)
≥600 mins/week	91 (57.6)	75 (56.8)	166 (57.2)
Sleep duration category @	(n=154)	(n=130)	(n=284)
Recommended (7-9 hrs)	104 (67.5)	105 (80.8)	209 (73.6)
Maybe appropriate (6-6.99 or 9.1-11 hrs)	41 (26.6)	20 (15.3)	61 (21.5)
Not recommended (<6 or >11 hrs)	9 (5.9)	5 (3.9)	14 (4.9)
Balanced diet	(n=158)	(n=132)	(n=290)
Yes	23 (14.6)	26 (19.7)	49 (16.9)
No	106 (67.1)	93 (70.5)	199 (68.6)
No information	29 (18.3)	13 (9.8)	42 (14.5)
Small frequent meals	(n=158)	(n=132)	(n=290)
Yes	13 (8.2)	13 (9.9)	26 (9.0)
No	135 (85.5)	115 (87.1)	250 (86.2)
No information	10 (6.3)	4 (3.0)	14 (4.8)
Sugary food consumption	(n=158)	(n=131)	(n=289)
Always	35 (22.1)	25 (19.1)	60 (20.8)
Sometimes	66 (41.8)	74 (56.5)	140 (48.4)
Occasionally	7 (4.4)	3 (2.3)	10 (3.5)
Never	50 (31.7)	29 (22.1)	79 (27.3)

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Food group categories (gm/day)			
Total grains	(n=157)	(n=131)	(n=288)
Median (IQR)	527 (400-684)	587 (471-684)	557 (438-684)
Total protein	(n=149)	(n=126)	(n=275)
Median (IQR)	285 (180-390)	316 (225-415)	300 (200-403)
Total vegetables	(n=156)	(n=130)	(n=286)
Median (IQR)	189 (107-242)	192 (124-266)	190 (117-249)
Total fruits	(n=33)	(n=20)	(n=53)
Median (IQR)	45 (38-87)	63 (44-91)	58 (40-87)
Total fats oil	(n=153)	(n=128)	(n=281)
Median (IQR)	4.5 (3-6.5)	3.8 (2.9-5.1)	4.2 (3-5.5)
Total salt	(n=156)	(n=130)	(n=286)
Median (IQR)	2.9 (2-4.3)	3.0 (2.3-4.3)	3.0 (2.1-4.3)
Clinical characteristics			
Hypertension Status (SBP≥140 or DBP≥90 or anti-hypertensive medication)	(n=149)	(n=125)	(n=274)
Yes	90 (60.4)	82 (65.6)	172 (62.8)
No	59 (39.6)	43 (34.4)	102 (37.2)
Family history of diabetes	(n=157)	(n=132)	(n=289)
Both parent	4 (2.6)	8 (6.0)	12 (4.2)
Either parent	44 (28.0)	43 (32.6)	87 (30.1)
No family history	109 (69.4)	81 (61.4)	190 (65.7)

Median (IQR)

£ as per Global Physical Activity Questionnaire

@ as per National Sleep Foundation [Recommended (7-9 hrs), Maybe appropriate (6-6.99 or 9.1-11 hrs), Not recommended (<6 or >11 hrs)]

METs: Metabolic equivalent; mins/week: minutes per week; gm/day: gram per day; SBP: Systolic blood pressure; DBP: Diastolic blood pressure; IQR: Interquartile range

Table S3: Effect of the intervention on HbA1c, weight and waist circumference (Sub-groups analyses)

	Baseline		Post-intervention assessment			
	n	Mean (SD)	n	Mean (SD)	Mean diff (95% CI)*	p-value
HbA1c (%) (Primary outcome)						
Mode of intervention						
Physical intervention	59	5.95 (0.18)	57	6.05 (0.28)	-0.047 (-0.147 to 0.053)	0.36
Digital intervention	91	5.98 (0.23)	73	6.18 (0.47)	0.066 (-0.023 to 0.156)	0.15
Mixed intervention	4	6.05 (0.17)	4	6.10 (0.35)	-0.039 (-0.089 to 0.011)	0.13
Follow-ups						
No follow-up	36	5.95 (0.22)	32	6.01 (0.31)	-0.077 (-0.177 to 0.023)	0.13
Monthly telephone follow-up	16	5.86 (0.11)	14	6.18 (0.61)	0.102 (0.053 to 0.150)	<0.01
Biweekly telephone follow-up	76	6.00 (0.23)	63	6.16 (0.42)	0.031 (-0.074 to 0.136)	0.57
Weekly physical follow-up	26	5.97 (0.16)	25	6.14 (0.29)	0.034 (-0.035 to 0.103)	0.33
Weight (kg) Secondary outcomes						
Mode of intervention						
Physical intervention	30	70.2 (12.8)	57	69.8 (12.1)	-2.1 (-4.0 to -0.2)	0.03
Digital intervention	64	70.2 (10.2)	73	68.5 (9.9)	-0.2 (-1.4 to 1.0)	0.78
Mixed intervention	4	58.1 (6.4)	4	59.1 (4.9)	0.6 (-0.0 to 1.3)	0.07
Follow-ups						
No follow-up	10	73.7 (14.4)	32	72.3 (12.1)	-1.0 (-2.6 to 0.6)	0.22
Monthly telephone follow-up	9	76.0 (10.3)	14	72.2 (12.2)	-0.1 (-0.8 to 0.6)	0.83
Biweekly telephone follow-up	59	68.2 (9.6)	63	67.2 (9.2)	-0.3 (-1.5 to 0.9)	0.60
Weekly physical follow-up	20	69.53 (13.2)	25	66.5 (11.6)	-2.6 (-5.1 to -0.1)	0.04
Waist circumference (cm) (Secondary outcome)						
Mode of intervention						
Physical intervention	59	96.7 (8.2)	57	94.6 (10.8)	1.6 (-0.9 to 4.1)	0.21
Digital intervention	91	96.3 (8.1)	73	91.4 (8.3)	-0.7 (-2.7 to 1.3)	0.49
Mixed intervention	4	94.3 (9.3)	4	84.3 (2.5)	-6.7 (-8.1 to -5.3)	<0.001
Follow-ups						
No follow-up	36	97.3 (8.8)	32	95.2 (9.8)	1.5 (-0.1 to 3.0)	0.07
Monthly telephone follow-up	16	95.2 (6.6)	14	93.5 (6.9)	2.0 (0.6 to 3.3)	<0.001
Biweekly telephone follow-up	76	96.5 (8.1)	63	90.5 (8.2)	-1.7 (-4.1 to 0.8)	0.18
Weekly physical follow-up	26	95.6 (8.3)	25	93.8 (12.7)	1.8 (-3.7 to 7.2)	0.53

Mean difference between groups estimated by mixed linear model; HbA1c: Glycated hemoglobin; ITT: Intention-to-treat analysis; SD: Standard deviation; kg:Kilogram; cm: centimeter

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**Table S4: Effect of the intervention on secondary outcomes physical activity and diet
(Sub-groups analyses)**

	Baseline		Post-intervention assessment			
ITT	n	Mean (SD)	n	Mean (SD)	Mean diff (95% CI)*	p-value
Physical activity (METs) (Secondary outcome)						
Mode of intervention						
Physical intervention	59	2286 (4493)	56	576 (596)	-125 (-471 to 222)	0.48
Digital intervention	90	1680 (2993)	79	888 (1485)	187 (-21 to 396)	0.08
Mixed intervention	4	760 (1000)	4	450 (205)	-209 (-340 to -78)	0.01
Follow-ups						
No follow-up	36	1838 (3276)	33	727 (682)	35 (-144 to 213)	0.70
Monthly telephone follow-up	15	3012 (5261)	14	1877 (3256)	1174 (1037 to 1311)	<0.001
Biweekly telephone follow-up	76	1315 (2038)	68	703 (516)	44 (-126 to 214)	0.61
Weekly physical follow-up	26	2993 (5794)	24	257 (207)	-434 (-614 to -255)	<0.001
Total grain (gm/day) (Secondary outcome)						
Mode of intervention						
Physical intervention	59	544 (182)	54	575 (120)	12 (-30 to 53)	0.58
Digital intervention	89	539 (214)	79	500 (106)	-75 (-99 to -51)	<0.001
Mixed intervention	4	476 (55)	4	502 (102)	-69 (-93 to -46)	<0.001
Follow-ups						
No follow-up	36	494 (189)	31	549 (73)	2 (-18 to 22)	0.82
Monthly telephone follow-up	14	560 (167)	14	423 (85)	-160 (-181 to -138)	<0.001
Biweekly telephone follow-up	76	547 (208)	68	515 (103)	-58 (-86 to -29)	<0.001
Weekly physical follow-up	26	568 (205)	24	608 (155)	25 (-42 to 92)	0.47
Total protein (gm/day) (Secondary outcome)						
Control (ITT)	126	343 (166)	119	266.5 (91.1)		
Intervention (ITT)	149	309 (188)	136	251 (88)	-6 (-30 to 18)	0.64
Attendance						
≥ 1 session	71	316 (181)	66	270 (104)	11 (-18 to 40)	0.45
≥ 2 sessions	54	330 (185)	51	280 (112)	19 (-12 to 51)	0.23
≥ 3 sessions	35	335 (184)	34	264 (104)	1 (-42 to 43)	0.98
All four sessions	21	385 (189)	21	278 (97)	5 (-31 to 42)	0.78
Mode of intervention						
Physical intervention	59	334 (174)	54	280 (100)	17 (-3 to 36)	0.09
Digital intervention	81	307 (200)	78	231 (75)	-30 (-49 to -10)	<0.001
Mixed intervention	4	210 (127)	4	243 (31)	2 (-13 to 17)	0.81

Follow-ups						
No follow-up	36	333 (182)	31	274 (104)	16 (-11 to 43)	0.26
Monthly telephone follow-up	13	331 (236)	13	263 (98)	-3 (-18 to 12)	0.67
Biweekly telephone follow-up	69	296 (193)	68	227 (66)	-34 (-53 to -16)	<0.001
Weekly physical follow-up	26	335 (164)	24	284 (99)	18 (1 to 34)	0.04
Fruits and vegetables (gm/ day) (Secondary outcome)						
Mode of intervention						
Physical intervention	59	194 (103)	54	280 (132)	8 (-39 to 55)	0.73
Digital intervention	89	194 (106)	78	273 (107)	-0.4 (-31 to 31)	0.98
Mixed intervention	3	275 (88)	4	226 (43)	-53 (-74 to -31)	<0.001
Follow-ups						
No follow-up	36	167 (112)	31	246 (100)	-27 (-54 to 0.5)	0.05
Monthly telephone follow-up	14	196 (79)	14	274 (107)	-0.7 (-22 to 21)	0.95
Biweekly telephone follow-up	75	206 (105)	67	273 (105)	-1 (-30 to 28)	0.93
Weekly physical follow-up	26	205 (100)	24	315 (160)	40 (-13 to 93)	0.14

*Mean difference between groups estimated by mixed linear model; METs: Metabolic equivalent; gm/day: gram per day; ITT: Intention-to-treat analysis; SD: Standard deviation

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