

Supplemental materials for

Verhulst MJ, Teeuw WJ, Gerdes VE, Loos BG. Implementation of an oral care protocol for primary diabetes care: a pilot cluster-randomized controlled trial. *Ann Fam Med.* 2021;19(3):197-206.

Supplemental Table 1. Participant flow per GP office

GP office	All patients with DM	Eligible study	Patients included, n (%) ^b	Patients followed up, n (%) ^c
1	177	74 (41.8)	28 (37.8)	24 (85.7)
2	98	70 (71.4)	24 (34.3)	20 (83.3)
3	250	188 (75.2)	69 (36.7)	41 (59.4) [†]
4	212	58 (27.4)	48 (82.8)	43 (89.6)
5	108	93 (86.1)	18 (19.4)	17 (94.4)
6	129	35 (27.1)	32 (91.4)	30 (93.8)
7	65	50 (76.9)	40 (80.0)	29 (72.5)
8	136	79 (58.1)	41 (51.9)	38 (92.7)
9	186	72 (38.7)	15 (20.8)	13 (86.7)
10	77	61 (79.2)	38 (62.3)	31 (81.6)
11	80	63 (78.8)	33 (52.4)	30 (90.9)
12	120	117 (97.5)	49 (41.9)	17 (34.7) [†]
13	145	119 (82.1)	40 (33.6)	25 (62.5)
14	127	86 (67.7)	16 (18.6)	15 (93.8)
15	208	77 (37.0)	31 (40.3)	25 (80.6)
16	170	160 (94.1)	16 (10.0)	10 (62.5)
17	140	56 (40.0)	25 (44.6)	10 (40.0) [†]
18	329	225 (68.4)	18 (8.0)	11 (61.1)
19	69	65 (94.2)	26 (40.0)	24 (92.3)
20	220	160 (72.7)	23 (14.4)	10 (43.5) [†]
21	100	80 (80.0)	49 (61.3)	46 (93.9)
22	178	124 (69.7)	41 (33.1)	8 (19.5) [†]
23	180	111 (61.7)	29 (26.1)	16 (55.2) [†]
24	115	65 (56.5)	15 (23.1)	10 (66.7)

a. Eligible study subjects as percentage of the total number patients with DM.

Supplemental Table 2. Baseline, follow-up and change scores in oral health-related QoL of the analytic sample (n=405), expressed as continuous variables

Subdomain	Experimental ^a (n=162)			Control ^a (n=243)		
	Baseline	Follow-up	Change	Baseline	Follow-up	Change
Functional limitation	0.36 ± 0.90	0.22 ± 0.66	-0.14 ± 0.73	0.24 ± 0.67	0.20 ± 0.60	-0.04 ± 0.69
Physical pain	0.78 ± 1.30	0.60 ± 1.11	-0.19 ± 1.11	0.67 ± 1.28	0.56 ± 1.21	-0.11 ± 1.14
Psychological discomfort	0.59 ± 1.39	0.40 ± 0.99	-0.20 ± 1.23	0.36 ± 0.97	0.31 ± 0.92	-0.05 ± 1.03
Physical disability	0.22 ± 0.80	0.18 ± 0.70	-0.04 ± 0.66	0.22 ± 0.82	0.21 ± 0.60	-0.02 ± 0.81
Psychological disability	0.28 ± 0.70	0.21 ± 0.58	-0.07 ± 0.75	0.23 ± 0.61	0.22 ± 0.68	-0.01 ± 0.68
Social disability	0.12 ± 0.63	0.12 ± 0.47	-0.01 ± 0.44	0.09 ± 0.41	0.15 ± 0.71	0.06 ± 0.73
Handicap	0.20 ± 0.66	0.10 ± 0.35	-0.10 ± 0.62	0.09 ± 0.33 ^b	0.14 ± 0.66	0.05 ± 0.66
OHIP-NL14 total score	2.56 ± 5.28	1.83 ± 3.92	-0.73 ± 3.65	1.90 ± 3.89	1.79 ± 4.28	-0.11 ± 3.79

a. Data are presented as mean ± SD. Subdomains according to Slade ²¹

b. Significantly different from the experimental group (p <0.05)

Supplemental Table 3. Loss to follow-up rate, improvement in oral health-related QoL and self-reported oral health complaints by intervention, excluding GP offices with a follow-up rate $\geq 60\%$.

	Experimental	Control	χ^2 statistic	<i>p</i> -value	Intracluster	Adjusted	Adjusted
Total							
GP offices, n=6	4	2					
Study participants, n=236	142	94					
Loss to follow-up rate							
GP offices	0.0 (0)	0.0 (0)	n/a	n/a	n/a	n/a	n/a
Study participants	64.1 (91)	45.7 (43)	7.752	<0.005	0.061	2.001	0.157
Improvement in oral health-							
	n=42^b	n=38^b					
Functional limitation	11.9 (5)	18.4 (7)	0.664	0.415	0.005	0.612	0.434
Physical pain	19.0 (8)	26.3 (10)	0.604	0.437	-0.040 ⁺	0.604	0.437
Psychological discomfort	14.3 (6)	15.8 (6)	0.035	0.851	0.253	0.007	0.933
Physical disability	7.1 (3)	13.2 (5)	0.802	0.370	0.061	0.398	0.528
Psychological disability	7.1 (2)	10.5 (4)	0.286	0.593	0.116	0.099	0.753
Social disability	7.1 (2)	0.0 (0)	2.820	0.093	0.182	0.718	0.397
Handicap	4.8 (2)	5.3 (2)	0.011	0.916	0.036	0.007	0.933
Total OHIP-NL14	26.2 (11)	31.6 (12)	0.283	0.595	0.011	0.237	0.626
Improvement in self-reported							
	n=51^b	n=51^b					
Pain in mouth	13.7 (7)	0 (0)	7.516	0.006	0.038	4.147	0.041
Dry mouth	23.5 (12)	5.9 (3)	6.331	0.011	0.130	1.765	0.184
Bad breath	5.9 (3)	5.9 (3)	0.000	1.000	0.023	0.000	1.000
Any	37.3 (19)	7.8 (4)	12.631	<0.001	0.199	2.581	0.108

Values represent proportions of subjects (numbers). *p*-values <0.05 are presented in bold.

Supplemental Appendix 1a. Referral letter for the dentist (English)

Referral letter GP–dentist

Research oral health & diabetes

Date:

Patient name: _____

Date of birth: _____

Patient number: _____

Concerns: Referral for dental check-up and treatment if necessary.

Dear colleague,

Recently, the patient above attended our office for the annual diabetes check-up. Since diabetes mellitus and oral health are associated, we advised the patient to regularly attend your practice for dental check-up and if necessary optimization of oral health. Could you please provide a brief summary of the current oral health situation, by returning the form attached?

In case you deem it necessary to refer the patient for further (specialized) treatment, you can find referral forms at <http://www.acta.nl/nl/patienten/bent-u-verwijzer/download-verwijskaarten>. These forms can be sent digitally or through mail to ACTA, after which we will contact the patient. We have already attached a physical referral letter for specialized treatment of periodontitis, which you can find in the envelope addressed to ACTA.

Thank you in advance.

Hereby, we provide a brief summary of our findings regarding diabetes mellitus, to add to your patient files.

- Type:	1/2/other
- Year of diagnosis
- Metabolic regulation:	Good/moderate/poor
- Check-up frequency:	3/4/6 monthly
- Medication:
- Diabetic complications:

Kind regards,

Supplemental Appendix 1b. Referral letter for the dentist (Dutch).

Verwijsbrief huisarts-tandarts

Onderzoek mondgezondheid & diabetes

Datum:

Patiënt naam: _____

Geboortedatum: _____

Patiënt nummer: _____

Betreft: Verwijzing voor tandheelkundige controle en eventueel behandeling.

Geachte collega,

Recent zagen we bovengenoemde patiënt tijdens de jaarlijkse diabetescontrole. Aangezien diabetes mellitus en mondgezondheid sterk gerelateerd zijn hebben wij de patiënt geadviseerd om regelmatig bij u voor tandheelkundige controle te gaan om de mondgezondheid te laten controleren en indien nodig te optimaliseren. Zou u zo vriendelijk willen zijn om een korte samenvatting van de huidige mondgezondheid via het bijgevoegde formulier aan ons terug te sturen?

Mocht u het noodzakelijk achten de patiënt voor verdere (specialistische) behandeling door te verwijzen, dan vindt u op <http://www.acta.nl/nl/patienten/bent-u-verwijzer/download-verwijskaarten> de verwijsformulieren welke u digitaal of via de post op kunt sturen naar de ACTA. Wij nemen dan contact op met uw patiënt. Voor parodontitis behandeling hebben wij alvast een fysieke verwijskaart bijgevoegd, welke u vindt in de envelop geadresseerd aan de ACTA.

Bij voorbaat hartelijk dank.

Bij deze geven wij u een korte samenvatting van onze bevindingen aangaande de diabetes mellitus om toe te voegen aan uw patiëntdossier.

- Type:	1/2/anders
- Jaar van diagnose
- Diabetesregulatie:	Goed/matig/slecht
- Diabetescontrole:	3/4/6 maandelijks
- Medicatie:
- Diabetescomplicaties:

Met collegiale groet,

Supplemental Appendix 2. Loss to follow-up analysis

Reasons for loss to follow-up were: transfer of GP office (n=27); renounce from participation (n=25); illness and/or weakness, e.g. due to dementia or severe diabetic complications (n=11), death (n=10) and coding mistakes, i.e. follow-up data accidentally pertained a patient other than baseline data (n=5). Furthermore, in the case of 143 participants (18.7%), the GPs and nurse practitioners did not succeed in completing the follow-up measurements without providing a reason.

Of the 221 participants without any follow-up data available, 130 individuals (59%) pertained to the experimental group and 91 subjects (41%) belonged to the control group. There was no significant difference in the rate of loss to follow-up between the experimental and control group when accounting for the clustering effect (ICC= 0.214, adjusted $\chi^2= 2.354$, $p=0.125$) (Table 2). Participants lost to follow up did not differ regarding the following baseline characteristics: age ($p=0.394$); gender ($p=0.851$); ethnicity ($p=0.200$); education level ($p=0.129$); smoking status ($p=0.884$); metabolic control ($p=0.188$); obesity ($p=0.427$); hypertension ($p=0.658$); estimated glomerular filtration rate ($p=0.682$); retinopathy ($p=0.535$); diabetic foot risk score ($p=0.978$); self-reported regular dentist visit ($p=0.256$); oral health-related QoL at baseline ($p=0.282$); the presence of self-reported oral complaints (pain in mouth: $p=0.292$; dry mouth: $p=0.673$; bad breath: $p=0.085$) and edentulousness ($p=0.068$). Only the proportion of patients with dyslipidemia at baseline was higher in those lost to follow-up ($p=0.005$).