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A photograph of a smiling man and woman walking outdoors. The woman is on the left, wearing a black jacket and holding a light-colored bag. The man is on the right, wearing a grey blazer over a white t-shirt and carrying a black bag. They are walking in front of a modern building with large glass windows.

Adherence and predictors of adherence to a blended face-to-face and web-based smoking cessation treatment

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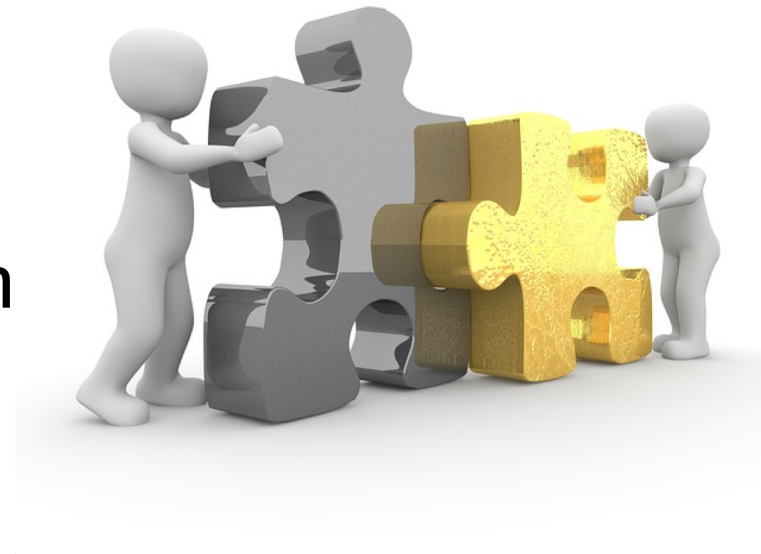
Consortium RookvrijLeven

- Technology, Health & Care Lectorate, Saxion University of Applied Sciences
- Department of Psychology, Health & Technology; University of Twente
- Department of Pulmonary Medicine; Medical Spectrum Twente
- Department Online Treatment and Prevention; Tactus Addiction Treatment



UNIVERSITY OF TWENTE.

... a combination of face-to-face treatment with internet sessions into one integrated smoking cessation treatment which can be delivered in routine care settings



BSCT: characteristic features

- High intensity treatment – BSCT comprises 10 sessions (20 minutes each, except the first one which is 50 minutes)
- Covers the majority of evidence-based behavior changes techniques
- Derived from the Dutch Guideline Tobacco Addiction fulfilling the requirements of the Dutch care module for smoking cessation
- Counselors are registered in the Dutch quality register of qualified smoking cessation counselors
- Supporting three quitting strategies
 - (1) to stop at once
 - (2) to change gradually by increasing the number of daily activities that are done smoke-free
 - (3) to decrease smoking at regular intervals (scheduled smoking reduction e.g. 100%→75%, 75%→50%)
- 50–50 balance for face-to-face and web-based treatment
- Constantly alternating and interacting use of face-to-face and web-based treatment.

BSCT: sessions

	Week	Session	Mode of delivery
1	1	Goal setting	Face-to-face
2	3	Measures for self-control	Web
3	5	Dealing with withdrawal	Face-to-face
4	7	Breaking habits	Web
5	9	Dealing with tempters	Face-to-face
6	11	Food for thought	Web
7	14	Think differently	Face-to-face
8	18	Do differently	Web
9	22	Action plan	Face-to-face
10	26	Closure	Web

Adherence: definition



Adherence

WHO definition (2003)

the **extent** to which a person's **behavior** - taking medication, following a diet, and/or executing lifestyle changes, **corresponds** with agreed recommendations from a healthcare provider



- Problems in context of counselling:
 - premature termination of the treatment
 - failures to complete between session tasks and exercises
- Low adherence
 - indicates limited treatment acceptability
 - affects treatment effectiveness (dose-response-relationship)

Adherence (literature)

- No study found for blended smoking cessation treatment
- Blended treatment in mental health/substance abuse
 - RCT (n=97) BT vs. f2f in comorbid mental health and substance use problems: participants equally able to engage, bond, and commit to treatment
 - RCT (n=45) BT vs. f2f in depression: adherence to BT significantly lower, but treatments equally effective
 - Small sample (n=9) blended depression treatment trial: adherence rates were considered promising (i.e. five of the seven patients that started the blended treatment completed 90% of it)
- In general in smoking, adherence rapidly declines over the first weeks resulting in rather low adherence rates (40%)

Predictors: definition

... patients' person-, smoking- and health-related characteristics that correlate with the expected outcome (adherence)

Predictors of adherence (literature)

- No study found on blended treatment
- Known predictors of adherence to smoking cessation treatment in either face-to-face or web-based settings. The likelihood of being adherent increases with...
 - higher age
 - mal gender
 - higher internet skills
 - negative attitude towards smoking and higher motivation to quit at baseline
 - higher self-efficacy at baseline
 - early success in quitting after treatment start
 - lower nicotine dependency at baseline and
 - fewer withdrawal symptoms after quitting

1. What is the adherence to BSCT over the course of the treatment?
2. How many patients are adherent to BSCT as a whole?
3. Which person, – smoking and health-related characteristics predict adherence to BSCT?

Method: study subjects

- Patients of the outpatient smoking cessation clinic at Medisch Spectrum Hospital, Enschede/NL
- Subset of the RCT LiveSmokefree study
- $n=75$
- Inclusion criteria were:
 - being at least 18 years old
 - currently smoking (at least one cigarette a day)
 - having access to email and internet
 - being able to read and write Dutch

- 2 Data sources screened
 1. the patients' records of the outpatient cessation clinic which were kept by the counselors (xCare, DSV)
 2. patients' online records in the web-based treatment part at www.rokendebaas.nl.
- 18 activities selected to trace patients' adherence over the course of the treatment; based on three considerations
 1. Referring to a relevant evidence-based behavior change technique (e.g. goal setting or action plan) which represents the main feature of the sessions
 2. Tracing both the face-to-face and web-based behavior of the patients (e.g. attending face-to-face treatment sessions as in "Think differently (f2f)" or completion of predefined web-based tasks as in "Think differently (web)")
 3. The data used had to be objective (e.g. receiving a message, unblocking an online tool, filling in a minimal number of data in an online tool)

Method: data collection predictors

Predictors

33 person-, smoking- and health-related characteristics were assessed with the intake measurement using an online questionnaire



Person-related

1. Sex
2. Age
3. Marital status
4. Housing situation
5. Education
6. Main income
7. Main day activity
8. Internet skills

Smoking-related

9. Reason to start treatment
10. Dependency
11. Attitude neg
12. Attitude pos
13. Self-efficacy
14. Readiness to quit
15. Earlier quit attempts
16. Social support
17. Social modelling

9. Use of alcohol

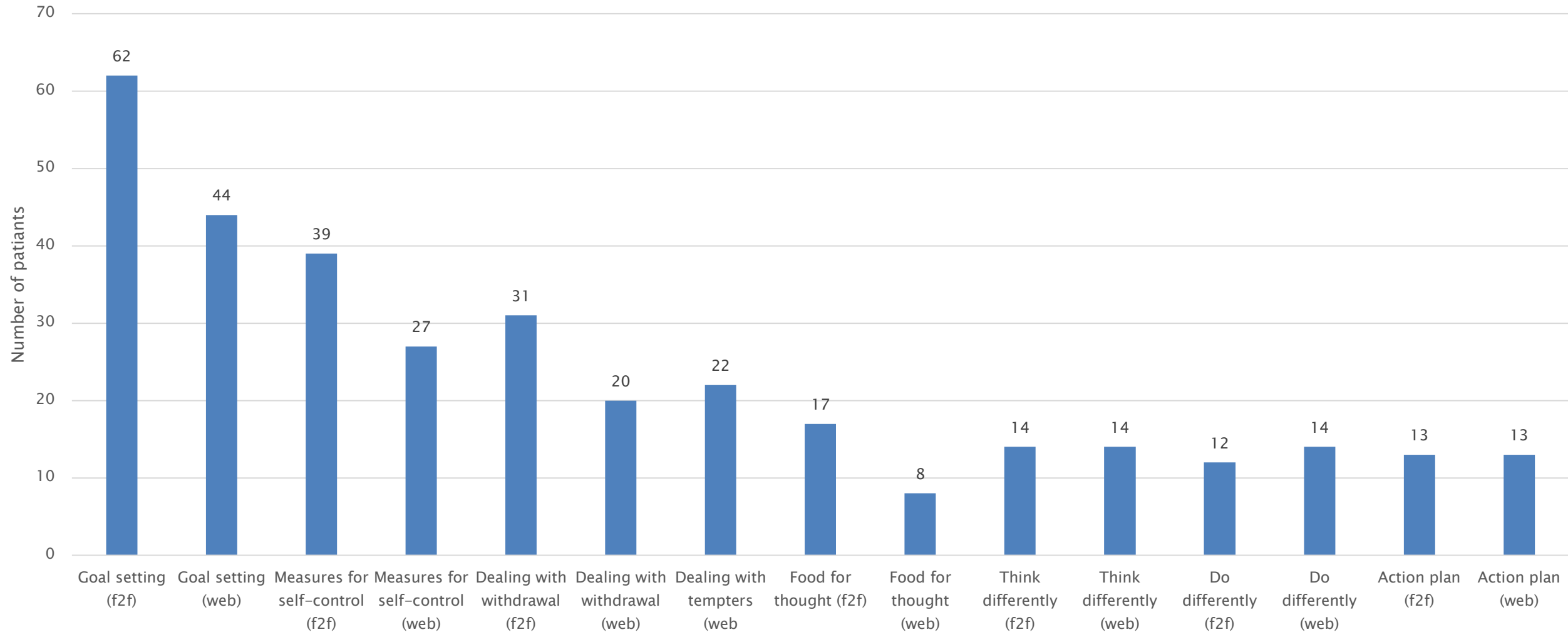
10. Use of (recreational) drugs

Health-related

20. Medication in general
21. Medication addiction
22. Medication psychic
23. Medication physical
24. Medication others
25. Health complaints
26. Smoking related complaints
27. Health + smoking related complaints
28. Depression
29. Anxiety
30. Stress
31. DASS total
32. Quality of life
33. Quality of life (VAS)

Results 1: Adherence over the course of the treatment (n=75)

Adherence per activity



Results 2: adherence to BSCT

Adherence based on the threshold (60%) (n=75)

		web-based		
		adherent	non-adherent	total
Face-to-face	adherent	14 (18%)	5 (7%)	19 (25%)
	non-adherent	3 (5%)	53 (70%)	56 (75%)
	total	17 (23%)	58 (77%)	75 (100%)

Results 3: predictors adherence to BSCT

- Univariately associated with adherence ($p < 0.05$) were
 - Sex (men more adherent)
 - marital status (“with partner” more adherent)
 - main income (“own income” more adherent than “income support”)
 - social modelling (“non-smoking friends” more adherent)

Multivariate regression analysis

- Marital status and social modelling were the best independent predictors
 - Patients having a partner had 11-times higher odds of being adherent (OR=0.09; CI: 0.01–0.75; $p=0.03$).
 - For social modeling – graded from 0 (=partner and friends are not smoking) to 8 (=both partner and nearly all friends are smoking) – each unit increase was associated with 28% lower odds of being adherent (OR=0.72; CI: 0.55–0.94; $p=0.02$).

- To the best of our knowledge, first study exploring adherence to BSCT
- Notable decrease in adherence over the course of the treatment, in line with literature
- Only 18% of the patients are adherent to BSCT
- Except for “sex”, we could not confirm predictors earlier reported in literature
- Are the results specific for blended treatment (no control group)?

References:

Siemer, L.; Brusse-Keizer, M. G.; Postel, M. G.; Ben Allouch, S.; Patrinoopoulos, A.; Sanderman, R.; Pieterse, M. E. (2018). Exploring measurement, levels and predictors of adherence to a blended smoking cessation treatment. *J Med Internet Res* (forthcoming).

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