Health By Tech X

Adherence to Smoking Cessation Treatment and Predictors of Adherence

Comparing Blended Treatment with Face-To-Face Treatment

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Background: Blended Treatment

- Promising way to deliver behavioral change interventions
- Combining the strengths of face-to-face (F2F) treatment with the unique features of Web-based care
- "Best of both worlds"

Definition: Adherence

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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

Eating salad for health by typexmick,
http://www.freeimages.com/photo/1432591

- Problems in context of counselling:
  - premature termination of the treatment
  - failures to complete between session tasks and exercises

Adherence and Smoking Cessation Treatment

- Primary determinant of treatment effectiveness (Dose-Response Relationship)
- Measurement
    - F2F: completed tasks and/or attended sessions
    - Web: log-ins, module completion, time spend online, messages/emails, print requests …
- Adherence rates (smoking cessation)
    - Widely vary between studies (5%-96%)
    - Adherence rapidly declines, resulting in rather low adherence rates (<40%)

Study participants

- Subset (N=70) of an RCT on the effectiveness of "Blended Smoking Cessation Treatment" (BSCT) versus Face-to-face-treatment as usual
- Outpatient smoking cessation clinic at the Medical Spectrum Twente hospital (Enschede/The Netherlands)
- Inclusion criteria
  - 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

Study intervention BSCT

- A combination of F2F-treatment and Web-based sessions blended into one integrated smoking cessation treatment delivered in routine care settings
- Consists of 5 F2F sessions at the outpatient clinic and 5 Web-based sessions (50-50 balance between F2F and Web)
- High-intensity treatment (6h total) derived from the Dutch Guideline Tobacco Addiction, fulfilling the requirements of the Dutch care module for smoking cessation
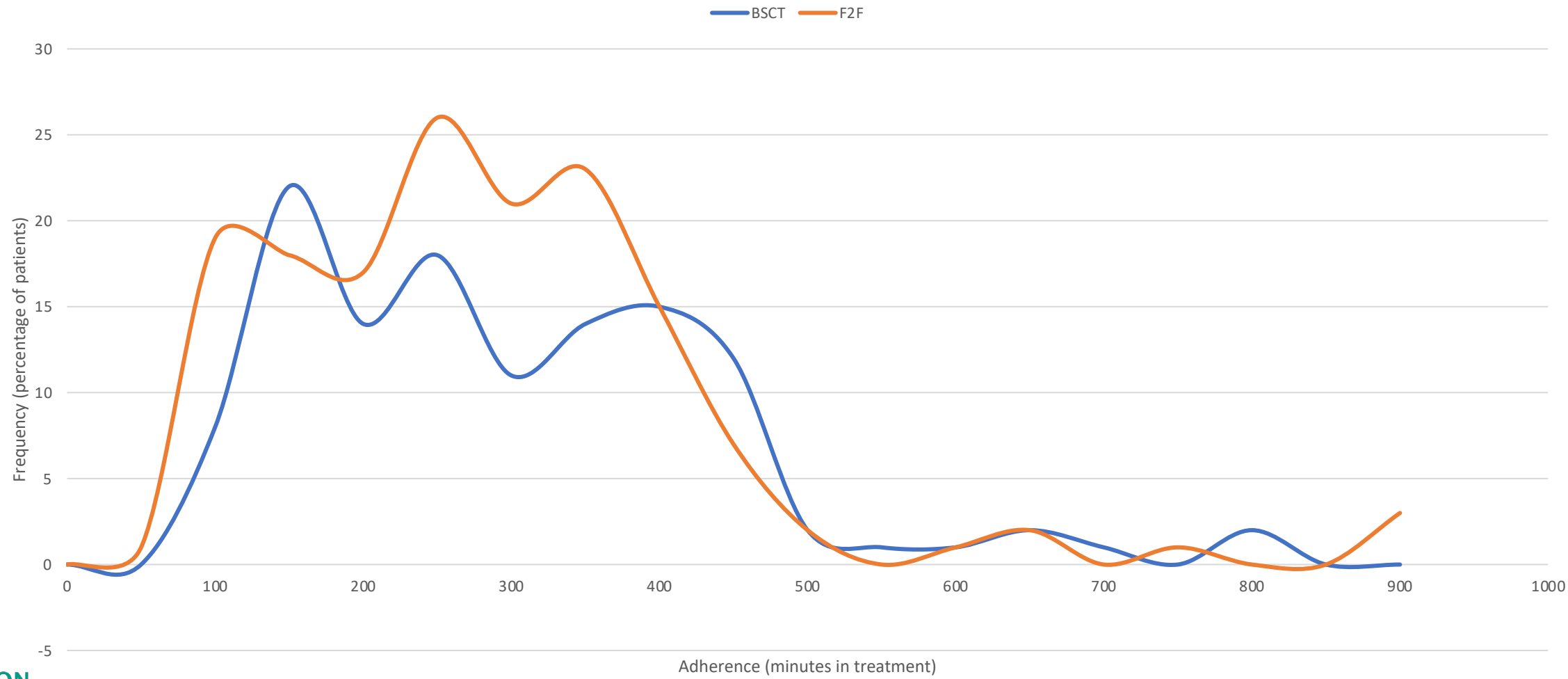- Supports three quitting strategies

Data collection

Adherence: sum of minutes in treatment based on hospital records

Predictors: 33 demographic, smoking-related and health-related characteristics collected using an online questionnaire (intake measurement)

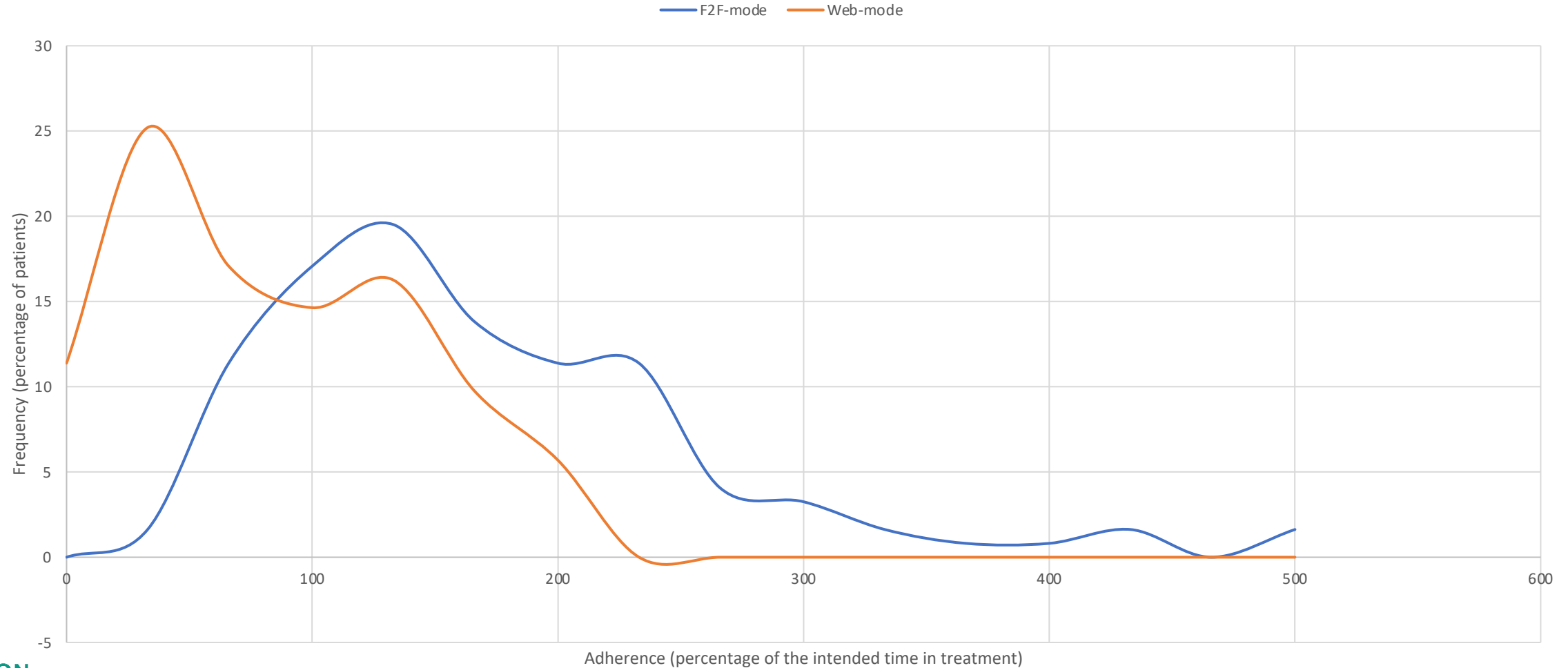1. How adherent are patients to BSCT compared to F2F?

Adherence BSCT vs. F2F

BSCT: 246 min, F2F 238 min in treatment; *P*=.30

1. Adherence

1. How adherent are the BSCT patients to BSCT's F2F mode compared to BSCT's Web mode?

Adherence in BSCT (F2F-mode vs. Web-mode)

F2F-mode: 152%, Web-mode: 75% of the planned treatment duration; P<.001

2. Predictors

Known predictors and the predictors we measured

Known predictors to adherence in smoking cessation treatment

- Higher age
- Male gender
- Higher internet skills
- Negative attitude toward smoking and higher motivation to quit at baseline
- Higher self-efficacy at baseline
- Early success in quitting after the start of the treatment
- Lower nicotine dependency at baseline and fewer withdrawal symptoms after quitting

Predictors we measured

Demographic
1. Gender
2. Age
3. Marital Status
4. Housing situation
5. Education
6. Main income
7. Main activity
8. Internet skills

Smoking related
9. Reason for starting treatment
10. Nicotine dependence (Fagerstroem)
11. Negative attitude towards quitting
12. Positive attitude towards quitting
13. Self-efficacy
14. Readiness to quit
15. Previous attempts
16. Social support
17. Social Modelling
18. Use of alcohol
19. Use of (recreational) drugs

Health related
20. Use of medication in general
21. Use of medication for addiction treatment
22. Use of medication for psychiatric treatment
23. Use of medication for physical treatment
24. Use of other medications
25. Health problems (MAP HSS)
26. Smoking related complaints
27. Health and smoking related complaints
28. Depression
29. Anxiety
30. Stress
31. DASS
32. EQ-5D-3L
33. EQ VAS

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1. What demographic, smoking-related and health-related patient characteristics predict adherence to BSCT and F2F, and to both groups combined?

Multivariate model of patients' characteristics predicting adherence

	All patients (R^2=.047)			F2F (R^2=.076)			BSCT (R^2=.049)		
	Regression coefficient	CI	P	Regression coefficient	CI	P	Regression coefficient	CI	P
Age (years)	2.5	1.2-3.8	.001	2.2	.4-3.9	.02	2.6	.5-4.6	.01
Social support				20.5	2.3-38.8	.03			

All patients: F2F and BSCT combined; F2F: face-to-face treatment; BSCT: blended smoking cessation treatment; CI: confidence interval
Social support (range 0 – 5; higher numbers indicate more social support in smoking cessation)

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1. In BSCT, what characteristics predict adherence to BSCT's F2F-mode and to BSCT's Web-mode?

Multivariate model of patients' characteristics predicting adherence

	F2F-mode (R^2=.034)			Web-mode (R^2=.164)		
	Regression coefficient	CI	P	Regression coefficient	CI	P
Housing situation			.02			
With children	Ref					
Without children	49.7	6.8 - 92.7				
Reason to start treatment						.02
Extrinsic				Ref		
Intrinsic				-21.5	-39.8 - -3.3	
Negative attitude towards quitting				3.6	.9 - 6.4	.01
Health complaints (MAPHSS)				-2.4	-3.8 - -1.0	.001

F2F-mode: face-to-face treatment session of the blended smoking cessation treatment; Web-mode: web-based sessions of the blended smoking cessation treatment; CI: confidence interval; Ref: reference
Negative attitude towards quitting (range -12 - 0; lower numbers indicate a more negative attitude towards quitting smoking); Health complaints (MAP HSS), Maudsley Addiction Profile Health Symptoms Scale (range 0 – 40; higher numbers indicate poorer health status)

Discussion

- Similar adherence levels for BSCT and F2F.
- In BSCT, patients spend twice as much time in the face-to-face mode.
- Supports the expectation that in mixed treatment, the strengths of one mode of delivery will compensate for the weaknesses of the other.
- Higher age was the only characteristic consistently found to predict higher adherence.
- Limitation: low variability of adherence explained by our prediction models -> other predictors play an important role?