



Norwegian Centre for
E-health Research

eRehabilitation for heart patients

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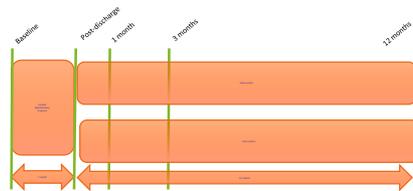
Why support over distance?



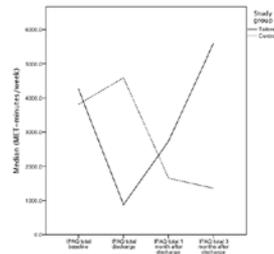
Ikkegideg.no



Tailoring on models of health behavior



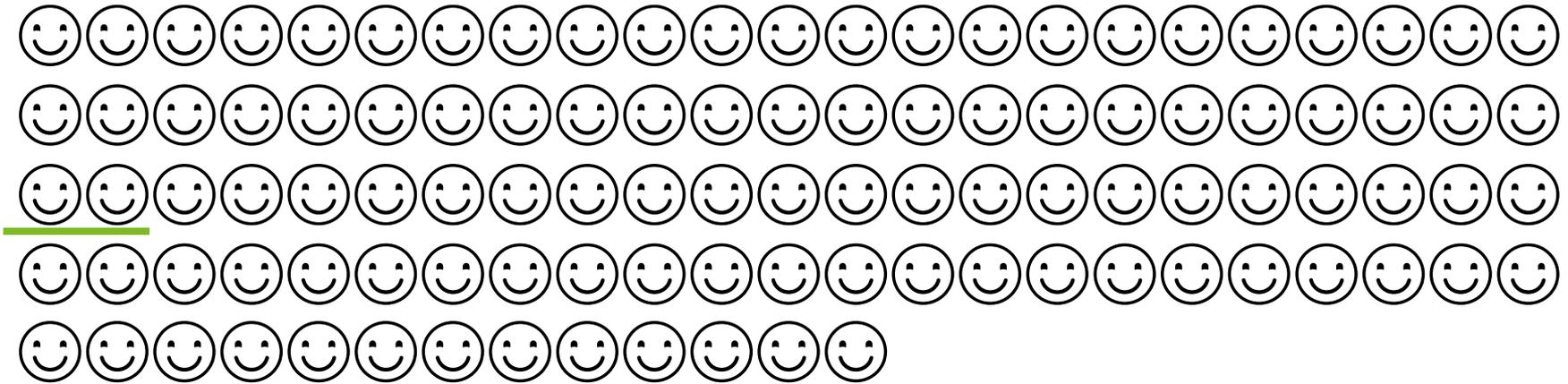
Study design



Results

Why over distance?

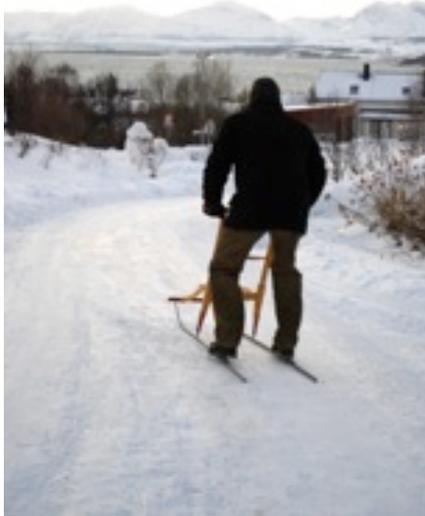
European average = 105 persons per square km



Northern Norway = 4,1 persons



- ❑ Reduction in cardiovascular cause deaths and hospital admission and improvements in health-related quality of life.
-



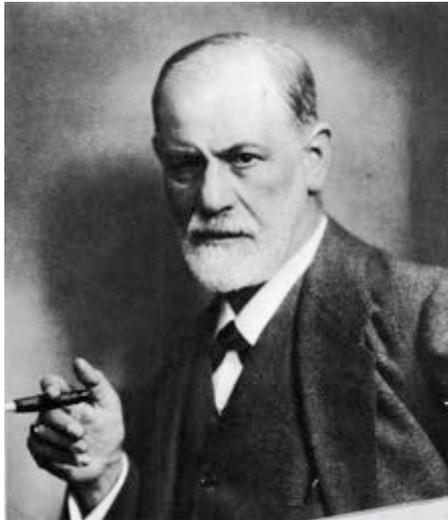
VS



Anderson et al. Exercise-based cardiac rehabilitation for coronary heart disease. Cochrane Database of Systematic Reviews 2016, DOI: 10.1002/14651858.CD001800.pub3.



Reduction in symptoms of anxiety and depression, and maybe cardiac mortality.



VS



Whaley et al. Psychological interventions for coronary heart disease. Cochrane Database of Systematic Reviews 2011, DOI: 10.1002/14651858.CD002902.pub3.



eHealth exercise interventions can be effective

A meta-analysis from 2012 showed that they can increase physical activity, pedometer steps, and minutes of exercise.



Fanning et al., J Med Internet Res 2012;14(6):e161



But it is also what the users want

What do
you need?



*I am like this, I need a bit of **encouragement from the others**, to manage alone, it is the problem...so this with the local team, it can be a useful boost or also approach...*



Antypas K, Wangberg SC

Combining Users' Needs With Health Behavior Models in Designing an Internet- and Mobile-Based Intervention for Physical Activity in Cardiac Rehabilitation

JMIR Res Protoc 2014;3(1):e4



Operation



Cardiac
Rehabilitation



ikkegideg.no (don't give up now)





Brukerkonto | Ikke gi deg no! x

← → ↻ 📄 <https://ikkegideg.no/user> ☆ 🔍

Ikke gi deg no!

Skibotn rehabilitering

Du er innlogget som testgroup111 -
Lagg ut
Skibotn Rehabilitering LHL nettside

Front Min side Hjelp Aktuelle tema Diskusjoner Likemannsarbeid

12:00 • Medlemmer • testgroup1111

Brukerkonto

Valg

Min profil
Mine venner
Min aktivitetskalender
testgroup1

Mine venner

hanna aspe
Elin elisabeth.stef.
Audhild Havem Alaba
Sirihaed

Mine mål

Endre dine mål

Ditt ukentlige mål for moderat intensitet er 140 min, og du har planlagt 0 min

Du må planlegge 140 minutter mer av moderat intensitet fysisk aktivitet for denne uken.

Ditt ukentlige mål for høy intensitet er 0 min, og du har planlagt 0 min til nå.

Kommende aktiviteter

Du har ingen kommenterte aktiviteter. På tide å planlegge litt?

Hvordan har du det i dag?

Maks 340 tegn tilst

testgroup111 har gjort en aktivitet - [boksing, sparring](#) - [Lar, 24 des](#)

Intensitet: 15 Anstrengende 10 bruket 20 min

30 min siden

Legg til kommentar

testgroup111 svarte på [Velkommen til den nye ikkegideg.no](#)

Ja, du kan slette denne etegp!

[Svar kommentaren](#)

4 time siden

Hanna Ole svarte på [Velkommen til den nye ikkegideg.no](#)

Tester ut diskusjonsbruket! Kan jeg slette denne meldinga etegp?

[Svar kommentaren](#)

En time siden

LHL

Nasjonalt sentral for
smittebæring og infeksjonslære

Skibotn Rehabilitering (LHL Helse AS)
Sensitivadresse: 0143 Skibotn | Postadresse: 0143 Skibotn
Telefon: 77 71 55 00 | Telefaks: 77 71 55 00 | E-post: skibotn@lhl.no

Ikke gi deg no!

Skibotn rehabilitering

- Front
- Min side
- Hjelp
- Aktuelle tema
- Diskusjoner
- Likemannsarbeid

[Hjem](#) > [Grupper](#) >

Medlemmer

Navn

- [admin](#)
- [Alibaba](#)
- [Audhild Høyem](#)
- [Elin](#)
- [elisabeth.ellef..](#)
- [kostas](#)
- [paolo](#)
- [testgroup1m1](#)

testgroup1

Ingen innlegg i denne gruppa.

testgroup1m1 har gjort en aktivitet - [boksing, sparring - Lør, 24 des](#)

Intensitet: 15 Anstrengende Tid brukt: 20 min.

13 min siden

[Legg til kommentar](#)

testgroup1m1 svarte på [Velkommen til den nye ikkegideg.no](#)

Ja, du kan slette denne etterpå!

[Besvar kommentaren](#)

3 time siden

kostas har lagt til en Aktivitet [Ballspill, fotball/håndball - Man, 16 jan](#). En uke siden

[Legg til kommentar](#)

kostas har lagt til en Aktivitet [fske, annet - Ons, 11 jan](#). 2 uker siden

[Legg til kommentar](#)

kostas har opprettet en diskusjon.

Velkommen til den nye ikkegideg.no

Her kan du gi tilbakemelding på design, innhold og funksjonalitet.

<https://ikkegideg.no/node/737>

2 uker siden

[Legg til kommentar](#)

kostas har lagt til en Aktivitet [Videospill \(Wil fit\) trening via TV/video, alene - Ons, 11 jan](#). 2 uker siden

Ikke gi deg no!

Skibotn rehabilitering

- Front
- Min side
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- Aktuelle tema
- Diskusjoner
- Likemannsarbeid

[Hjem](#) > [Medlemmer](#) > [testgroup1m1](#) >

- Min profil
- Mine venner
- Min aktivitetskalender
- testgroup1

Mine venner

- [kostas](#)
- [paolo](#)
- [Ellin](#)
- [ellsabeth.ellef...](#)
- [Audhild Høyem](#)
- [Allbaba](#)
- [Sinbad](#)

Kalender

[Ar](#) [Måned](#) [Uke](#) [Dag](#)

Legg til

« Forrige Uke for Desember 19 2011 Neste »

Tid	Mandag	Tirsdag	Onsdag	Torsdag	Fredag	Lørdag	Søndag
Hele dagen	19	20	21	22	23	24	25
14:00					14:28 boksing, sparring - Fre, 23 des Utført	14:28 boksing, sparring - Lør, 24 des Ikke utført	



Nasjonalt senter for
samhandling og telemedisin

Skibotn Rehabilitering (LHL Helse AS)
 Besøksadresse: 9143 Skibotn | Postadresse: 9143 Skibotn
 Telefon: 77 71 59 00 | Telefaks: 77 71 55 60 | E-post: skibotnsenteret@lhl.no



How tailored support through SMS works?





Tailoring makes interventions more effective



[Photo by: Robert Shele](#)

VS





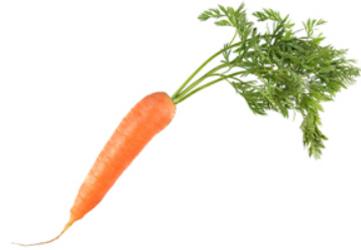
Which alternative would you use?

- A: Physical activity can reduce the likelihood of getting sleep problems.
- B: Physical activity improves the quality of sleep.



Regulatory focus

Promotion



Prevention





Which alternative would you use?

Prevention

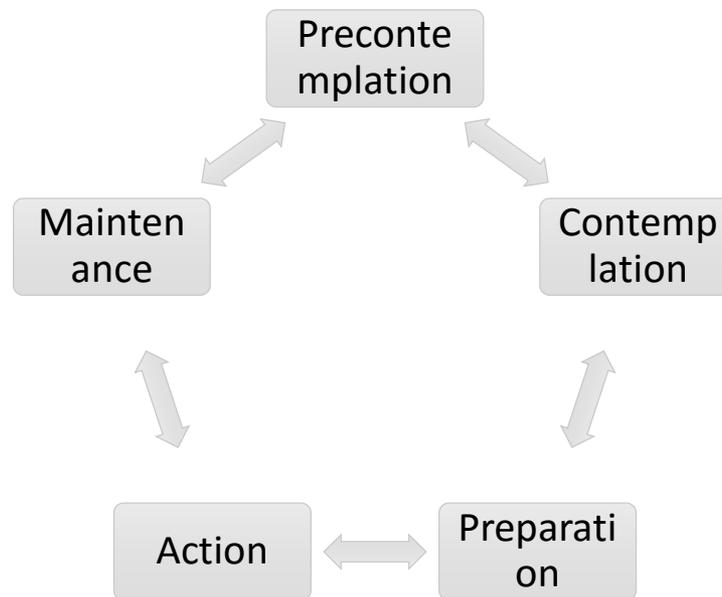
- A: Physical activity can reduce the likelihood of getting sleep problems.

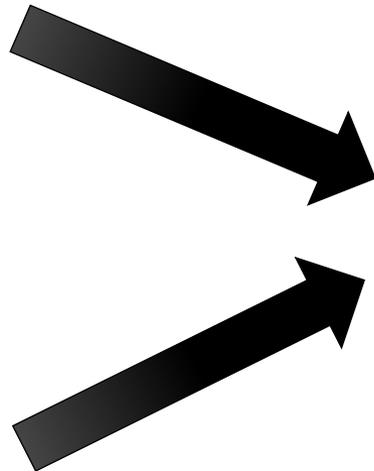
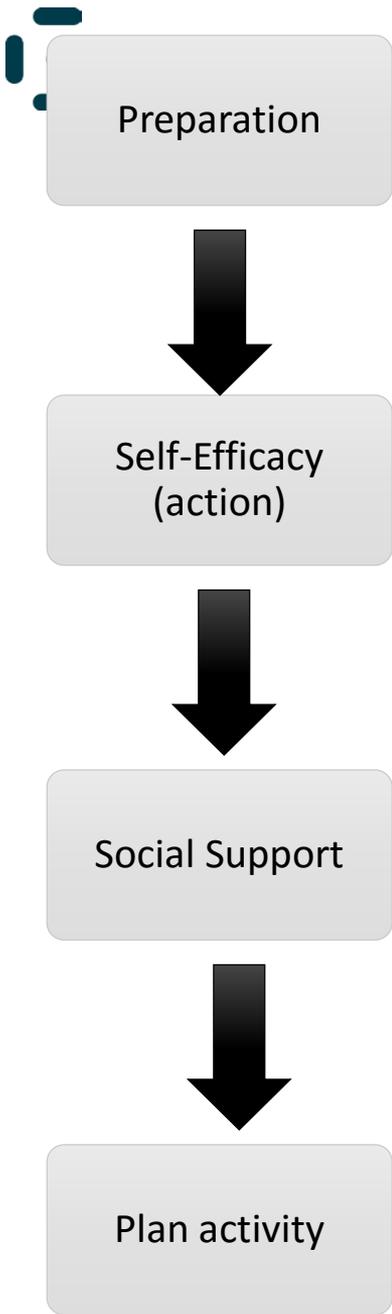
Promotion

- B: Physical activity improves the quality of sleep.



Stage of change





SMS tailored to answers (max 1 per day)

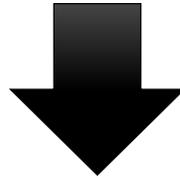


What do you think that would be a challenge for you?

- It is difficult to convince the people around me that I really want to be more active
- To change my work habits
- ...



- ✓ It is difficult to convince the people around me that I really want to be more active



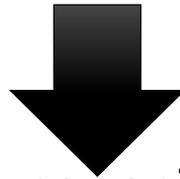
They say that the actions are more important than the words, can you impress someone around you by showing where it is nice to go for a tour?

Don't worry if someone is negative towards your efforts to change your lifestyle. It is your health and your decision. Good luck!





To change my work habits



Training increases the work capacity, maybe you should prioritize the training commitments in the same way you do with important work meetings.

Do you have an elevator at you job? If you go 11 floors up with the stairs every day, in one year you will have climbed Himalaya.

Can you walk or cycle during your lunch break?

Can you walk or cycle to your work?





Do you have many friends or family members that are physically active?

- Many
- A couple
- None

To inform others about your planned activity, makes you more committed.

Do you have a friend you can invite for a tour? You can discuss so nice when you walk side by side.

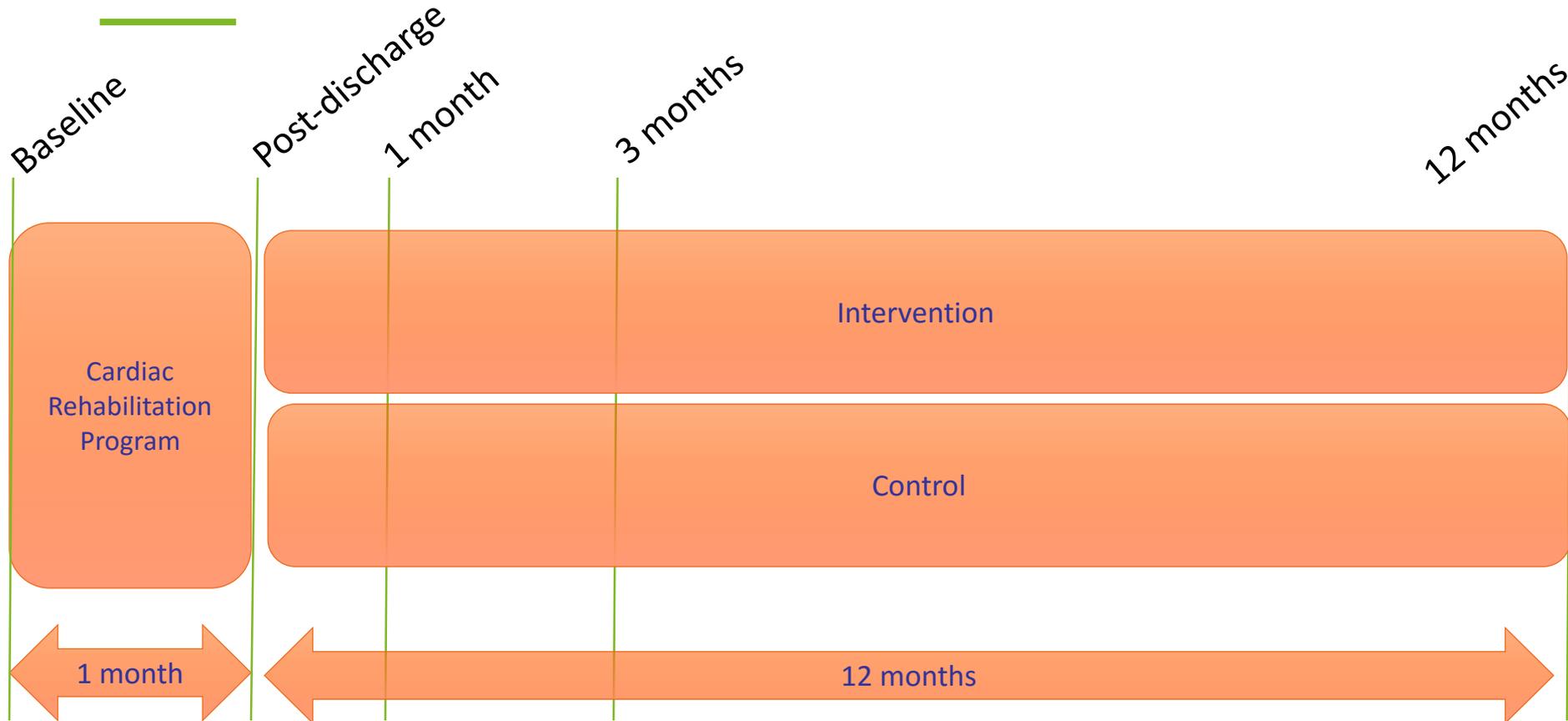
Is there a tour group in your municipality?

Do you keep in contact with your new friends from the rehabilitation?

Did you write something on the discussion forum of ikkegideg.no?



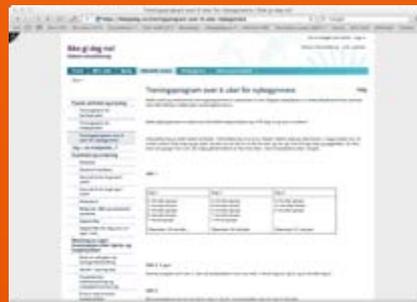
Intervention timeline



Control group



Intervention group



(the same with control group)





Baseline variables	Tailored group, n=29	Control group, n=38
Age (years), mean (95% CI)	59.5 (56.3-62.8)	58.8 (55.8-61.7)
Women, n (%)	7 (24)	8 (21)
BMI, mean (95% CI)	30.4 (28.8-32.0)	29.0 (27.3-30.4)

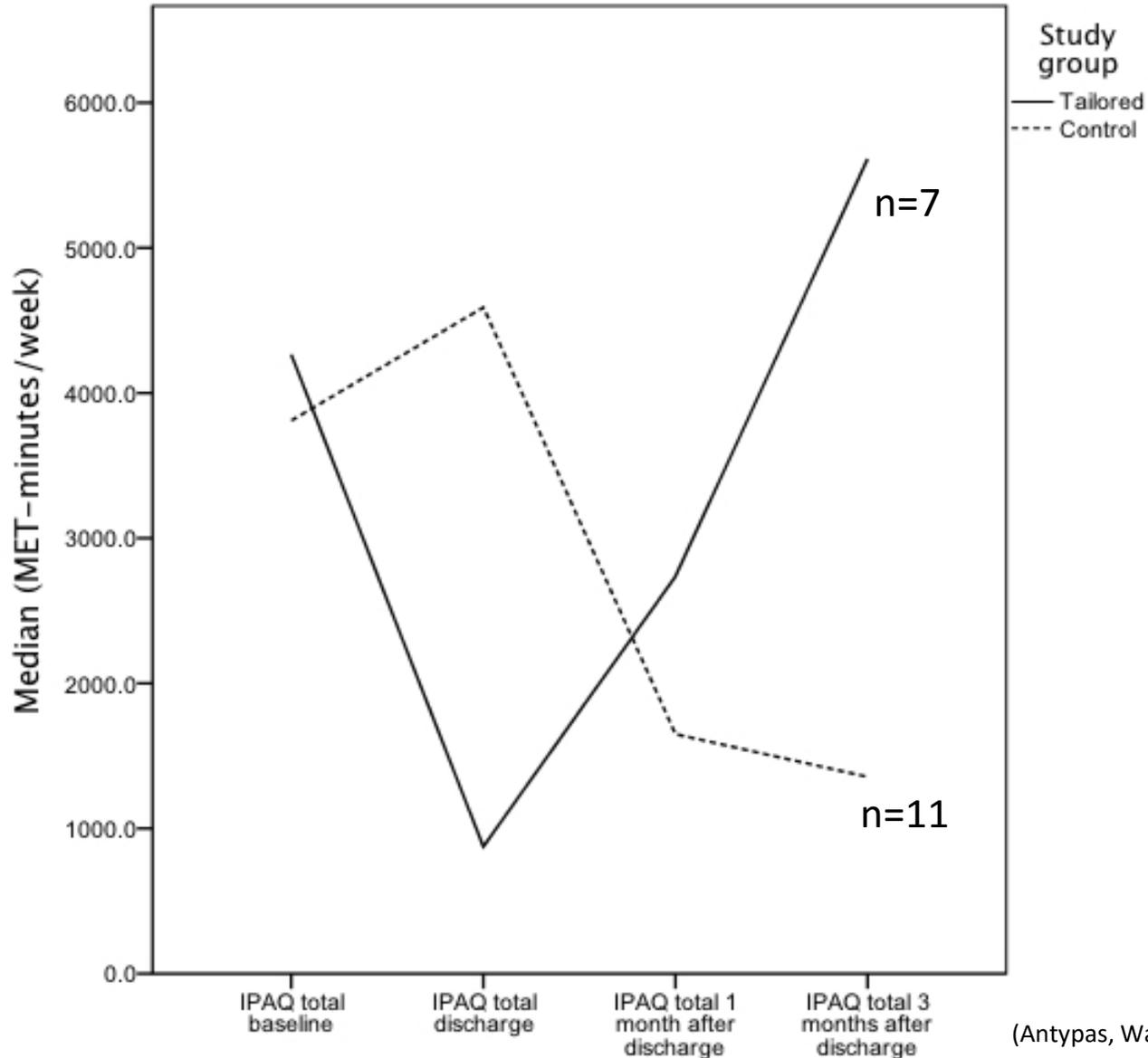
Antypas K, Wangberg SC

An Internet- and Mobile-Based Tailored Intervention to Enhance Maintenance of Physical Activity After Cardiac Rehabilitation: Short-Term Results of a Randomized Controlled Trial

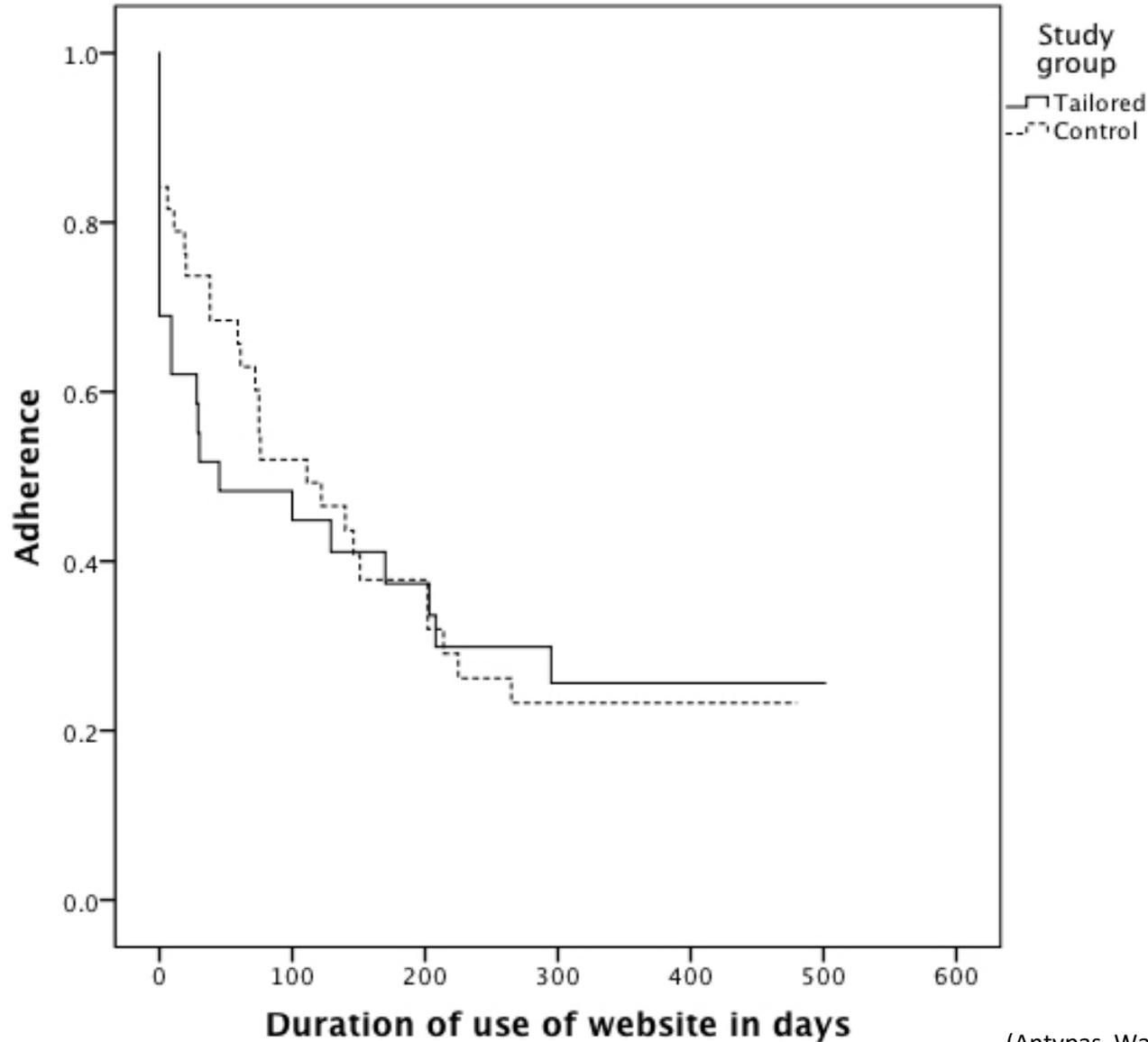
J Med Internet Res 2014;16(3):e77



Tailored group had higher physical activity at 3 months.



But high drop-out and small sample.





Luckily there is a bigger picture

- mHealth VS usual care had better ability to reach exercise goals and less anxiety. Gandhi et al. CJC 2016

- mHealth has the potential to change lifestyle behaviour

Pfaeffli Dale et al. EJPC 2016



Health behavior theories can create a solid foundation to support cardiac rehabilitation.

User involvement was useful, even stronger involvement would be better.

RCTs are challenging.

Women's participation

Elderly and technological literacy



Thank you!

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