

A Randomized Controlled Trial Testing a Social Network Intervention to Promote Physical Activity Among Adolescents by using Smartphones.

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HEPA 2017, Zagreb

MyMovez Wearable lab

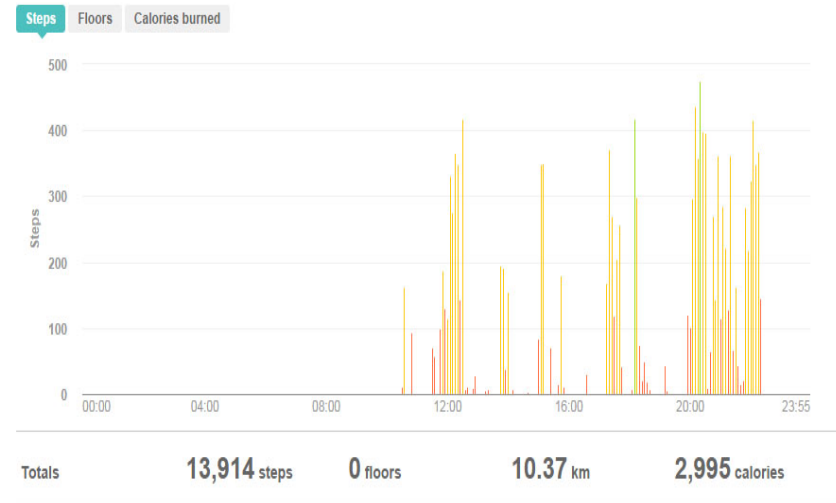
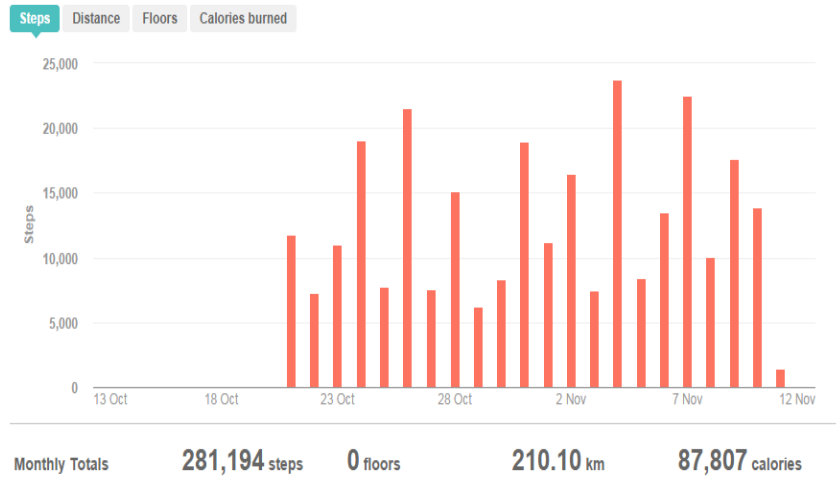


Fitbit Flex



Step
count per
day

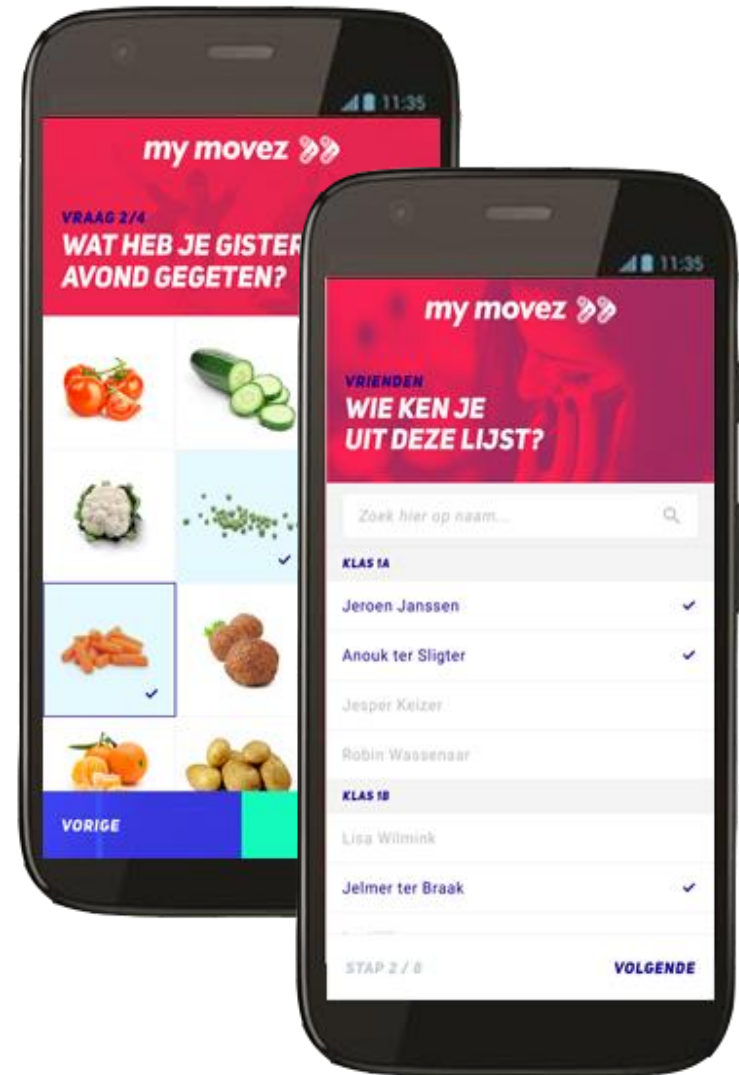
Step
count per
minute/
Minutes
MVPA



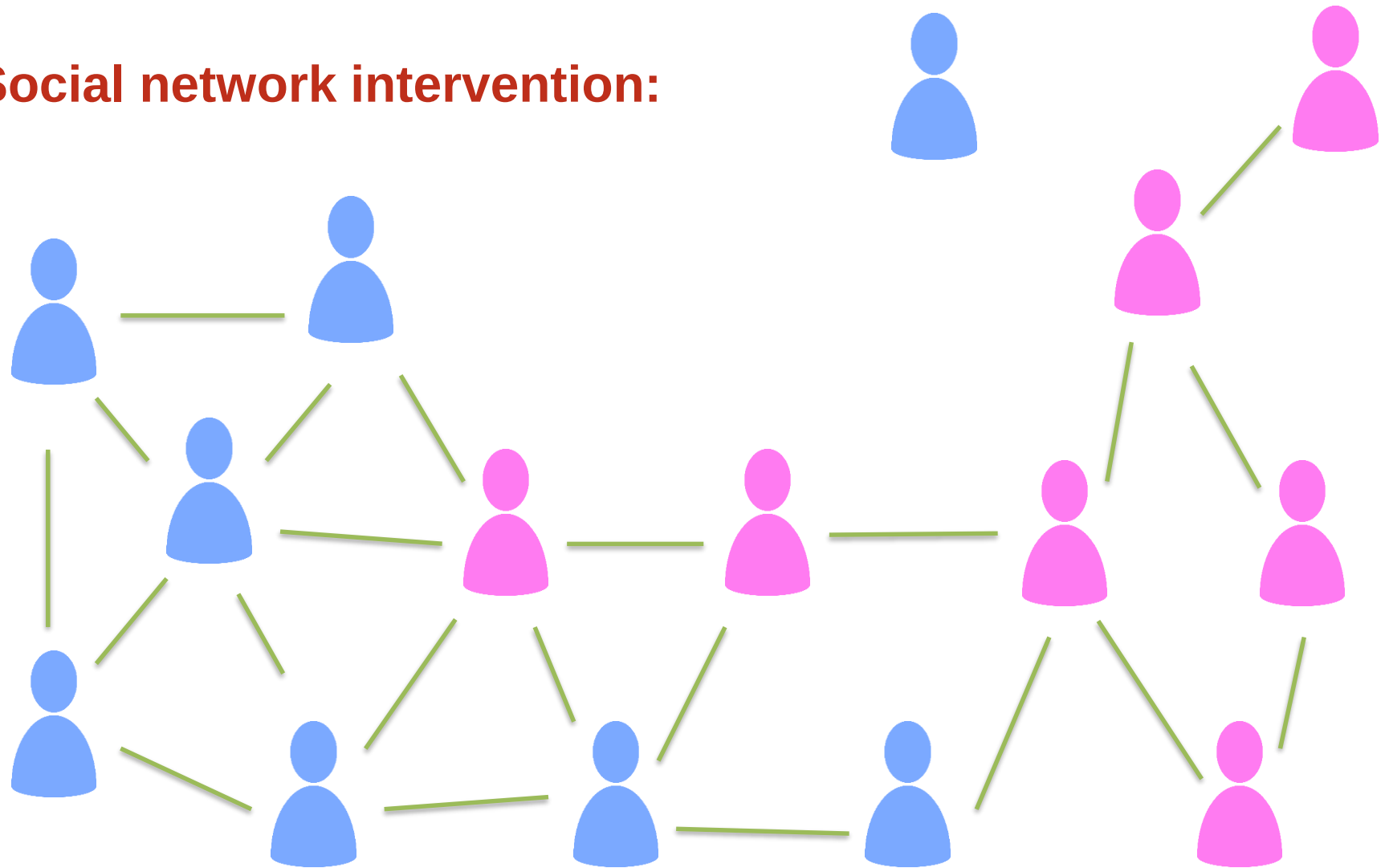
Smartphone

- Communication with Fitbit and server
- Questionnaires (e.g. Athletic competence)
- Assessment of social network
 - Friendship
 - Advice
 - Etc.

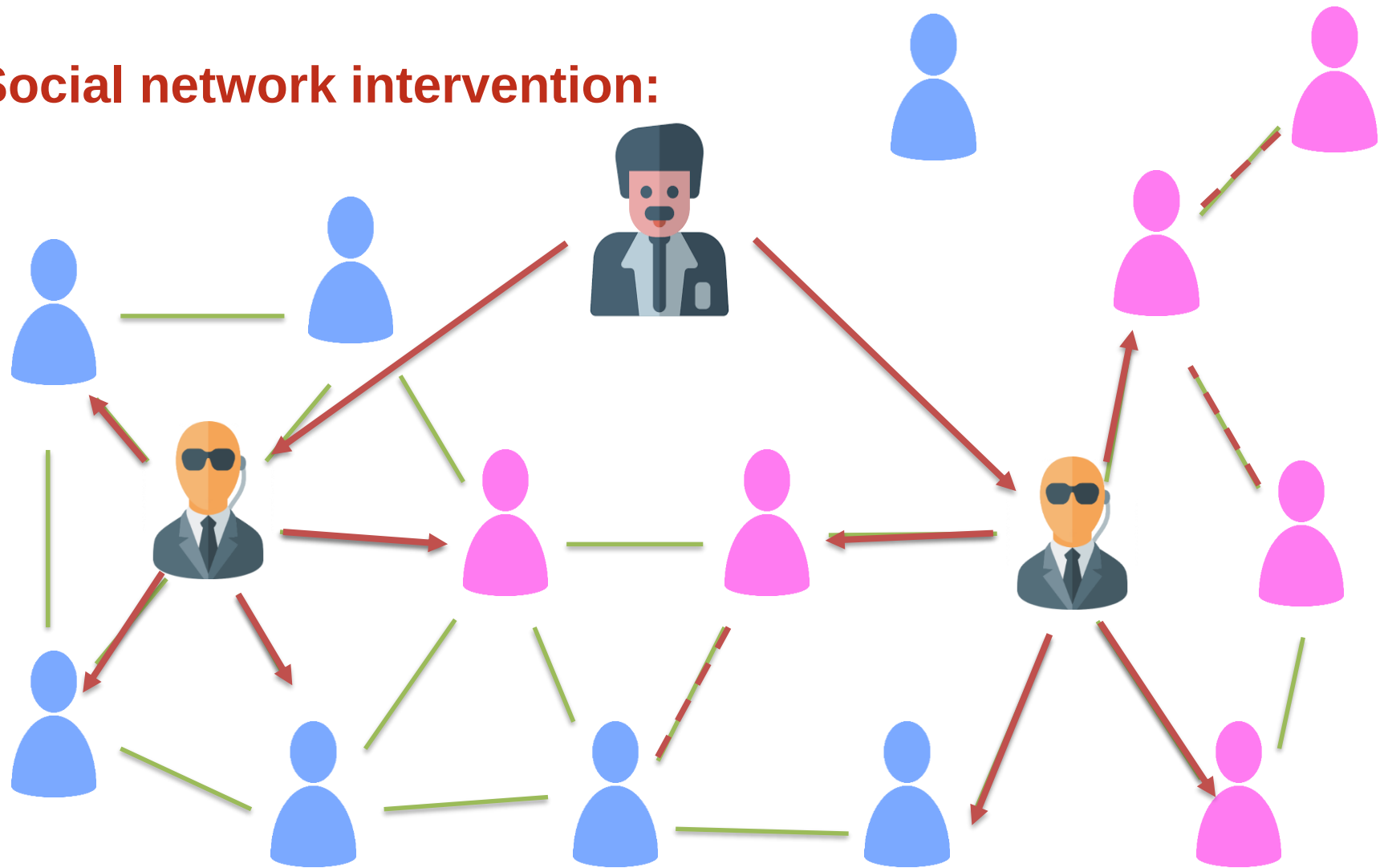
Other functionalities



Social network intervention:



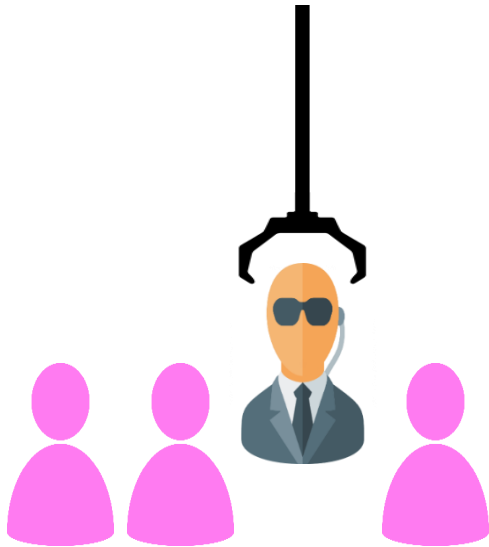
Social network intervention:



Adjustments on social network intervention

A: Selection

- network position
- team of Influence agents

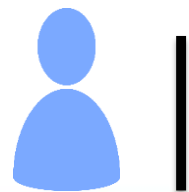
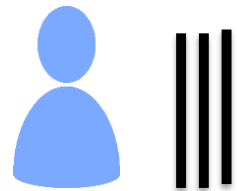
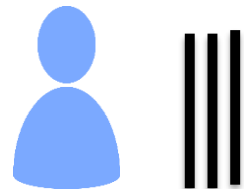
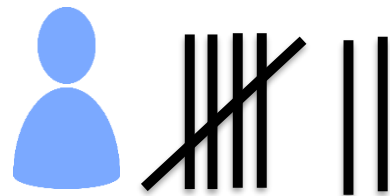


B: Training

- on smartphones



A: How to select the influence agents

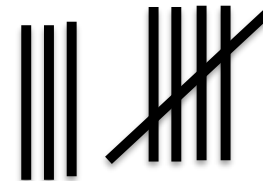


Indegree Centrality



Top 15-20%
of the class

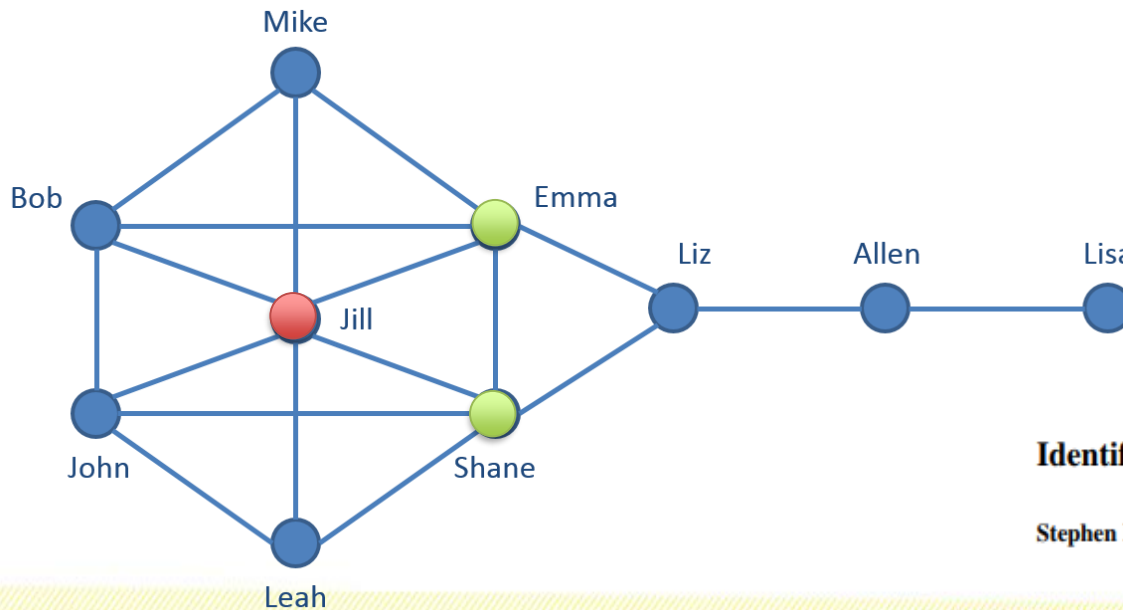
Result =
Most popular individuals



A: How to select the influence agents

Centrality

- Indegree (nominations)
- Closeness (average shortest paths to all members)



Identifying sets of key players in a social network

Stephen P. Borgatti

Team of Influence Agents



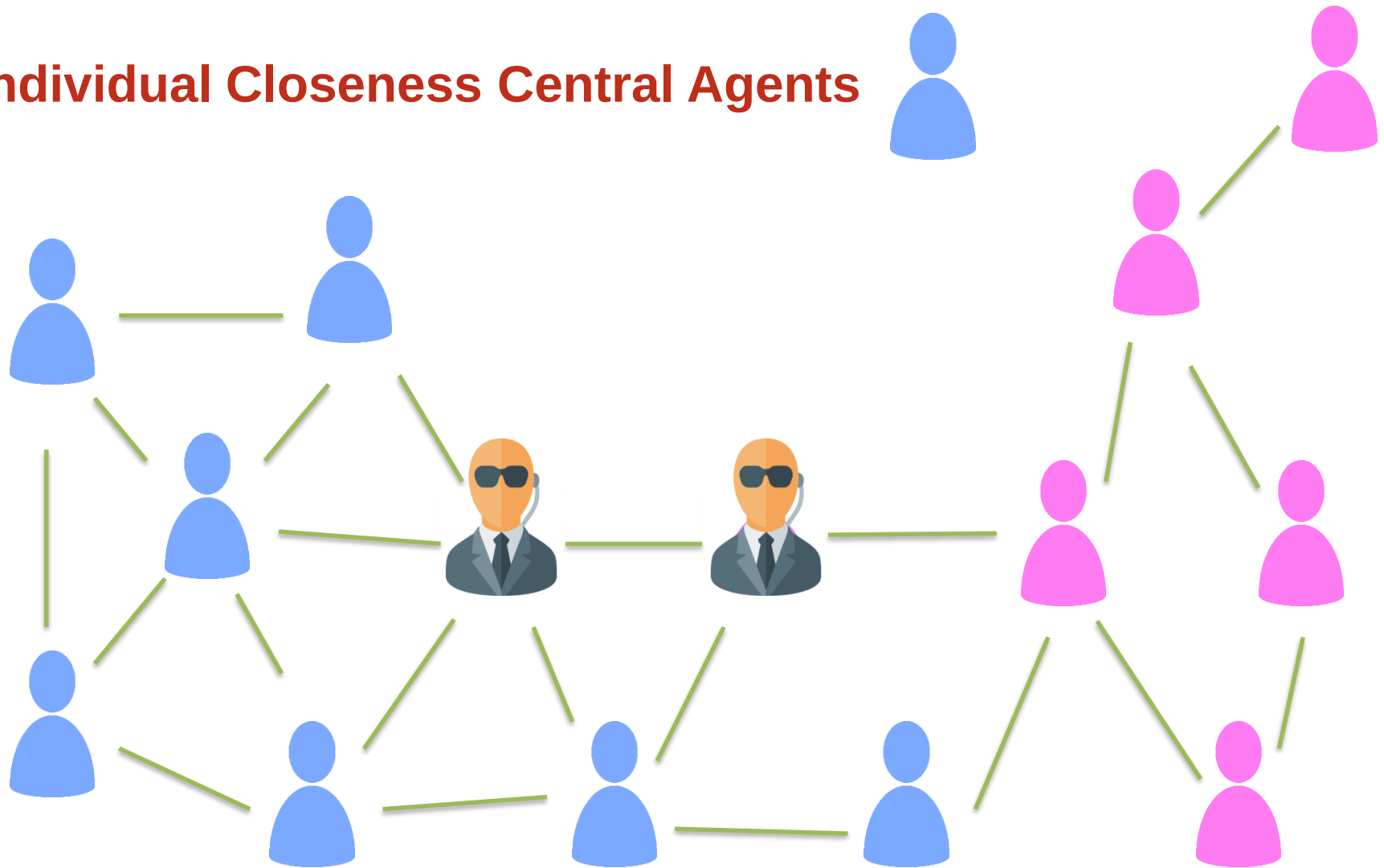
Package 'keyplayer'

April 16, 2016

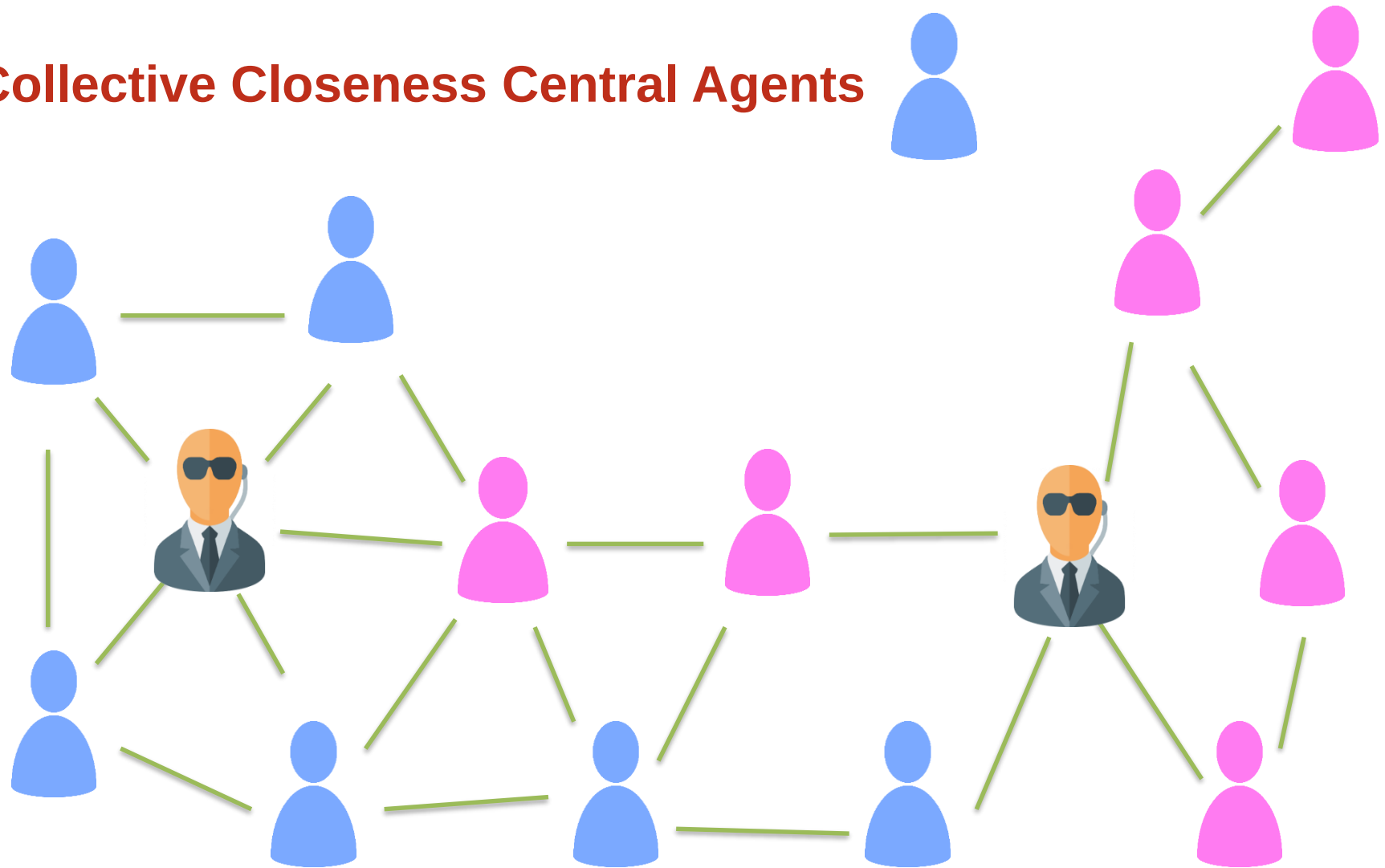
The 'greedy search algorithm'



Individual Closeness Central Agents



Collective Closeness Central Agents



B: How to train the influence agents



Multi-day training sessions



Mobile sessions

B: How to train the influence agents



‘Your role as
influence agent’

Provide
information
and fun facts



A social network-based intervention stimulating peer influence on children's self-reported water consumption: A randomized control trial

Crystal R. Smit*, Rebecca N.H. de Leeuw, Kirsten E. Bevelander, William J. Burk, Moniek Buijzen





How to:
Influence the
physical activity
of classmates

Ask for personal
strategies and
preferences
[Self determination/
Self persuasion]





Create
commitment by
asking whether
they accept the
role.

Keep in touch
with the
influence
agents via the
app



Sample

Active parental consent for participation

1 School

- 11 Classes (5 intervention classes)
- 190 participants (46% male)
- 11 to 14 years old ($M = 12.17$ years, $SD = .50$)

Influence agents:

24 approached:

- 1 declined
- 4 no reaction
- 19 accepted role. 3 or 4 influence agents per class.

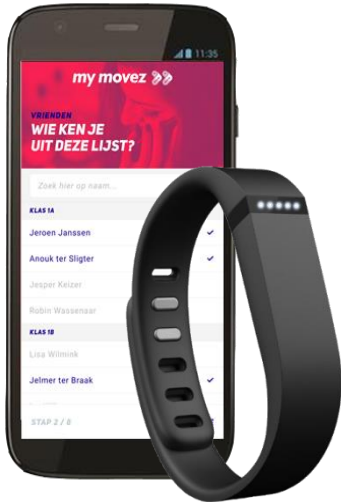
November

1 week

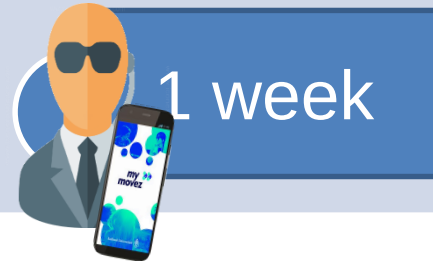


Demographics

Social network
questions

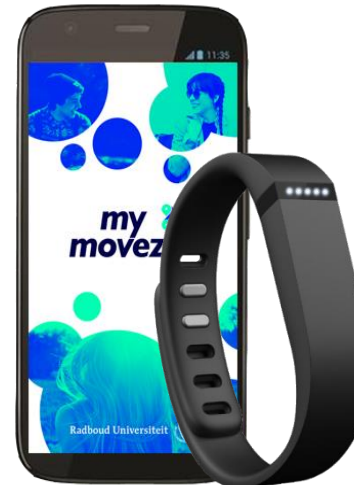


December

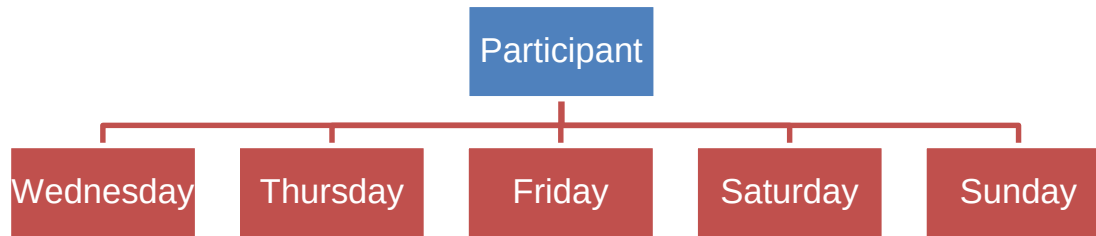


1 week

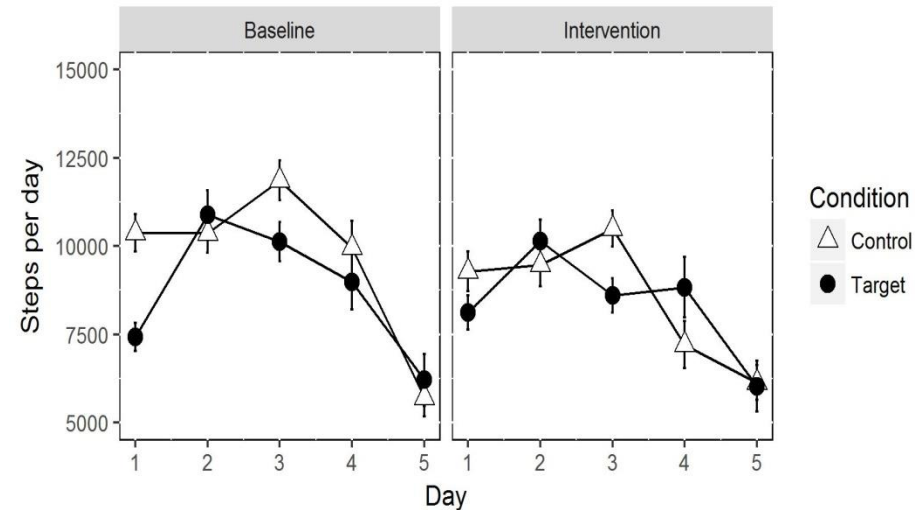
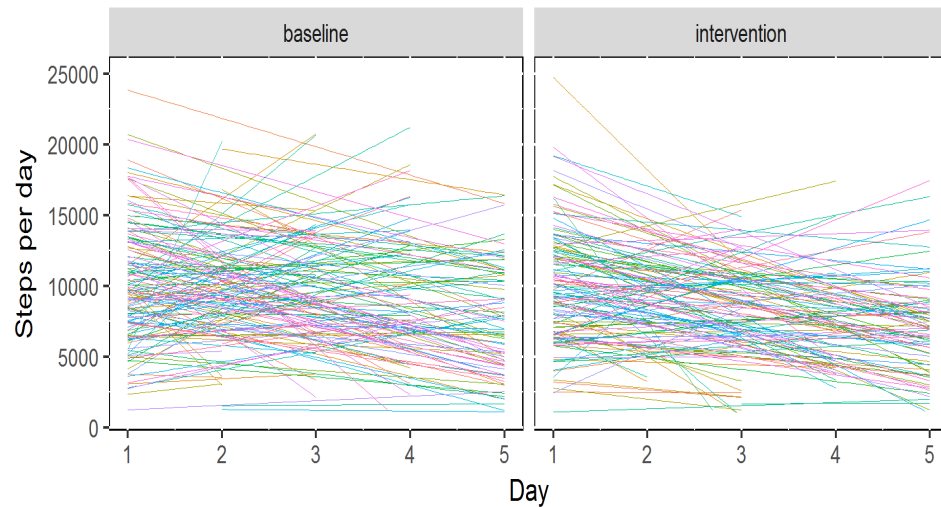
Athletic
competence



Hierarchical structure: Multi-level approach

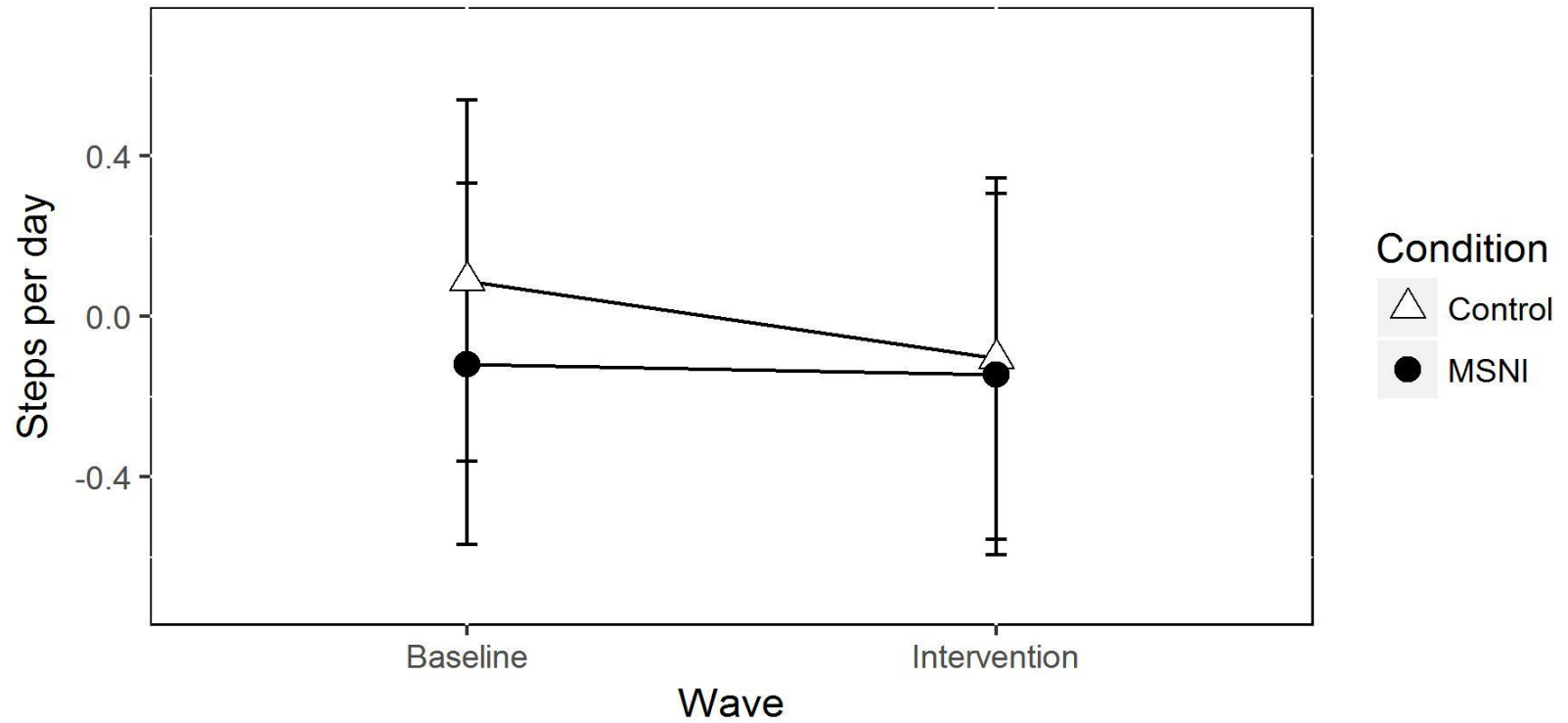


Imputation:
Multiple Multilevel
imputation



Multi-level model with Random Intercepts per Child and Day

			s^2	b	SE	DF	p	95% CI
Random	Participant	Intercept	0.16					
	Day	Intercept	0.13					
		Residual	0.62					
Fixed		Intercept		.75	1.09	411.47	.49	[-1.39, 2.89]
		Measurement period		-.18	.08	39.243	.033*	[-.34, -.01]
		Condition		-.14	.10	426.30	.151	[-.33, -.05]
		Sex		-.39	.09	223.25	<.001*	[-.56, -.21]
		Age		-.04	.09	456.15	.67	[-.21, .14]
		Athletic competence		.18	.04	455.43	<.001*	[.09, .26]
		Measurement Period * Condition		.04	.10	85.05	.66	[-.15, .24]



Discussion

- Perceived distance between the influence agents and researchers
- Could not test the effect of closeness central vs degree central influence agents

Limitations

- One big school
- Relatively short intervention period
- Active parental consent
 - No classes with <60% participation

Messages for policy and practice

- Social processes in interventions
- Theoretical implications in social network interventions.
- Positive feedback on the infographic.



Contact information

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