

Adherence has greater impact on function and behavioural complexity improvement than group allocation in young seniors at risk of functional decline



Robert-Bosch-Krankenhaus

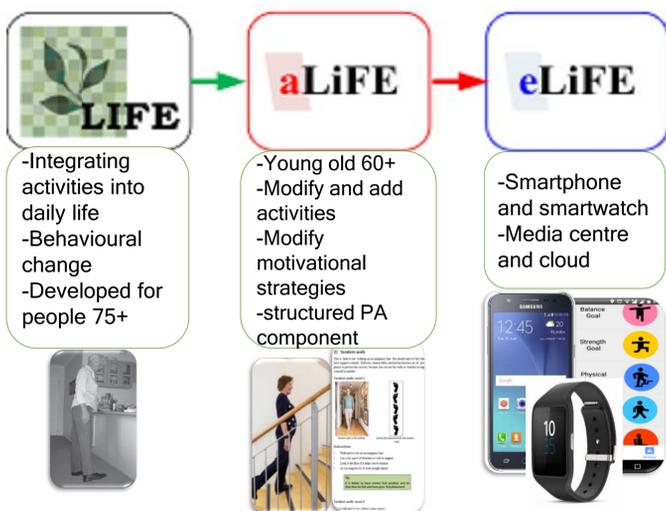
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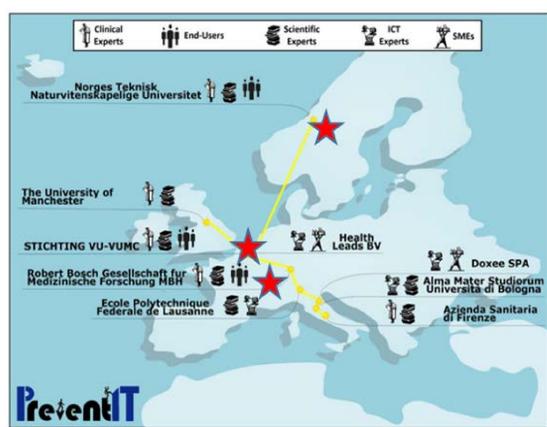
Background and aim

Numerous intervention programmes to promote mobility (physical performance and activity) are 'on the market'. However, **adherence to interventions, a recognised treatment-effect moderator, is a challenge, especially over longer periods.**

Aim: to identify the determinants of adherence to a tailored home-based intervention and the impact of adherence on outcome measures.



Methods



Inclusion criteria
 -61-70 years old
 -Retired or working less than 50%
 -Not regularly exercising
 -Not meeting PA WHO recommendations

Determinants of adherence collected prior to randomisation. Treatment effect was calculated depending on predicted adherence levels.

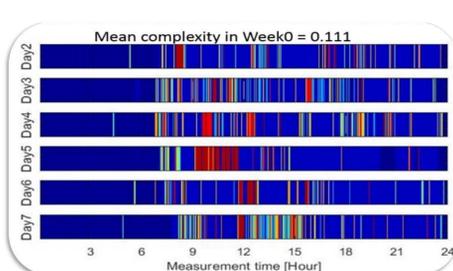
Exercise adherence rating scale (EARS) was completed by all participants after 6 months

Primary outcome

Late Life Function and Disability Index

Subjective rating of function and disability, for basic and advanced lower and upper limbs

Behavioural complexity



Quantifying variation in physical activity and intensity using wearable sensor-derived physical activity data

Results

Participant characteristics

- 86 men and 94 women (66.3±2.45 years)
- Mean gait speed 1.4 (±0.2) m/sec
- Baseline LLFDI scores 73.4±12.2 out of 100
- Mean complexity value 0.362±0.095
- Mean EARS score (aLiFE/eLiFE) 16.1±5.1 after 6 months

Determinants of adherence

Variable	B (SE)	Multivariate β (95%)
Medication	-0.39 (0.22)	-.187 (-.829 to .041)
CES-D score	-0.20 (0.08)	-.249* (-.360 to -.042)
Risk screening - moderate category	-0.06 (0.03)	-.213* (-.118 to -.002)

CES-D: Center for Epidemiologic Studies Depression Scale; *significant p<0.05

Impact of adherence independent of group allocation

Variable	B (SE) (95%CI)	β	p-value
LLFDI BLE §	1.24 (.53) (.19 to 2.28)	.135	.020
LLFDI Dis Lim §	2.38 (.56) (1.27 to 3.49)	.264	.000
Complexity mean	.011 (.01) (.001 to .02)	.177	.037
CES-D	-.997 (.32) (-1.64 to -.36)	-.245	.002

§ Late Life Function and Disability Index, BLE: Basic Lower Extremity; Dis Lim: Disability limitation

Adherence X group allocation interaction

In favour of the intervention group, with increasing adherence

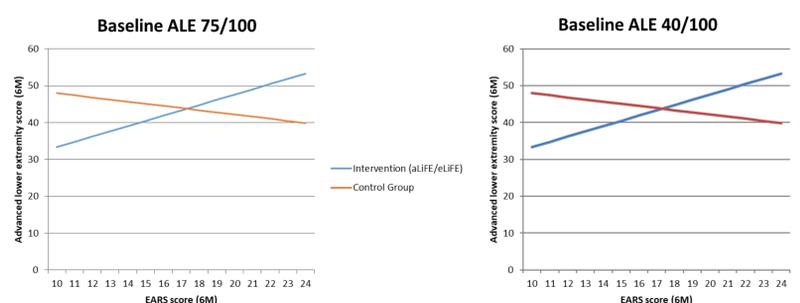


Fig 1: Interaction between group allocation and adherence level, with impact greatest if poor baseline scores and high level of adherence

Conclusion

Adherence to the protocol is significantly associated with better lower extremity function and behavioural complexity above and beyond the intervention components.

Barriers to adherence such as depressive symptoms or polypharmacy should be addressed as part of a pre-intervention to achieve the best treatment effect possible.

