TRISEARCH Zentrum für Präventionsforschung

Physical Activity (Cross-Cutting Issue 3)

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Relevance and Aims

Regular physical activity is one of the keystones in chronic disease prevention whereas increased sedentary time is associated with higher risk of premature all-cause and cardiovascular disease mortality (Lee, Lobelo et al. 2012; Thorp, Healy et al. 2010; Healy, Dunstan et al. 2008). The cross-cutting issue 'physical activity' implements the topic of physical activity in the different subprojects of TRISEARCH.

Fig. 1: Physical activity assessment tools (Actigraph GT3X+ and GPAQ)

The aims of the cross-cutting issue include:

1) the investigation of the relationship between health literacy and health behaviour, i.e. physical activity and sedentary time,
2) the comparison of health behaviour in the target groups of the main studies,
3) the evaluation of intervention effects regarding health behaviour in the longitudinal main studies (subprojects WebApp, AtRisk and HeLEvi).

Methods

Up to now, data on objective and subjective physical activity and sedentary behaviour have been recorded in three subprojects (HeLEvi, AtRisk and the pilot study of WebApp; see Fig. 2) by actigraphy and questionnaire (see Fig. 1).

In subproject 4 (EMPOWER), data on physical activity counselling as well as data on sedentary behaviour are still assessed in patients and health care professionals by questionnaire.

Hence, only preliminary results on aims 1) and 2) can be reported here.

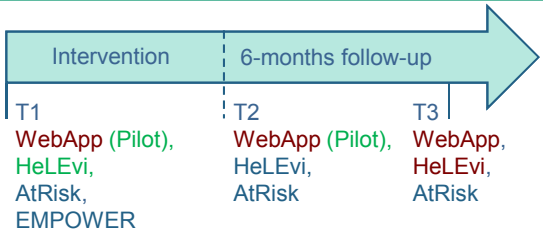

Fig. 2: Points of data collection (green: finished, blue: in progress, red: not started yet).

Results

1) Controlling for age, gender and body-mass-index, partial correlations were found between subscales of the Lennartz health literacy questionnaire („Fragebogen zur Gesundheitskompetenz") and physical activity. For the whole sample of WebApp and AtRisk participants, a weak partial correlation was found between the subscale „responsibility" and questionnaire daily sitting time ($r=-0.15$, $df=241$, $p<0.05$). In the smaller subsample of the actigraphy measurements, „responsibility" correlates moderately strong with daily measured steps ($r=0.42$, $df=32$, $p<0.05$). Moreover, subscale „handling with health information" and objectively measured vigorous activity show a moderate partial correlation ($r=0.39$, $df=32$, $p<0.05$).

2) A total number of 64 actigraphy-datasets (see Fig.3) was obtained with HeLEvi participants showing best compliance (i.e. average wear time: 9.8 out of 10 possible days) and statistically significant more vigorous physical activity than participants of AtRisk ($p<0.05$). However. HeLEvi participants also show the longest daily sitting time (616.1 ± 44.1 min/day). Differences between WebApp and AtRisk participants were only found in objectively measured vigorous physical activity ($p<0.05$).

The questionnaire data reveals that participants of AtRisk seem to obtain their physical activity mostly at the workplace while WebApp participants are mostly active in leisure time (see Fig.4).

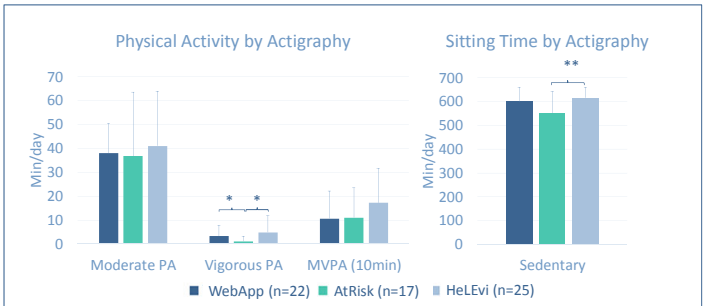

Fig. 3: Results from actigraphy measurements in WebApp, AtRisk and HeLEvi.

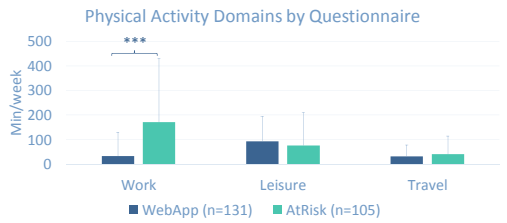

Fig. 4: Domains of physical activity in WebApp and AtRisk.

Conclusion

The cross-cutting issue „physical activity" provides insight into health behaviour of different target groups of health prevention programs. Moreover, the actigraphy measurement can be seen as an additional benefit since data on the relationship between health literacy and objectively measured physical activity is scarce. However, the used sample sizes are small and have to be increased in the future.

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Literature

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