

1607 Board #4 May 30 1:30 PM - 3:30 PM

### Reducing the Uncertain Geographic Context Problem in Physical Activity Research: The Houston TRAIN Study

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**PURPOSE:** The Uncertain Geographic Context Problem (UGCP) arises when studying the effect of static area-level factors (e.g. parks within walking distance from home) on individual-level outcomes, like physical activity. The UGCP is largely due to temporal uncertainty, as people may spend significant portions of the day outside of the geographic area captured by static spatial measures. The aim of this study was to determine if spatial exposure indicators for physical activity research are improved by including measures of both the home and work neighborhood environments.

**METHODS:** Baseline data from the Houston TRAIN Study were used (n=153). Participant home and work addresses were geocoded, and two spatial exposure indicators were built per location: transit stops within 1.25 Km, and parks within 2.25 Km (counts). A categorical variable was built for each feature, with four levels based on median splits: high access at home & work, high access at home & low access at work, low access at home & high access at work, and low access at both locations. Weekly minutes of moderate to vigorous physical activity (MVPA) were measured with wGT3X-BT Actigraph monitors using Freedson cut-points. Linear regressions estimated the association between the combined 'home plus work' access variables and MVPA. Models were adjusted for sex, age, education, and race/ethnicity.

**RESULTS:** Relative to the 'low-low' group, having high access to transit in both the home and work neighborhood was associated with 3.7±1.2 additional weekly minutes of MVPA (p=0.039). Similarly, those having high access to parks both in their home and work neighborhood had 2.5±1.9 (p=0.044) more weekly minutes of MVPA than those with low access in both locations. Having high transit or park access only in one of the two studied neighborhood locations was not significantly associated with MVPA (p>0.05).

**CONCLUSIONS:** When examining the effect of both transport and leisure related urban infrastructure on MVPA, the UGCP is improved by incorporating measures of both the home and work environment. Pending confirmatory studies, our results suggest that approaches exclusively focused on improving the built environment of residential neighborhoods may have limited impact on physical activity. A citywide, systems level approach may be warranted.

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1608 Board #5 May 30 1:30 PM - 3:30 PM

### Developing a National Network of Physical Activity Promotion: The Case of Germany

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**PURPOSE:** Physical activity supports the health of human beings of every age group in various ways. However, the worldwide prevalence of physical inactivity is high and many people do not reach the amount of physical activity that is recommended by physical activity guidelines. National Action Plans (NAPS) and Initiatives try to counteract this situation but have not always been successful. To support targeted measures in such NAPS, it is necessary to gain knowledge of relevant actors, professional groups and multipliers as well as their structural connection. In Germany, an explorative study addressed 2 goals accordingly: (1) the identification of relevant actors, professional groups and multipliers of physical activity promotion, and (2) the analysis of structural relations among these actors as well as the formulation of recommendations for the sustainable development of a national network of physical activity promotion.

**METHODS:** Qualitative expert interviews, a subsequent network visualization and an analysis for network development were carried out.

**RESULTS:** It became apparent that the field of actors in the area of physical activity promotion is very heterogeneous and extensive with regard to different forms of actors, sectors of society and administrative levels. Overall, 128 actors were identified, of which 22 actors are considered to hold key positions. Concerning the multipliers, 19 current and 17 potential ones were identified. Structural relations among actors are sparse.

**CONCLUSIONS:** For carrying out a network development of physical activity promotion, various prerequisites, benefits, and barriers were revealed. Subsequently, recommendations that contribute to the development and effective governance are presented. The study provides a first detailed consideration of the structure of physical activity promotion in Germany and thereby offers a perspective, which can also inform NAPS around the globe.

1609 Board #6 May 30 1:30 PM - 3:30 PM

### Exercise Interventions Improve Drug Abstinence at an In-Patient Rehabilitation Center

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Exercise training likely enhances coping skills and sobriety among patients with substance use disorder. Better examination of the mechanisms producing these changes may help identify more effective interventions.

**PURPOSE:** To test the effect of a vigorous exercise prescription on drug abstinence in voluntary rehabilitation patients.

**METHODS:** 25 male subjects in a drug treatment program underwent a 12-week intervention, which included cardiovascular exercise, resistance training, and supportive psychotherapy. Five days a week, subjects were asked to participate in either yoga with mindfulness practices or action-based induction therapy lasting two hours; there was also a 90-minute exercise boot camp. Data collected were exercise adherence, exercise performance, sobriety and relapse rates, and an assessment of emotional coping skills. Chi-squared tests and t-tests compared exercisers to non-exercisers; logistic and linear regressions tested the effect of exercise behavior on measurements of coping and sobriety.

**RESULTS:** Subjects had experienced frequent relapse (5±8 episodes) prior to the current admission. Across the sample, 84% were sober on completion of the program, 8% relapsed during treatment, and 36% relapsed after treatment. During the program, 84% exercised regularly, 68% practiced yoga, and 60% followed a disciplined diet. Bench press max improved over the program (39%; p<0.001), as did squat max (55%; p<0.001) and deadlift max (70%; p<0.001). Among patients who exercised regularly, 91% were sober on completion compared to 50% of patients who did not engage in regular exercise (p=0.043). Owing to a small sample of patients who relapsed during treatment (N=2), the difference in exercisers who relapsed during treatment (5%) and non-exercisers who relapsed (25%) was not significant (p=0.171). Following treatment, 29% of exercisers and 75% of non-exercisers relapsed (p=0.076). The odds of successfully managing adverse emotional states when they arose increased 20-fold in subjects who exercised regularly (p=0.036). Each additional session of yoga per week predicted a 20-day increase in the longest duration of sobriety (p=0.016).

**CONCLUSION:** Exercise appears to exert a positive effect on drug and alcohol sobriety and coping skills in a population that struggles with frequent relapse.