

Dyadic health behaviour change: A Tandem project on couples' co-regulation of physical activity

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Regular physical activity has many health benefits. Nevertheless, many individuals fail to consistently adhere to the current physical activity recommendations of engaging in at least 150 minutes of moderate activity per week (World Health Organization [WHO], 2016). Volitional strategies such as action planning or action control have shown to be effective in translating good intentions into physical activity (Sniehotta, Scholz, & Schwarzer, 2005). Additionally, married and co-habiting individuals often try to and succeed in co-regulating their partners' health behaviour, including partners' levels of physical activity (Lewis & Butterfield, 2007; Martire, Schulz, Helgeson, Small, & Saghafi, 2010). Thus, considering the social context for people's self-regulation is highly relevant. Recent studies provided evidence that dyadic interventions (i.e., involving a close other) are effective for behaviour change (e.g., Prestwich et al., 2014). Randomized controlled trials with a dyadic intervention group allow the investigation of the dyadic nature of co-regulation in health behaviour change, and provide great opportunities to examine a variety of new research questions.

EHPS Tandem Project

Meeting for the first time in 2013 at the CREATE workshop, we quickly discovered our shared research interests in the dyadic nature of health behaviour change and longitudinal data analysis. At this time, we were both working on similar

research projects, that is, collecting longitudinal data on couples' co-regulation to increase their physical activity measured by accelerometers. Corina was involved in a randomized controlled trial examining the effects of dyadic action control under the supervision of Urte Scholz at the University of Bern (A Dyadic Action Control Trial in overweight and obese Couples; DYACTIC; Scholz & Berli, 2014). Jan was involved in a randomized controlled trial on dyadic action planning under the supervision of Nina Knoll and Silke Burkert at the Freie Universität Berlin (Days in motion; DiM). We realized that our research projects had parallels in many ways and that collaborating on this topic would provide great synergies for maximizing our theoretical and methodological expertise. With large data sets from dyads to be analyzed in 2016, we thus applied for the EHPS Tandem Grant. The receipt of the Tandem Grant allowed us to work jointly on two research questions regarding couples' physical activity co-regulation.

Jan's visit to New York

From April 7th to 18th, a first meeting took place at Columbia University in New York City where Jan brought data from the DiM project which investigates the effectiveness of a dyadic action planning intervention for physical activity in 346 adult couples.

Dyadic action planning refers to a target person and a planning partner jointly planning the target person's health behavior change (e.g. Burkert, Scholz, Gralla, Roigas, & Knoll, 2011). Although the planning partner is not necessarily involved in the

planned behaviour, we aimed to examine whether dyadic planning was nonetheless related to being more active together (i.e. co-activity). In pre- and post-intervention assessments, couples' dyadic planning and co-activity were assessed by questionnaires. We explored the data by looking into the target persons' and partners' time courses of dyadic planning and co-activity. Furthermore, Actor-Partner-Interdependence Models (APIM; Cook & Kenny, 2005) with dyadic planning as IV, co-activity as DV, and relevant covariates were analyzed. The process of building up our research question(s) and applying appropriate dyadic models was supported by personal meetings with Niall Bolger and Patrick Shrout (Corina's supervisors), as well as a presentation in the lab meeting with faculty and students. Following the lab meeting, we set ourselves action plans for data analyses to be done until our next meeting in Berlin.



Visiting the Hudson River promenade with the Statue of Liberty in the background

Corina's visit to Berlin

Approximately one month later, from May 11th to 19th, the second meeting was at Freie University Berlin where Corina brought along dyadic diary data from the DYACTIC project. This longitudinal project investigated the effectiveness of a dyadic



After the Health Psychology colloquium with Nina Knoll and Diana Hilda Hohl

and individual action control intervention in 121 overweight and obese adult couples to promote physical activity (Berli, Stadler, Inauen, & Scholz, 2016).

Previous research has shown that partners' health behaviour change is positively linked (Jackson, Steptoe, & Wardle, 2015). Our goal was to examine how intimate partners covary in their daily physical activity, and whether a target person's activity would affect his or her partner's activity (i.e., spill-over effect), drawing on daily assessments from triaxial accelerometers during 28 consecutive days. Our joint data analyses included that we graphically inspected couples' activity trajectories over time and computed multilevel models testing the effect of the target person's activity on the partner's activity. We iteratively extended this model to explore the temporal process, systematic differences across couples, and possible explanations for the spill-over effect. We had the opportunity to personally meet with Nina Knoll (Jan's supervisor) and to share and discuss our preliminary work with faculty and students at the weekly colloquium of the Health Psychology division at the Freie Universität Berlin. In a last follow-up meeting, we discussed how to proceed with our work and laid out the next steps of our collaboration.

Lessons learned

Overall, the Tandem Grant was an excellent opportunity to strengthen our collaboration towards a greater understanding of co-regulatory processes in health behaviour change. We familiarized ourselves with different procedures to analyze dyadic longitudinal data, e.g. the APIM (Cook & Kenny, 2005). Also, we expanded on our toolbox, benefitting from each other's expertise in how to model multilevel data in Mplus and SPSS. Aside from refining our analytical skills, we had extensive discussions on the topic of dyadic interventions in general. We shared our experience on what might work and not work, and what we still don't know. It was inspiring to get to know each other's projects and data in detail, and share our experience with managing large, longitudinal projects. The Tandem Grant enabled us to benefit from each other's international network and getting to know each other's team culture. In both teams, we were able to discuss our ideas with the respective senior supervisors and to share our latest findings at the end of the visit with the whole team in the context of lab meetings and colloquia.

Of course the Tandem Grant also provided us with unique opportunities for shared time beyond work. Joint meetings in cafés allowed us to explore the cities from a local's perspective, we undertook co-activity by riding along the Hudson (yes, we indeed dyadically planned this event) and enjoyed Berlin by night from the top of the Fernsehturm. We really appreciate the extremely valuable opportunity the EHPS gave us by awarding the Tandem Grant.

Plans for the future

Our collaboration definitely does not end with the end of this short report. We will continue our

joint work, refining our analyses and preparing a joint publication for each of the topics. Results and implications of our data analyses will be brought into meetings and discussions of 2016's SYNERGY Expert Meeting (Topic: Social relationships and health: Collaborative and dyadic approaches) and EHPS Conference in Aberdeen. Receiving the Tandem Grant strengthened the link between our research projects, increasing their visibility in the couple research domain, and leading into future collaborations with other health psychology researchers.

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