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The Effect of Social Information In A Technology Based Diabetes Prevention Program

Abstract:

Background: Studies show that an estimated 135 million people worldwide had been diagnosed with diabetes in 1995, and this number is expected to rise to at least 300 million by 2025 (Narayan et. al., 2000). It is one of the fastest growing diseases in India even amongst the poor and is expected to put a serious economic burden on both state and citizen’s resources (Hossain et. al., 2007; Bjork et. al., 2003).

This paper describes a work in progress study in India on a technology based behavioral intervention called ‘Habits Program’ to prevent diabetes. The participants of the study will be sedentary workers in the technology industry in India.

Theory: Social cognitive theory is informing the design of the intervention and social network theory is informing the design and analysis of the evaluation.

Intervention: Habits is an online lifestyle coaching program based on a landmark study of lifestyle based intervention in the US called The Diabetes Prevention Program (DPP) (Knowler et. al., 2002). Habits program adapts this very successful program called DPP to the Indian lifestyle and changes the delivery mode and format from in person (in DPP) to online video and mobile based applications. The major components of the intervention are as
follows - The participants will watch one video online each week for 12 consecutive weeks and maintain an online food and activity tracking log which is available through both a mobile application as well as a laptop or desktop computer.

**Methods:** This intervention will be evaluated as a randomized controlled trial. It is commonly believed that support from a person's social network improves her ability to adhere to a new behavior. But the role of social networks in adoption of recommended health behaviors has not been studied very much. There is some evidence that strong ties in a social network matter more in helping a person change her health behaviors rather than weak ties (Centola, 2011), referred to as the "Social" condition in the experiment design.

Our second hypothesis is that a weekly phone call from a human coach to check on the participants' progress will significantly increase adherence ("Human Intervention" condition) to the program. Thus we are proposing that a cross factorial design (2X2) be used in the randomized controlled trial. The first factor is Social Information while the second factor is Human Intervention. A power analysis was conducted to determine the sample size for the study. Each condition will have 66 participants.

Outcomes used to measure the efficacy of the intervention are:

- Weight loss during the intervention
- Change in activity levels
- Change in number of calories consumed