

Does Readiness to Exercise Predict Weight Loss Success in a Lifestyle Modification Program?

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Introduction

The CDC cites diabetes as the 7th leading cause of death in the US with an estimated cost of \$174 billion (in 2007 dollars); as of 2010, 79 million US adults were affected by pre-diabetes.¹ Identification and reduction of risk factors for diabetes becomes crucial in light of these figures.

The Families United/Familias Unidas study, conducted in 2009-2010 by Siwik, Kutob, et al^{2,3} was an intervention involving diabetes risk factor reduction of primary participants and their support persons during 12 group office visits over a 6 month period. This intervention involved dietary and lifestyle counseling. The modifiable risk factors (weight, blood pressure, dietary habits, etc.) of primary participants decreased by 15% after the 6 month intervention and decreased further to ~20% reduction at 12 months post intervention.^{2,3}

Primary participants had a greater risk factor reduction than support persons, despite a similar risk factor mix. This led the study authors to conclude that this could be due to primary participants' greater motivation regarding diabetes prevention.² Research on tobacco cessation has shown that motivation or readiness to quit is predictive of success with cessation and this 'readiness to change' has been validated in clinical research.⁴

Utilizing the original data collected in the Families United/Familias Unidas study, we studied readiness to change habits surrounding exercise as a proxy for motivation, which has been validated in research studies.⁵ Specifically, we tested whether exercise readiness to change was predictive of weight loss, a specific aspect of diabetes risk reduction targeted by the intervention.

- 1) Does self-awareness of readiness to change exercise habits predict short or long-term weight loss of those participating in a lifestyle modification program?
- 2) Similar to how motivation or readiness to quit tobacco is predictive of success with cessation, can readiness to exercise be used to predict weight loss success?

Methods

Thirty-nine primary participants and their supporters completed the 6 month intervention. Readiness to change exercise habits was assessed only once at baseline (t=0) before the intervention had begun. All participants (primary and support) were asked about their current and future exercise plans and were given 5 response choices, as illustrated in Figure 3.

We considered this group ("No, but I intend to in the next 30 days") as ready to change exercise habits. Mean weight loss in kg was the dependent variable of interest. Mean weight loss was compared for each response group at 6,12, and 18 months post-intervention. Analyses were performed using SPSS version 20.

Results

Fourteen participants indicated they were ready to change exercise habits at baseline. 8 were female and 6 were male (Figure 1). 8 were primary participants in the study, meaning they had at least 1 identified risk factor for the development of diabetes, and 6 were support persons (Figure 2).

At t=6 months (immediately post-intervention), they had lost a mean of 2.16kg, 4.85kg at 12 months, and 4.22kg at 18 months, as represented in Figure 3. None of these results were statistically significant (Table 1).

Exercise Readiness to Change: Female VS Male

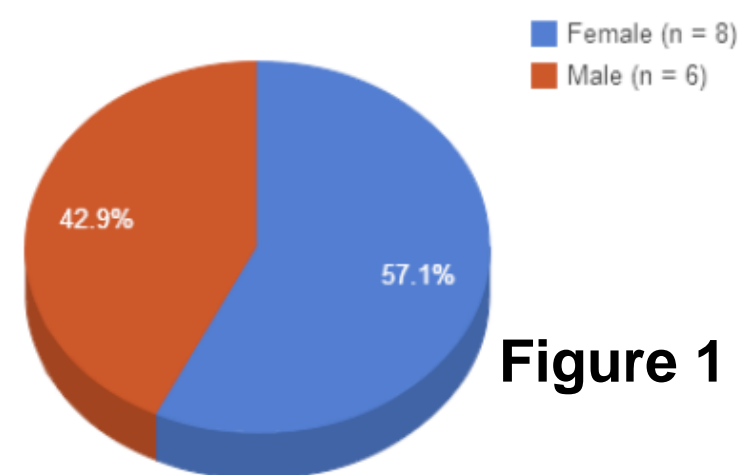


Figure 1

Exercise Readiness to Change: Primary Participant VS Support Person

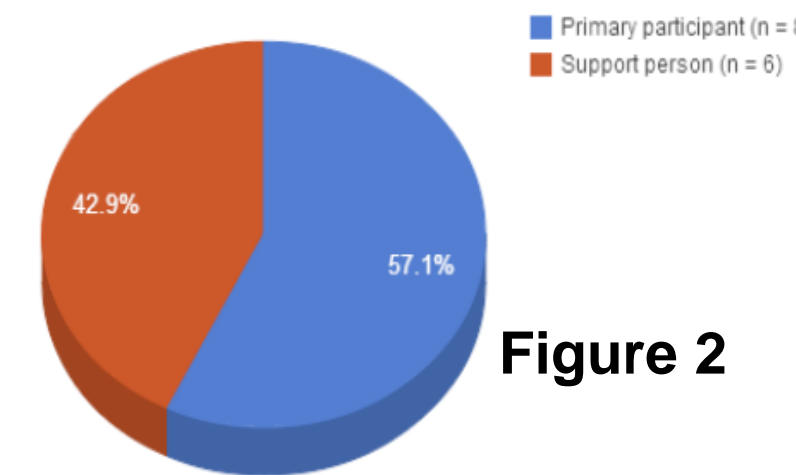


Figure 2

Table 1. Weight Loss by Readiness Group

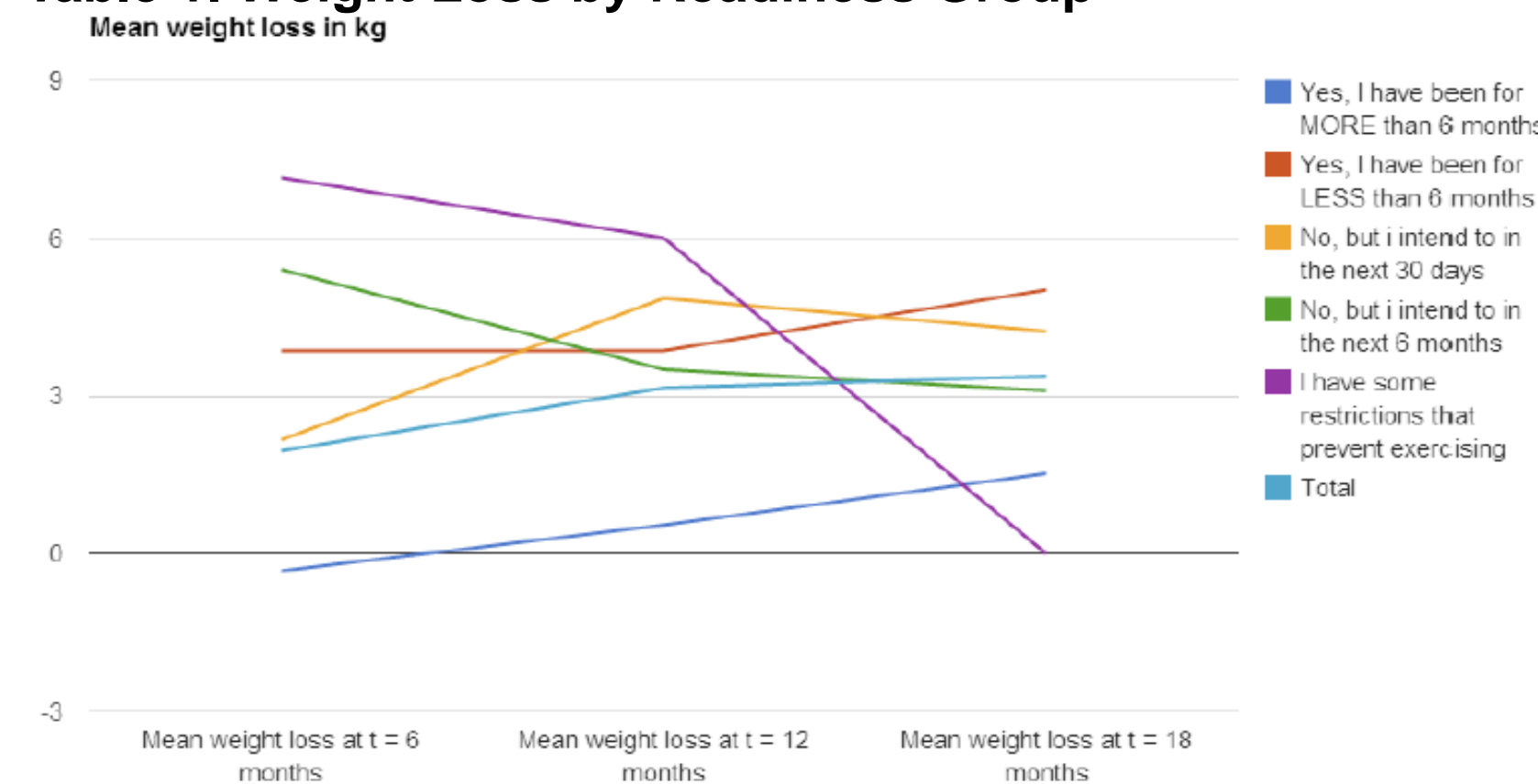


Figure 3. Mean Weight Loss by Readiness Group

	Mean weight loss (kg) at t = 6 months	Mean weight loss (kg) at t = 12 months	Mean weight loss (kg) at t = 18 months
Yes, I have been for MORE than 6 months	-0.3286 +/- 7.13738	0.5462 +/- 3.59852	1.525 +/- 7.19357
Yes, I have been for LESS than 6 months	3.8625 +/- 5.43663	3.8625 +/- 4.80117	5.0125 +/- 4.14572
No, but i intend to in the next 30 days	2.1643 +/- 4.61213	4.8538 +/- 7.14232	4.2273 +/- 7.54971
No, but i intend to in the next 6 months	5.4	3.5	3.1
I have some restrictions that prevent exercising	7.15 +/- 6.01041	6 +/- 7.07107	0
Total	1.9564 +/- 5.96123	3.1514 +/- 5.5907	3.375 +/- 6.55030
p - value	0.324	0.332	0.67

Conclusions

Our intent with this sub-group analysis was to determine if 'exercise readiness to change' could be used as a proxy for motivation and to determine if readiness for lifestyle modification could be used as a predictor for success for weight loss during a lifestyle modification program, not unlike how readiness to quit tobacco is a predictor of success with cessation.

The study size was small at 39 participants and was not sufficiently powered to produce any statistically significant results in our sub-group analysis.

While the 'ready to change' group did have sustained weight loss during the study period, it was not statistically significant due to the small sample size. With a larger population, we predict that those who indicate their readiness to make lifestyle changes will have success with long-term benefits of lifestyle modification, including sustained weight loss.

The authors of the original study had postulated that the long-term benefits of the intervention, not just limited to sustained weight loss, may have varied based on the participants' perception of their own risk for developing diabetes. With a sufficiently powered study, we predict that asking about readiness to change exercise habits would be a valid predictor of perception of baseline risk.



References

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