Effectiveness of a Web-based Intervention on Strength Training Adherence and Self-efficacy in Novice Female College Students

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**INTRODUCTION**

In order to improve bone and muscle health, American College of Sports Medicine (ACSM) recommends strength training for a minimum of 2 days per week with a focus on the seven major muscle groups. However, literature reports only 21.9% of men and 17.5% of women follow the ACSM strength training guideline, and 34% of women do not strength train at all. Literature also shows that Web-based interventions are effective for increasing physical activity in inactive populations.

**METHOD**

**Design and Participants**

This is a quasi-experimental, repeated measures study with thirteen college nursing students assigned to 4 groups. Female students who were not already meeting the minimum ACSM strength training guidelines were recruited. The four study groups are: 1) Web-based and exercise interventions (n=4), 2) Web-based only intervention (n=3), 3) Exercise only intervention (n=3), and 4) Control (n=3). Baseline measurements were taken, along with assessments at the end of three months and six months.

**Procedure**

Participants in groups 1 and 3 received a resistance training program to follow for the 6 months. Those in groups 1 and 2 received web-based interventions. Participants in those groups were put in a private access Facebook group which was used as a social and peer motivational platform. Two weekly prompt questions were posted in the Facebook groups, which were used to begin conversations and encourage socialization. Private emails with a Qualtrics survey were sent to each participant in all groups to measure their exercise confidence and adherence using a 10-point Likert Scale weekly. Data from the groups with web-based interventions were combined and those without were combined, creating two groups to study. Independent T-tests (a=0.05) were used to determine the effects of web-based interventions on adherence and confidence levels between the two groups. Dependent T-tests were also done for within group comparison.

**HYPOTHESIS**

The participants who received the Web-based intervention and a strength training program had the greatest confidence level and adherence rate compared to those who did not receive both interventions.

**RESULTS/DISCUSSION**

Due to missing data, only participants with responses to chosen weeks were included. Out of 13 participants, 7 were included in analysis with survey response rate of 54%. When both groups were combined, there was a significant increase in confidence levels when week 17 was compared to week 0, p=0.037. Increase in exercise adherence when Week 0 compared to Week 1 is approaching statistical significance of p=0.07 across both groups. During first 4 chosen weeks, confidence levels were higher in the Web-Based Intervention group. Due to heavy snowfall and to winter break, motivation to adhere to the exercise program at Week 12 in the Web-Based Intervention group may have been lacking.

**CONCLUSION**

The findings from this study suggest exercise adherence significantly increases during the first week, but returns to baseline after that, with only a slight increase by the end of the study. This significant increase over the first week correlates with the novelty of the web-based intervention for those in the Facebook group. Confidence level for all participants remained higher than baseline through the first four chosen weeks and ended slightly higher as well. Those who received web-based interventions had reported significantly higher confidence levels than those without, suggesting the effectiveness of web-based interventions. Future research can focus on setting up an accountability partner using a buddy system to increase exercise adherence among college students. Further research needs to be completed regarding using behavior change theories to develop interventions with high subject engagement.

**REFERENCES**

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