Promoting Physical Activity in Health Profession Students

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Problem/Purpose

Health profession students and college students in general are at risk for developing unhealthy lifestyle behaviors. Lack of regular exercise, alcohol and tobacco use and unhealthy eating and sleep patterns are just some examples of unhealthy behaviors. Regular physical activity can reduce one's risk for many diseases, assist in weight control and can help improve mood and mental health. In addition, health professionals are at risk for stress related problems. Healthy behaviors such as physical activity may help young professionals to live healthy and productive lives.

The purpose of this study was to explore an intervention to increase physical activity (for this study, their number of steps as measured by a pedometer) in students who attend classes at the College of Health and Human Services. The intervention group received daily affective text messages about physical activity..

The primary research questions:

1) Is there a difference in daily steps between those students who receive positive affective text message and those that do not?
2) Is there a relationship between perceived stress and daily steps in College of Health and Human Services students?

Background

Maintaining a healthy lifestyle is important not only to one's physical health but also to mental health. Physical activity and a healthy diet are controllable factors that can help decrease the risk of chronic disease and also have been shown to help patients recover from mental health problems such as depression and anxiety (Irazusta, Gill, Ruiz, Gondra, Jauregi, Irazusta, & Gil, 2006). College students are at risk for developing unhealthy lifestyle behaviors. Lack of regular exercise, alcohol and tobacco use and unhealthy eating and sleep patterns are just some examples of unhealthy lifestyle behaviors in which college students might engage (Stark, Hoekstra, Lindstrom Hazel, & Barton, 2012).

Technology has created several opportunities to promote healthy behaviors. A fairly new thought is to use mobile phone text messaging to remind people of tasks, to educate, or to send positive messages to encourage certain behaviors. The highest use of mobile phones is found to be with adolescents and younger adults (Fjeldsoe, Marshall, & Miller, 2009). Because of the high use of mobile phones in this population, using text messaging to encourage college students to exercise could be an effective method to start building lifelong healthy behavior habits. Sirriyeh, Lawton, and Ward (2010) conducted a randomized controlled trial to determine whether certain types of text messages could influence physical activities and found that those who were in the affective group had the most significant increase in their physical activity levels.

Research Design/Method

Design: A randomized controlled study modeled after Sirriyeh et al., (2010)

Measures:

1) A questionnaire that included demographic information
2) Perceived Stress Scale (Cohen, Kamarck and Mermelstein, 1983) &
3) Pittsburg Sleep Quality Index (Buysse, Reynolds, Monk, Berman Kupfer, 1989)
4) A pedometer with instructions for its use.

Procedure: The sample was randomly assigned to either the intervention or control group. Both groups completed a questionnaire that included measures 1, 2 and 3. Those in the intervention group received affective text messages on their cell phones daily. Both groups recorded the number of steps taken each day by texting a track phone purchased for the study. They recorded their steps for 14 days.

Intervention

The first day of the study, no messages were sent to allow collection of a baseline of steps. On the second day and every day after, the intervention group received an affective text message at 4 PM. Both groups received a message at 9PM reminding them to text in the number of steps for that day.

Affective Text Messages

1. Physical activity can make you feel happier. Enjoy your steps!
2. You can feel proud of yourself for the steps you have taken!
3. Taking steps today may help you feel that you can cope with problems better.
4. Increasing your number of steps can make you feel more energized!
5. The steps you take today may make you feel more confident.
6. The steps you take each day may help you focus in class.
7. Enjoy taking those steps today. It may make you feel less stressed.
8. Increasing your number of steps may put you in a good mood for the day.
9. Physical activity can make you feel more motivated.
10. Increasing your number of steps can make you feel more energized!
11. Physical activity can make you feel in charge of your life!
12. Increasing your steps each day can increase your self-esteem.

Sample

The convenience sample consisted of 134 participants who were randomly assigned to the treatment (n=67) and control (n=67) groups. Of those who enrolled, 13 did not provide any step counts and an additional 9 only reported data once. These participants were eliminated from data analysis, leaving a sample of 112. There were more participants remaining in the treatment group (n=58) than in the control group (n=54). The groups were equivalent in age, BMI, employment and gender.

In addition to demographic variables, several variables thought to influence steps were also collected. BMI was calculated from self-reported height (in inches) and weight (in pounds). Mean BMI was 23.3 (*SD*=4.9), with a range from 16.1 to 44.0. Self-reported hours of sleep per night ranged from 2.5 to 12 hours nightly with a mean of 6.8 (*SD*=1.3).

Variable	Mean (SD)	n(%)
Age	26.1 (9.2)	
Gender		
Female		98 (87.5)
Male		14 (12.5)
Marital Status		
Single		85 (75.0)
Other		27 (24.1)
Degree		
Undergraduate		77 (68.9)
Graduate		35 (31.2)
Program		
Nursing		74 (66.1)
Other		38 (33.9)
Work		72 (64.3)
Hours work per week	20.0 (13.1)	
BMI	23.3 (4.9)	
Hours of sleep/night	6.8 (1.3)	

Results

#1 **Is there a difference between those students who get positive affective text message and those that do not in daily steps?**

The mean number of steps reported by participants for the first two days of the study before the intervention started (Time 1) was calculated for all participants. The mean number of steps reported by participants for the 12 days after the text messages were sent (Time 2) was also calculated. There was no significant difference between the Time 1 and Time 2 steps for all participants (paired t= 0.216, df=111, p= ns). When the Time 1 and Time 2 steps for control group and the intervention group were calculated separately, neither group had a statistically significant change in steps (control paired t=-0.013, df=53, p=ns; intervention paired t= 0.237, df=57, p=ns).

#2 **Is there a relationship between perceived stress and daily steps in health profession students in the sample at the College of Health and Human Services students?**

The mean PSS score for this sample was 15.5 (SD=6.1). When calculated by Pearson's r, there was no relationship between steps and perceived stress (r=-0.02, p=ns).

Because the mean PSS score was higher in this sample than in some other samples, other factors that might possibly be related to perceived stress were explored. Number of hours worked per week was weakly and negatively related to perceived stress (r=-0.211, p=.037). In addition, students who had more sleep disruptions also experienced more perceived stress (r=0.24, p=0.010).

Conclusion

- Use of mobile devise for reporting data may be useful for simple data, such as reporting of daily steps.
- Pedometers for research should be carefully tested to have instruments with precision and accuracy.
- The findings of this study did not support the findings of Sirriyeh, Lawton, and Ward (2010) on the effectiveness of affective text messages in improving physical activity.
- Mean PSS scores for this sample were higher than reported for other groups, indicating the importance of stress management for health profession students.
- Because of the stress related problems that health professions students may encounter, other interventions to increase physical activity as a stress reduction strategy should be explored.

Limitations

- Time of year made it difficult to walk outside due to the cold weather possibly limiting the number of daily steps
- Difficulties with pedometers due to malfunctions. Total of 24 participants reported that pedometer broke during study.
- Unable to obtain true baseline number of daily steps prior to study

References

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