FYE Cardiovascular Risk Awareness: A Living Learning Initiative

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Introduction

• The first year college experience includes significant lifestyle change that may predispose students to weight gain and subsequent cardiovascular disease.
• Previous research has documented weight gain, as well as other behavioral changes, likely to increase cardiovascular and other risk factors during the transition in the new college environment.
• Research has also strongly suggested that multiple risk factors for heart disease, the leading cause of mortality in the United States, actually begin in adolescence.
• Consequently, young adults have increasingly become the target of research investigating strategies for cardiovascular risk reduction and prevention.

Pilot Study

The purpose of this study was to investigate the impact of the first semester freshman experience on cardiovascular risk factor development.

Methodology of Pilot Study

• This study employed pre and post assessment of cardiovascular risk factors during the fall semester of students’ first year.
• Participants were thirty-one male and female freshmen, aged 18-22 years.
• Consent was obtained as required by the university Institutional Review Board for Protection of Human Subjects.
• Pre-testing was conducted during the first three weeks of the first semester and included a lipid panel with total cholesterol, HDL and LDL cholesterol, triglycerides, and fasting blood glucose (measured by finger stick following a 12 hour fast utilizing the Cholestech LDX system), body mass index (using Quetelet's Index calculation), skinfold measures, and resting systolic and diastolic blood pressure. Post semester testing was conducted 12 weeks later.

Results of Pilot Study

• Results indicated statistically significant increases from pre to post testing in total cholesterol (p<.000), LDL (p < .001), fasting glucose (p < .031), weight (p < .020), and BMI (p < .005). Triglyceride levels significantly increased (p=.015) for students living in dorms compared to those living off campus. In conclusion, results of this study suggest that first semester college experience may have a negative impact on total cholesterol, LDL, fasting glucose, and triglycerides.

Conclusions of Pilot Study

• This study suggests that the first semester college experience has a negative impact on total cholesterol, LDL cholesterol, and fasting glucose levels.
• This conclusion is supported by the observed 12% increase in total cholesterol, 15% increase in LDL cholesterol and 4% increase in fasting glucose from the beginning to the end of the semester (interestingly HDL improved 9%)
• Dorm Living as compared to living at home may have a negative impact on cardiovascular health, particularly as measured by triglyceride levels.

Implications for Current Research

This pilot study lead to the implementation of an educational program designed to take place in a Living Learning residential facility to increase first year students’ awareness of risks and strategies to promote health-fitness.

Introduction to Current Research

• Pilot study results indicate that risk factor intervention during the first year college experience may be timely and valuable.
• The current trend at many universities is to move from the traditional concept of dormitories to “living-learning” communities.
• “Living-learning” residential facilities are designed to foster positive academic and social connections for first year students, and present unique opportunities for continued research and development of new intervention strategies.
• Successful intervention during the FYE has potential to positively impact student health status during the first year of college, and may also result in behavioral patterns that increase academic success and retention. Added benefits may include initiation of lifelong behavior patterns that reduce later risk of cardiovascular disease.

Purpose of Current Research

• To conduct the Freshman Cardiovascular Risk Assessment and Personal Awareness initiative in the Living-Learning residential facilities during the FYE.
• To assess cardiovascular risk of participating students.
• To provide strategies for lifestyle risk reduction and health promotion.

Methodology of Current Study

• The program is conducted in the Living Learning campus environment.
• Participants are seven male and seven female freshmen (n = 14), aged 18-20 years, who live in the campus residential facilities.
• Pre test assessment of cardiovascular risk factors took place during fall 2009 semester of students’ first year.
• Post test assessment will occur in April, 2010.
• Pre-testing was conducted during the first three weeks of the first semester and included a lipid panel with total cholesterol, HDL and LDL cholesterol, triglycerides, and fasting blood glucose (measured by finger stick following a 12 hour fast utilizing the Cholestech LDX system), body mass index (using Quetelet’s Index calculation), skinfold measures, and resting systolic and diastolic blood pressure.
• Monthly educational programming targeting cardiovascular risk factor reduction is conducted in the Living Learning facility: Healthy eating on campus, Stress management strategies for campus survival, First year physical activity strategies, and Battling the freshman fifteen.

Fall Semester Pre-Test Characteristics of Living Learning Participants

<table>
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<tr>
<th>Age</th>
<th>TC</th>
<th>LDL</th>
<th>HDL</th>
<th>Glu</th>
<th>TG</th>
<th>TriGlycerides</th>
<th>BMI</th>
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<td>140</td>
<td>70</td>
<td>100</td>
<td>150</td>
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<td>25</td>
</tr>
</tbody>
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Data Analysis

• Pre and post data will be compared at the end of the academic year on all measures.
• All measures for Living Learning participants will be compared to age and gender matched control group of first year students.

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