Freshmen 15?
A program to establish healthy behaviors

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First Year Experience Conference
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TIME LINE:

• Preparation & Development (2004-2005)
• Implementation (2005-2006)
• Sustainability (2006 –2007)
Presentation Outline

- Goals and Mission for the Program
- Description of Program Elements
- Results from the Study of Freshmen Students
- Anecdotal Reports from Participating Students
- Peer Mentor Implications
- Discussion and Implications
PAC-CATS Mission

The purpose of the PAC-CATS grant program is to provide an intervention for first-year K-State students that raises awareness and promotes healthy lifestyle behaviors in the areas of physical activity, eating behavior, and stress management.

Helping students to develop these lifestyle behaviors can help reduce future risk of overweight and obesity.
PAC-CATS  Staff & Resources

- Student Services Consortium: Counseling, Health Ed., Recreation, Freshmen Class
- Funding from Sunflower Foundation: Health Foundation for Kansas
- Development of Process & Materials: Health Behaviors Assessment, Website, Incentives
- Training Students to Help Students
Healthy PAC-CATS Approach

Objectives for Freshmen

- Gain Awareness of Health Behaviors
- Have Knowledge of Health Guidelines
- Become Motivated to Change
- Set Personal Goals
- Learn Processes to Self Regulate
College is a Critical Time for Weight Gain

- 35% of college students may be overweight or obese. (National College Health Risk Behavior Survey)

- 60% of females and 32% of males want to lose weight. (National College Health Assessment)

- Critical moment for lifestyle patterns to be established
Major Barriers to Engage in Physical Activity and Healthy Eating

- Inability to manage stress -

- Poor time management/organization skills
- Inability to relax, sleep, regenerate
- Lack of problem solving skills
- Inability to cope effectively with stressors
How will students benefit from regular physical activity and healthy eating?

- Be more energized
- Maintain healthy weight/lean body mass
- Feel good about the way they look
- Feel physically stronger and mentally sharp
- Have positive social interactions
- Do better in school and work
- Better able to cope with stressors
Elements of PAC-CATS Program

1. Health Behaviors Assessment

Individual assessment and personalized feedback on:

- Eating behavior
- Physical activity
- Stress management

Pre & Post-Tests: Participants take the assessment at the beginning and at the end of the program
Your PAC-CATS Health Behaviors Assessment Feedback

I. Weight Status According to BMI*

<table>
<thead>
<tr>
<th>Classification of Weight Status by BMI</th>
<th>Weight Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI (lbs./in.² x 703)</td>
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<tr>
<td>&lt; 18.5</td>
<td>Underweight</td>
</tr>
<tr>
<td>18.5 – 24.9</td>
<td>Normal</td>
</tr>
<tr>
<td>25.0 – 29.9</td>
<td>Overweight</td>
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<tr>
<td>≥ 30</td>
<td>Obese</td>
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</table>

Your BMI is: 23

*Body Mass Index (BMI) is a ratio of your weight to your height squared. It is just one of many factors used to predict risk for developing chronic disease, such as heart disease, cancer, or diabetes. BMI is not a measure of body fatness. For more information, please visit [http://www.cdc.gov/nccdphp/dnpa/bmi/bmi-measure.htm](http://www.cdc.gov/nccdphp/dnpa/bmi/bmi-measure.htm)

Legend:

- - - Doing well  - - Could be improved  - Needs improvement

II. Eating Behaviors

<table>
<thead>
<tr>
<th>Category – Foods that should be consumed often (Recommended consumption)</th>
<th>Meeting recommendation</th>
<th>Close, but not yet meeting recommendation</th>
<th>Not meeting recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruits &amp; Vegetables (5 to 9 servings daily)</td>
<td>✓ ✓ ✓</td>
<td></td>
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<tr>
<td>Whole Grains (3 servings daily)</td>
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<td>✓</td>
<td></td>
</tr>
<tr>
<td>Low-Fat or Fat-Free Dairy (3 servings daily)</td>
<td>✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category – Foods to use in moderation or sparingly</td>
<td>Low Consumption</td>
<td>Moderate Consumption</td>
<td>High Consumption</td>
</tr>
<tr>
<td>High Fat Foods</td>
<td>✓ ✓</td>
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</tr>
<tr>
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<td></td>
<td>✓</td>
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<td>✓ ✓</td>
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<td>Sweetened Beverages</td>
<td>✓ ✓ ✓</td>
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2. Behavior Change Process

- Establish goals for increasing healthy behaviors, based on health assessment feedback:
  - I want to jog or use the aerobics machines at the Rec Center 3 times a week for 30 minutes a session.

- Establish Action Steps to reach goals:
  - Block off 1 hour for exercise on Mondays, Tuesdays, and Thursdays of each week in weekly planner.
  - Arrange to meet a friend at the Rec every Monday at a certain time.

- Design system to monitor behaviors and progress toward goals - which includes designing ways to reinforce your progress.
Goal Attainment:
Decrease total daily calories & increase whole grain foods in daily diet

Driving Forces that help you reach your goal:

- My desire to maintain my weight and be healthy.
- Eating with family and friends supports my healthy eating
- Knowledge that good nutrition will improve my health.

Restraining forces that prevent you from reaching your goal:

- All-you-can-eat food choices at dining center.
- Eating by Myself
- Eating Late at Night
- Poor Planning

Goal Attainment:
Decrease total daily calories & increase whole grain foods in daily diet

FORCE FIELD ANALYSIS EXAMPLE
3. Peer Mentors

- Participants have their own personal mentor who are students with knowledge in the areas of physical activity, nutrition, and stress management.

- Mentors help students set goals, design action steps, and monitor progress, and provide motivation.

- Mentors provide support (Students Helping Students)
4. Program Website with Resources

- The PAC-CATS website contains information, self-help tips and links to helpful resources in the areas of physical activity, nutrition, and stress management.

- It is a valuable tool for developing the knowledge and skills that help students be successful in their personal programs.
5. Incentives

Extrinsic reinforcement for participants may include:

- water bottles
- colored bracelets
- knap-sacks
- t-shirts
- pedometers
- journals
How Fit are KSU Freshmen Students?

- Baseline behaviors
- Readiness for change
- Educational intervention
- Intensive change intervention
- Outcomes
Baseline Sample
PAC-CATS Health Behaviors Assessment
(Fall, 2005)

- Norms (n=695) (m 306, f 387)
  - Education/A&S (n=450) Pre-test
    - Intensive Change Group (n=63) Pre- & Post-tests
    - Educational Group (n=75) Pre- & Post-tests
  - Agriculture (n=204) Pre-test
  - Business (n=41) Pre-test
- Control Group (n=145) Post-test only
Baseline Participants

- 695 KSU Freshmen (Fall 2005) -

- 306 Males (44%), 387 Females (56%)
- 18~19 Years Old (94.1%)
- College: Education/A&S (450), Agriculture (204), Business (41)
- White-non Hispanic (85.3%)
- Fraternity/Sorority Member (22%)
- Housing: Residence Hall (67.7%), Fraternity or Sorority House (10.7%)
- Work Hours: 0 hrs (75.6%), 1~19 hrs (18.4%)
Baseline Results

Body Mass Index

- Underweight (<18.5):
  - Female: 6.2%
  - Male: 2.6%
- Normal (18.5~24.9):
  - Female: 68.7%
  - Male: 58.4%
- Overweight (25.0~29.9):
  - Female: 15.5%
  - Male: 28.9%
- Obese (>30.0):
  - Female: 9.6%
  - Male: 10.2%

* BMI = \( \frac{\text{Weight (lb)}}{\text{Height (in)}^2} \times 703 \)
Baseline Results

**Physical Activity**

- **General Physical Activity**: 77.8% meeting recommendation, 20.4% close but not yet meeting recommendation, 1.7% not meeting recommendation.
- **Stretching/Flexibility**: 45.9% meeting recommendation, 18.1% close but not yet meeting recommendation, 36.0% not meeting recommendation.
- **Strength Training**: 42.7% meeting recommendation, 15.8% close but not yet meeting recommendation, 41.4% not meeting recommendation.

Percent of 695 College Freshmen
Baseline Results

General Physical Activity

KSU Freshmen

National Average (Age 18-24)

2003 CDC Physical Activity Statistic age 18-24
Baseline Results

Nutrition:
Foods that should be consumed often

- **Fruits & Vegetables**
  - Meeting recommendation: 40.5%
  - Close, but not yet meeting recommendation: 19.0%
  - Not meeting recommendation: 40.4%

- **Whole Grains**
  - Meeting recommendation: 18.6%
  - Close, but not yet meeting recommendation: 28.3%
  - Not meeting recommendation: 53.1%

- **Low-Fat Dairy**
  - Meeting recommendation: 17.1%
  - Close, but not yet meeting recommendation: 31.4%
  - Not meeting recommendation: 51.5%

Percent of 695 College Freshmen
Baseline Results

**Nutrition:**
Foods to use in moderation or sparingly

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<th>Close, but not yet meeting recommendation</th>
<th>Not meeting recommendation</th>
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<tbody>
<tr>
<td>High Fat Foods</td>
<td>27.6%</td>
<td>26.9%</td>
<td>45.5%</td>
</tr>
<tr>
<td>Caffeinated Beverages</td>
<td>19.6%</td>
<td>12.5%</td>
<td>67.9%</td>
</tr>
<tr>
<td>Regular Pop/Soda</td>
<td>20.9%</td>
<td>9.6%</td>
<td>69.5%</td>
</tr>
<tr>
<td>Sweetened Beverages</td>
<td>19.0%</td>
<td>11.9%</td>
<td>69.1%</td>
</tr>
</tbody>
</table>

Percent of 695 College Freshmen
Baseline Results

Alcoholic Beverages

Percent of 695 College Freshmen

- Meeting recommendation: 66.2%
- Close, but not yet meeting recommendation: 10.6%
- Not meeting recommendation: 23.2%
Baseline Results

Stress Management

- Time Management: 78.2% meeting recommendation, 20.8% close, but not yet meeting recommendation, 1.0% not meeting recommendation
- Relaxation Techniques: 51.9% meeting recommendation, 36.1% close, but not yet meeting recommendation, 12.0% not meeting recommendation
- Positive Thinking: 63.4% meeting recommendation, 33.1% close, but not yet meeting recommendation, 3.5% not meeting recommendation
- Creative Problem Solving: 77.2% meeting recommendation, 22.3% close, but not yet meeting recommendation, 0.6% not meeting recommendation

Percent of 695 College Freshmen
Baseline Results

Stress Impact & Sleep

- **Sleep**
  - Meeting recommendation: 58.4%
  - Close, but not yet meeting recommendation: 33.4%
  - Not meeting recommendation: 8.2%

- **Stress Impact**
  - Meeting recommendation: 48.1%
  - Close, but not yet meeting recommendation: 29.6%
  - Not meeting recommendation: 22.3%

Percent of 695 College Freshmen
Health Behaviors & Demographics
- Gender -

- Female students are better with eating behaviors, specifically in the areas of foods to use in moderation or sparingly (caffeinated, sweetened, alcoholic beverages, and regular pop/soda).

- Male students do more physical activities, specifically in strength training.

- Male students have less stress impacts, and use relaxation techniques more frequently.
Health Behaviors & Demographics
- Fraternity/Sorority Membership -

Fraternity/sorority members as compared to non-members:

- Lower BMI
- Greater fruits & vegetables consumption
- Greater physical activity (stretching/flexibility, strength training)
- Greater alcoholic beverages consumption
Health Behaviors & Demographics
- Housing Types -

1. Students with On-campus Housing
   (Residence Hall, Other University Housing):
   - Greater in fruits & vegetables consumption
   - Higher stage in readiness of exercise

2. Students living in Greek House or Off-campus House consume more alcoholic beverages.
Relationship of Health Behaviors to Students Success Variables

- GPA:
  - Alcohol Consumption
  - Readiness of Stress Management
  - Use of Creative Problem Solving Skill
  - Stress Impact
  - Sleep

- Variables being assessed:
  - First Year Retention Rate
  - Social Support
  - Involvement and Responsibility
Educational and Change Interventions

- **Option 1:** Intensive Change Intervention
  Assessment, Presentation, Website & Change Process

- **Option 2:** Educational Intervention
  Assessment, Presentation & Website
Qualitative Information for Option 1
(Intensive Change Intervention)

- Involvement level average 4 direct contacts
- Achieved average of 2 goals
- Satisfaction levels 97%
- Examples of goal attainment
Readiness: Exercise

Exercise

Mean Score

Pre-test  Post-test

Option 1 (n=63)
Increase: 44.4%
Decrease: 14.3%

Option 2 (n=75)
Increase: 37.3%
Decrease: 22.7%
Readiness: FV Consumption

Fruits & Vegetables

Mean Score

Pre-test  Post-test
1.0  2.0  3.0  4.0  5.0

p=.00  p=.00

Stage (Post-test)

5  4  3  2  1

Stage (Pre-test)

1  2  3  4  5

Option 1 (n=63)
Increase: 30.1%
Decrease: 9.5%
* 41.3% (stage 1) at pre-test

Option 2 (n=75)
Increase: 48.0%
Decrease: 8.0%
** 62.7% (stage 1) at pre-test
Readiness: Stress Management

Option 1 (n=63)
- Increase: 44.4%
- Decrease: 30.2%
- * 12.7% (stage 1) at pre-test

Option 2 (n=75)
- Increase: 34.7%
- Decrease: 28.0%
- ** 24% (stage 1) at pre-test
## Health Behavior Changes: Option 1 vs 2

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<tr>
<th>Profile Variables</th>
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<tr>
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<tr>
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<tr>
<td>General Physical Activity</td>
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* p < .05,  ** p < .01
Follow-up Study of Option 1 Students

N=39 (67% of 58 Option 1 students enrolled in Spring 2006)

F&V Consumption

1=Not meeting recommendation
2=Close, but not meeting recommendation
3=Meeting recommendation
Follow-up Study of Option 1 Students

Strength Training

1=Not meeting recommendation
2=Close, but not meeting recommendation
3=Meeting recommendation

N=39 (67% of 58 option 1 students enrolled in Spring 2006)
Replication Study

- Freshmen in Fall 2006 -

- Baseline Health Behaviors (N=591)
- Intervention Groups: Option 1 (N=65)  
  Option 2 (N=57)
- Life Satisfaction Scales Added in HBA
My life is close to my ideal

- Stringly Agree: 0.0%
- Agree: 7.6%
- Neither Agree or Disagree: 25.7%
- Disagree: 54.7%
- Strongly Disagree: 12.0%

Percent of 591 College Freshmen (Fall 2006)
Life Satisfaction Changes of Freshmen in PAC-CATS Intervention Programs (Fall 2006)

My life is close to ideal

1=Strongly Disagree
2=Disagree
3=Neither Agree or Disagree
4=Agree
5=Strongly Agree

Pre-test Post-test

p=.00
p=.03

Option 1 (n=65)
Option 2 (n=57)
# Health Behavior Changes: Year 2005 & 2006

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What did we learn about K-State students?

- Weight and health issues were present with a significant number of students.

- Awareness building using methods of assessment & education were steps that increased readiness for change.

- Involvement in programs of change & support produced significantly positive changes in health behaviors:
  15 of 17 areas for two cohort freshmen (Fall 05, Fall 06)

- Participant reports indicated that learning to self-regulate (set goals and carry through) increased confidence and transferred to other behaviors applied to many areas of their life.
MENTORING

Helping Students, Help Themselves
Mentors: First Year

- Recruitment
- Compensation
- Training
- Participant : Mentor Ratio
Mentors: Second Year

- Recruitment
- Compensation
- Training
- Participant : Mentor Ratio
Motivation

- Begin Where The Student Is
- Reminder E-mails
- Share Personal Experience
- Incentives
- Referral To Additional Resources
Problems Encountered

- Funding
- Time
- Variability
Future Directions?
Questions or Comments?

End of Slide Show

PowerPoint Slides:
http://www.k-state.edu/paccats/KSUPACCATS.pdf