

THEORY-DRIVEN DATA TO IMPROVE CHILDHOOD OBESITY REDUCTION TRAINING OUTCOMES

Jennifer Banas, MPH, MEd, EdD
Northeastern Illinois University
J-Banas@neiu.edu



Session Objectives

Objectives:

1. Discuss the role of teachers and schools in reducing childhood obesity.
2. Describe how a behavior theory could be used to design a valid evaluation tool.
3. Use data to suggest modifications for future program implementations.

INTRODUCTION

Obesity Statistics

- Childhood obesity has more than tripled in the past 30 years.
- In 2008, more than 1/3 of children and adolescents were overweight or obese.^{1,2}
- The percentage of children aged 6–11 years in the US who were obese increased from 7% in 1980 to nearly 20% in 2008.

Similarly, the percentage of adolescents aged 12–19 years who were obese increased from 5% to 18% over the same period.

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CDC. (2011, September 15) Childhood Obesity Facts. Retrieved from <http://www.cdc.gov/healthyyouth/obesity/facts.htm>

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Why Childhood Obesity Matters

As BMI reaches overweight and obese, risk for the following conditions increases:

- coronary heart disease
- type 2 diabetes
- cancers (endometrial, breast, and colon)
- hypertension (high blood pressure)
- dyslipidemia (e.g. high total cholesterol or high levels of triglycerides)
- Stroke
- liver and gallbladder disease
- sleep apnea and respiratory problems
- osteoarthritis (a degeneration of cartilage and underlying bone)
- gynecological problems (NIH, 2008)

This list does not include the short and long-term social or emotional impact, associated with weight bias(Jansen, 2007).



The Complexity of Childhood Obesity

- Identifying causes and solutions is confounded by the complexity of these contributing factors: **behavioral**, **environmental**, and **genetics** (U.S. Dept of Health and Human Services, 2001).
- Among behavioral and environmental factors, schools are both a **source** of and **solution** to the problem.

Schools: Source and Solution

How are schools both a source of and solution to the problem?



The Role of School in Childhood Obesity

Although schools can contribute to the problem, they also play a vital role in its reduction (Murray, 2007; U.S. Dept of Health and Human Services, 2007).

Examples of the wide-variety of school-based programs:

1. increasing water consumption (Muckelbauer, Libuda, Clausen, & Kersting, 2009)
2. classroom-based fitness instruction and distributing pedometers (Durrer & Schutz, 2008)
3. changing the kinds of playground equipment available during **RECESS** (Bundy, Lockett, Tranter, Naughton, Wyver, Ragen, & Spies, 2009)
4. recipe contests (Putre, 2009).

Best Practices

- **Programs, in general, have mixed results** (Flynn, McNeil, Maloff, Mutasingwa, Wu, Ford, and, Tough, 2006).
- **Programs with greatest success** (Flynn, Mcneil, et al.; 2006):
 - emphasized physical activity,
 - included stakeholders into the planning process,
 - performed long-term, comprehensive evaluation

The Programming Problem

1. Programs successful with one population might not work with the next; hence, there is a need for program planners to identify the **unique characteristics of their target audience**, as well as the **unique barriers and facilitators** to implementation.
2. Examples of how to best employ these practices are needed to begin understanding how school-based programming can best address childhood obesity.

SESSION AGENDA

Presentation Agenda

- Healthy Schools Campaign
 - Who are they? What do they do?
- Fit to Learn 2010-2011 Pilot
 - When, where, and who? What did it look like?
- Integrative Model of Behavioral Prediction:
 - From behavior theory to evaluation framework: Identifying audience characteristics and predicting teachers' intentions to implement FTL
- Research Questions and Methodology
- Results
- Next steps

Healthy Schools Campaign

An independent, non profit organization who advocates for policies and practices that allow students, teachers, and staff to learn and work in a healthy school environment.

The screenshot shows the homepage of the Healthy Schools Campaign website. At the top left is the logo with the text "healthy schools campaign" and the tagline "clean environment, healthy children, better education". A search bar is located at the top right. A navigation menu includes "Who We Are", "Programs", "Blog", "Get Involved", "Press", "Publications", "Events", and "DONATE NOW". On the left side, there are menu items for "What We Do", "Get Involved", "Cooking up Change", "Contact Us", and "Press". Below these is a "Sign up for our E-Newsletter" form with an email input field and a "GO" button. Social media sharing icons for "SHARE" and "followers" are also present. The main content area features a large photo of four children in school uniforms, one holding a purple basketball. Below the photo is the heading "School Food: Challenges & Innovation" and the sub-heading "Webinar and Event Series". On the right side, there is a calendar for "March 2012" and two call-to-action boxes: "Take Action" with links to "Speak Up for Safe, Healthy School Buildings" and "Sign the Petition for Education Policy that Supports Student Health", and "Featured Programs" with links to "Go for the Gold! Chicago Food & Fitness Initiative" and "Quick & Easy Guide to School Wellness".

healthy schools campaign | clean environment, healthy children, better education

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What We Do

Get Involved

Cooking up Change

Contact Us

Press

Sign up for our E-Newsletter

Email GO

SHARE

followers



School Food: Challenges & Innovation

Webinar and Event Series

March 2012

S	M	T	W	T	F	S
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4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

- HSC Event - Related Event

Take Action

- ▶ Speak Up for Safe, Healthy School Buildings
- ▶ Sign the Petition for Education Policy that Supports Student Health

Featured Programs

- ▶ Go for the Gold! Chicago Food & Fitness Initiative
- ▶ Quick & Easy Guide to School Wellness

www.healthyschoolscampaign.org



FIT TO LEARN

REGISTER

How can I fit healthy eating lessons into the day when it's already so busy? How can my students be more active when space is limited? Where can I find easy nutrition education lessons? How can I make birthday celebrations healthier?

Healthy Schools Campaign is pleased to announce Fit to Learn, a professional development program focused on practical approaches to making health and wellness a regular part of the classroom experience. CPS teachers taking part in this new program have described it as "awesome," "realistic and helpful," and "right on track."

Through Fit to Learn, teachers will become wellness mentors, developing and sharing the skills for teaching familiar lessons in a healthy new way.

CPS teachers of grades K-5 are invited to participate in training that spotlights ways to fit healthy habits into daily learning—integrating nutrition education and fitness into classroom lessons that meet Illinois learning standards in math, reading, science, social studies, art and music. **Teachers will receive CPDUs for participation.**

- WHO: CPS teachers of grades K-5
- WHAT: Training to become wellness mentors and easily integrate healthy eating and physical activity into the classroom
- COST: Free of charge
- GET INVOLVED: To learn more, please contact Rosa Ramirez at Healthy Schools Campaign [by email](#) or at 312-419-1810.

Participants

- K-5th grade Chicago public school teachers and staff
 - Invited directly by HSC as a result of having participated in other HSC events
 - Invited indirectly by their principals who received an HSC email
- 66 voluntarily attended 1+ parts of the FTL series
- 32 attended all 3 parts



When and Where

- Fall 2010 - Spring 2011
- Different locations throughout the city of Chicago so that each teacher would be close to at least one training
- Length of trainings ranged from 3 1/2 to 4 hours.



Trainers

- HSC campaign staff
- A former school principal
- Practicing school teachers
- Representatives from local health agencies
- Local university faculty



Training I

- Overview of childhood obesity; connection between health and academic achievement
- Review of local school district's wellness efforts
- Sample classroom lesson plans for social studies, math, art, music, and language arts that integrated nutrition education and/or physical activity
- Small group discussions about how to implement the concepts shared.

Intervention – Training II

- Speed networking event with fellow participants.
- Implementing yoga in the classroom
- Creating healthier classrooms with non-food rewards
- Healthy fundraising events and classroom celebrations
- Writing lesson plans that integrate the health and/or physical education state board of education standards
- Introducing your school to FTL

Intervention – Training III

- Creating a wellness environment in your school
- Introducing FTL in your school
 - Strategies to help your school use FTL.
 - Sample multimedia presentation customizable for their school.



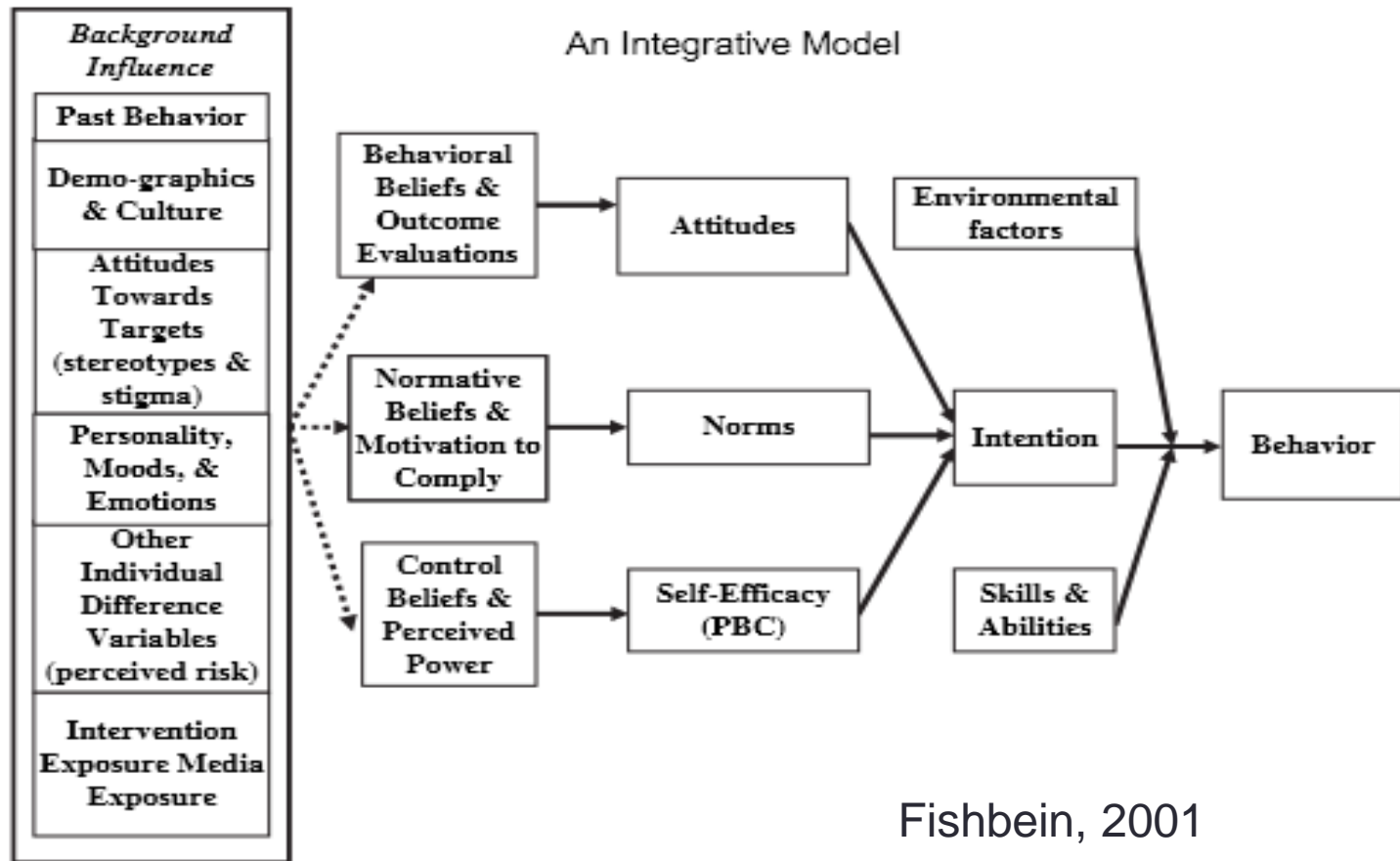
Research Goals

1. Identify the **unique characteristics of the target audience**, as well as the **unique barriers and facilitators** to implementation.
2. **Uncovering best practices** for how to use school-based programming to address childhood obesity

Theory- Driven Evaluation

- According to Fishbein, “The more one knows about the factors that underlie the performance (or nonperformance) of any given behavior, the more likely it is that one can design a successful intervention to change or reinforce that behavior” (2006, p. 216).

Integrative Model of Behavioral Prediction



Assessment Tool (Part 1)

- Open and closed-end questions (5-point Likert scale of agreement)
- Cronbach's alpha for all subscales was .67 or greater
- Question foci:
 - Training I - integrating nutrition education and physical activity into classroom instruction
 - Training II *training others* to integrate nutrition education and physical activity into classroom instruction
 - Training III - Both integrating nutrition education and physical activity into classroom instruction, and training others.

Assessment Tool (Part 2)

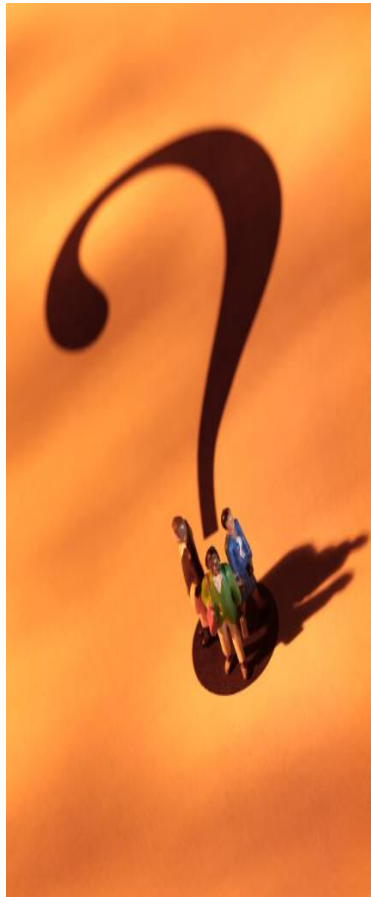
Question subscales based on variables in the IM:

- **Attitude:** desire to integrate or to train others
- **Norms:** student, parent, fellow teacher, and administrative approval to integrate or train
- **Efficacy:** ease and ability to integrate or train
- **Environmental:** budget, time, resources, and administrative support to integrate or train
- **Skills:** previous training others.

Data Collection

- 21 teachers volunteered to be of the study
- 17 of attended all 3 trainings. This means the study captured 53 % (17 of 32 teachers) of those attending all 3 trainings in the series.
- Participation was voluntary; however, a \$1 bill was attached to the last survey as a small incentive.

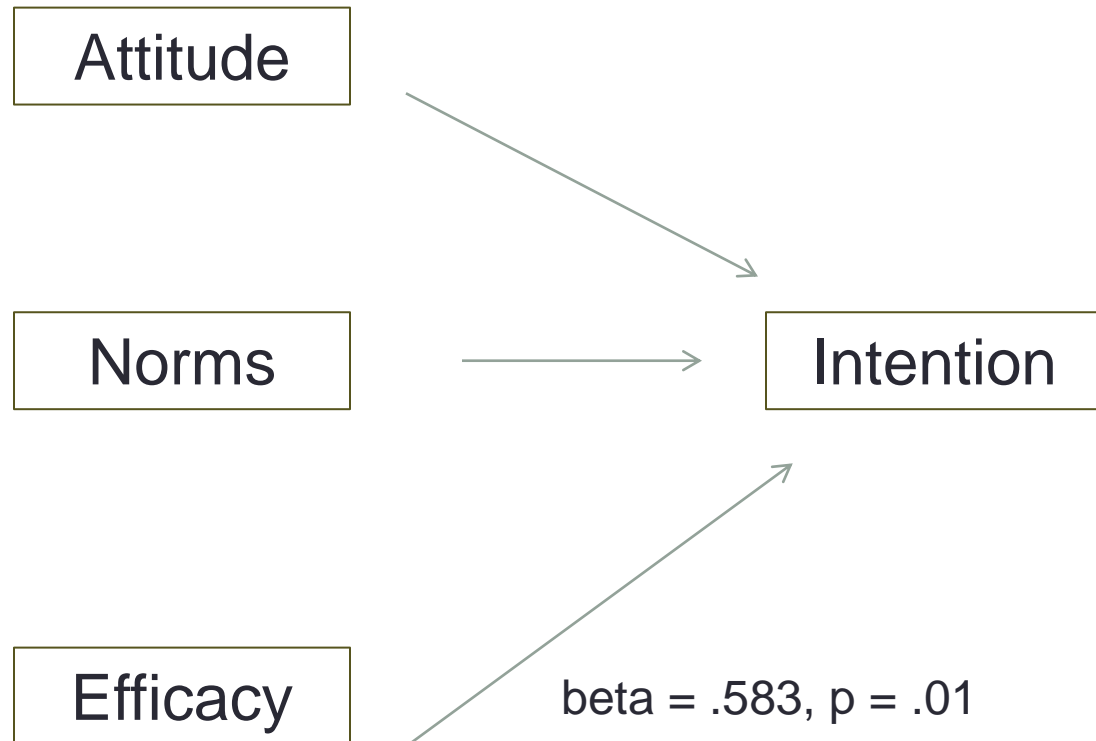
Results:
Research
Question 1



- Does the IM predict intention? If yes, which IM variables best predict intention the desired training outcomes: (a) **integrating** nutrition and physical activity into instruction, and (b) training others to integrate nutrition and physical activity into instruction?

Predicting intention *to integrate*

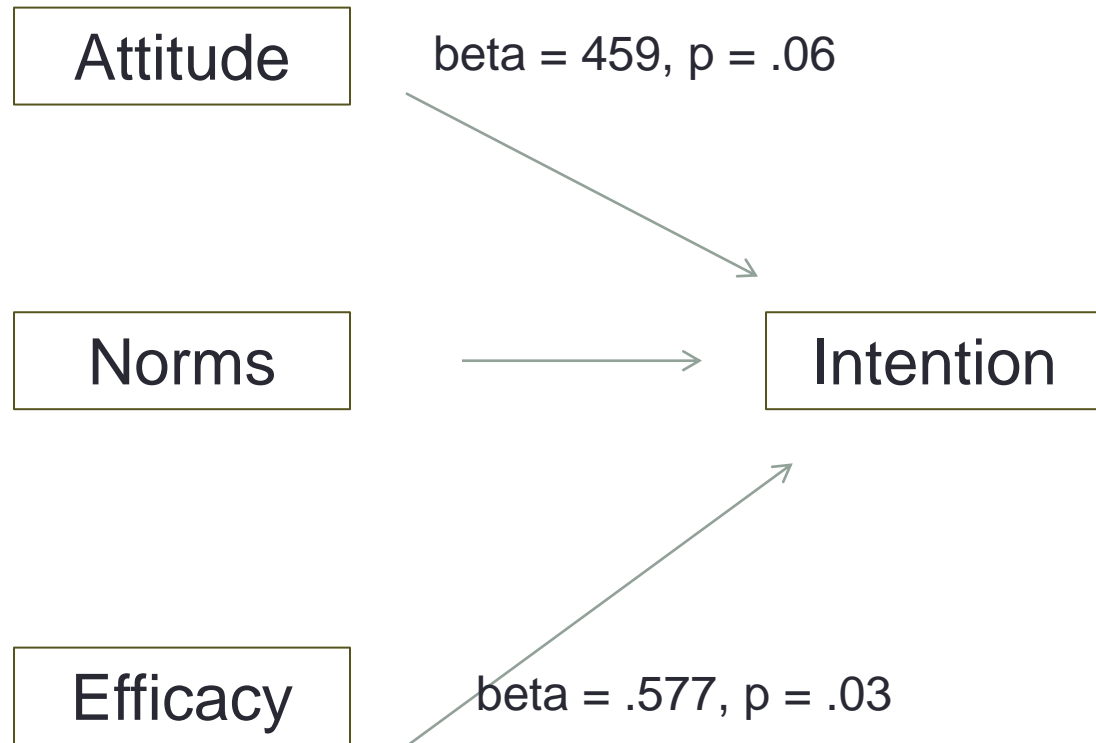
Standard multiple regression was used to assess the ability of attitude (ATT), norms, and efficacy (EFF) to predict intentions to integrate nutrition and physical activity into classroom instruction (ITI).



Total variance explained by the model (adjusted R square) was 63.3%, $F = (3, 12) = 9.64, p = .002$.

Predicting intention *to train*

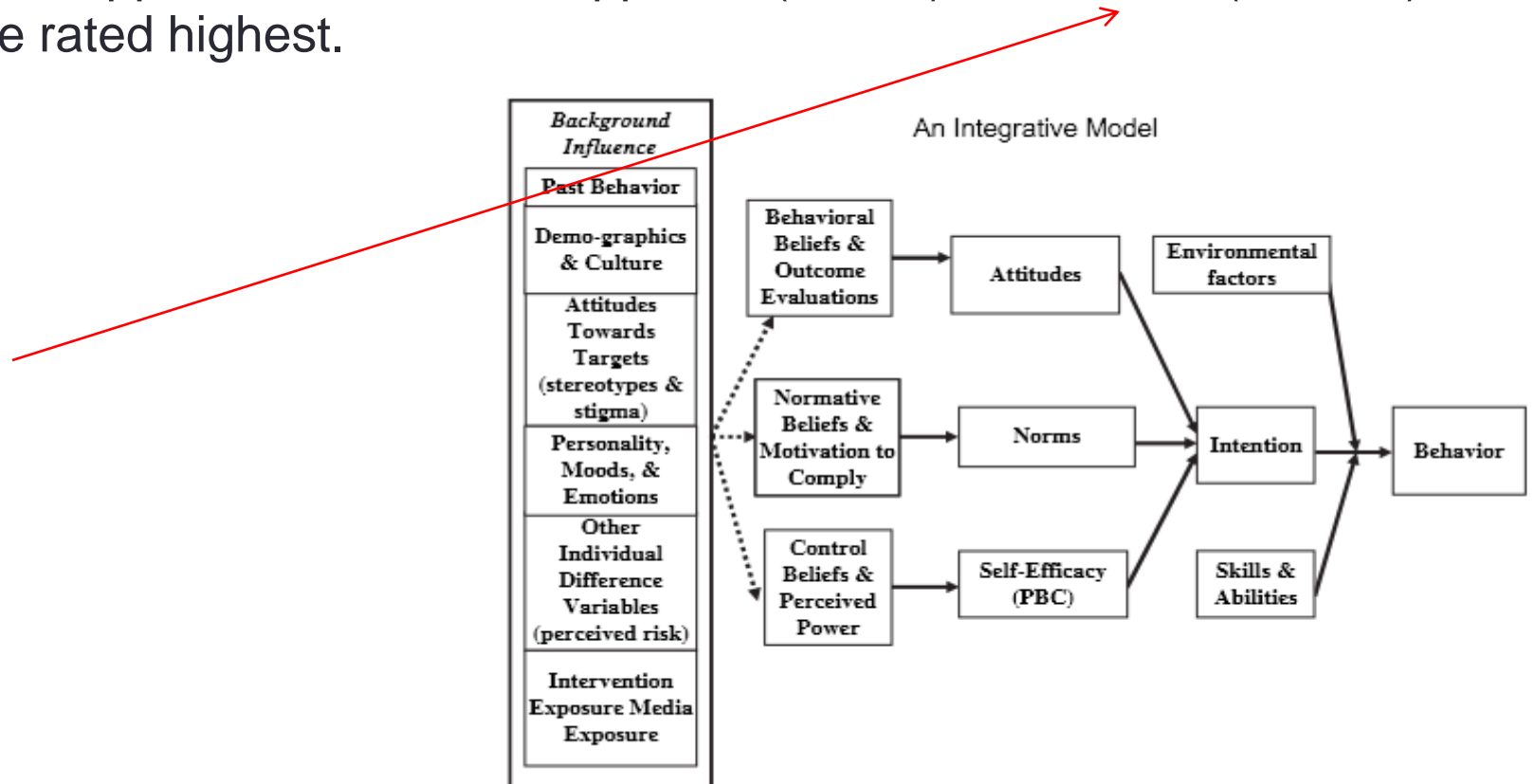
Standard multiple regression was used to assess the ability of attitude (ATT), norms, and efficacy (EFF) to predict intentions to train (ITT) others about integrating nutrition and physical activity into classroom instruction.



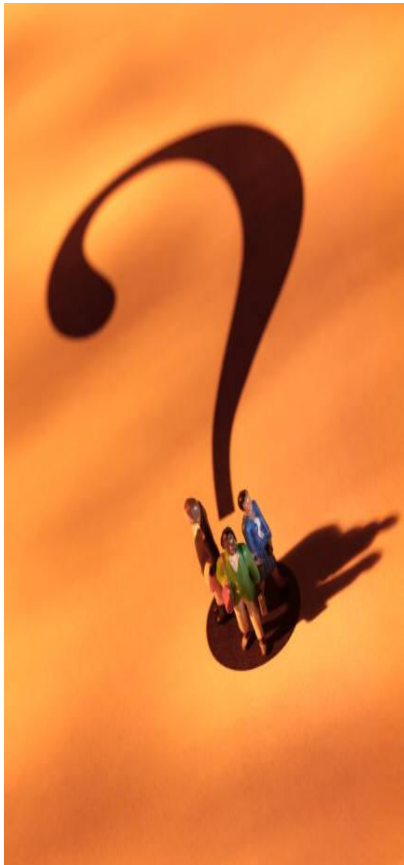
Total variance explained by the model (adjusted R square) was 44.7%, $F = (3, 12) = 5.05, p = .02$.

Exploratory Analyses

- Budget, tools, and time (environmental factors) were the individual factors rated lowest.
- Parent approval and student approval (norms), and desire (attitude) were rated highest.



Results:
Research
Question 2



- Did the training have an impact on the desired training outcomes: (a) **integrating** nutrition and physical activity into instruction, and (b) training others to integrate nutrition and physical activity into instruction?

Impact of Training

- There was no significant change in intention to integrate.
- There was a significant *negative* change for intending to *train* others from Training II (M = 4.72, SD=.77) to Training III (M=4.25, SD=.86); $t(16) = -2.22$, $p = .04$.
- There was a significant negative change for attitude (desire) to *train* others to integrate from Training II (M = 4.88, SD=.33) to Training III (M = 4.26, SD=.75); $t(16) = -2.85$, $p = .012$.

Open-Ended Responses

- I don't have any time to train other teachers. I send emails, but they don't get back to me.
- Finding the time to teach other teachers and their willingness to learn.
- It basically is hard to get them to agree they have extra time and to change their thinking about how easy it really is to incorporate this into lesson plans.
- I think teachers don't realize nurses really can help teacher them educational strategies.
- Teacher resistance: "I don't have time to do this;" "Ugh, another thing I need to do!" are some responses.
- Other [teachers] are never really interested in the activity part. [They] complain about adding more teaching in their lessons, and never follow through with what I train.

Possible reasons why participants might not train others?

Interpretation and Discussion

- Research Question 1
 - In both instances, efficacy was the predictor of intention.
 - Budget, tools, and time were consistently rated lowest.
 - Why was there no change for intention to integrate from pre to post?
- Research Question 2
 - Why might there have been a negative change in attitude towards and intention to train others?
 - Why didn't intention to integrate from pre to post.
- How do we address these findings?

Here's what teachers want...

1. Summer training for teachers
2. Tips on where to begin. We received so much useful, wonderful information and resources that it's a bit overwhelming. Ideas from schools that have successfully implemented Fit to Learn – how they went about making the healthy changes—how they got everyone on board---parents and teachers, the steps they took –what changes they did first, etc. Did they make the changes gradually or all at once?
3. I teach PE and a lot of the things we talked about have nothing to do with the PE class. Maybe split up PE teacher and classroom teachers.
4. I would like to be able to incorporate the lessons with a highlight on how instruction will help ISAT performance. This may require me to better understand ISAT testing or finding a fellow teacher to co-teach.

Here's what teachers want... (cont'd)

5. Professional development day dedicated to nutrition education and physical activity.
6. More training for HOW to train other teachers.
7. Nutrition education class from a dietician. There is so much information out there (a lot of myth as well) and I would like further education on this topic.
8. Administration always wants to know how it helps test scores.

Informal Results (Part 1)

How you have integrated nutrition education, physical activity, and healthier celebrations and rewards into your classroom since your participation in Fit to Learn. Have you:

	Yes	No
Taught the Fit to Learn lessons?	80.0% (4)	20.0% (1)
Do not use food or candy as individual or classroom rewards?	60.0% (3)	40.0% (2)
Eliminated unhealthy foods from classroom parties?	80.0% (4)	20.0% (1)
Used physical activity breaks?	100.0% (4)	0.0% (0)

Informal Results (Part 2)

With whom have your shared FTL resources?

	Classroom Teachers	PE Teachers	Administrators	School Nurses	Community Partners	Parents
Fit to Learn lessons (K-2; 3-5)	100.0% (5)	40.0% (2)	40.0% (2)	20.0% (1)	0.0% (0)	0.0% (0)
Ideas for non-food rewards & celebrations	100.0% (5)	40.0% (2)	40.0% (2)	20.0% (1)	0.0% (0)	40.0% (2)
My Pyramid materials	100.0% (4)	25.0% (1)	25.0% (1)	25.0% (1)	0.0% (0)	0.0% (0)
Presented the Fit to Learn Power Point	100.0% (5)	40.0% (2)	40.0% (2)	20.0% (1)	0.0% (0)	0.0% (0)

Informal Part 3

Describe HOW you have shared the info

	Yes	No
Presented at a staff meeting	80.0% (4)	20.0% (1)
Presented at a professional development meeting	100.0% (4)	0.0% (0)
One-on-one discussions with teachers	100.0% (4)	0.0% (0)
E-mail messages	80.0% (4)	20.0% (1)
Presented to parents	50.0% (2)	50.0% (2)
Parent newsletters	50.0% (2)	50.0% (2)

Next Steps: Evidence-Based Practices

- These results will help to guide the development of trainings and to identify those factors that would increase the likelihood that teachers include nutrition and physical education into classroom instruction and train their peers.
- Sharing and discussing these findings will foster continuous quality improvement for the professional development of teachers in relation to nutrition and physical activity integration in instruction and training of fellow teachers.
-