

**HBEH/NUTR 811**  
**Development and Evaluation of Health Promotion and Disease Prevention Interventions**  
Fall 2016

**Class Schedule:** Tuesdays, 1:25 pm – 4:15 pm  
Rosenau 332

**Instructors:** Deborah Tate, PhD  
Department of Health Behavior  
Department of Nutrition  
318 Rosenau Hall  
[dtate@unc.edu](mailto:dtate@unc.edu)  
Office Hours: By Appointment

Leslie Lytle, PhD  
Department of Health Behavior  
Department of Nutrition  
303 Rosenau Hall  
[llytle@email.unc.edu](mailto:llytle@email.unc.edu)  
Office Hours: By Appointment

**Teaching Assistant:** Liz Chen, MPH  
Department of Health Behavior  
[lizcchen@live.unc.edu](mailto:lizcchen@live.unc.edu)  
Office Hours: By Appointment

**Course Website:** <http://sakai.unc.edu>

### **Course Description**

The goal of this course is to prepare students to be able to design a behavior change intervention that could be implemented and evaluated through funded research. This course will not result in a behavior change grant application but, rather, will teach students how to think through the essential elements of identifying, creating, and evaluating a public health behavior change intervention.

This semester-long course will examine the development and evaluation of interventions for health promotion and disease prevention, with focus on how intervention development and evaluation are not separate units, but rather highly interrelated. With regards to intervention development, topics will cover the interplay between theory-driven and empirically supported strategies for interventions, how theories and empirical literature can inform intervention development, and how intervention research can inform theory. The evaluation component, defined as systematic investigation of the intervention effects on targeted outcomes and assessment of intervention processes, will focus on quantitative and qualitative methods of evaluation. Topics include evaluation paradigms, standards of evidence, threats to internal and external validity and experimental and quasi-experimental designs for assessing program effects. All topics will be discussed in seminar format. Students are assumed to have basic understanding of health behavior theory, program planning, research methods, and basic statistics. The intent is for students to synthesize and build upon this background as they develop skills in developing and evaluating health promotion programs. In addition to participating in general skill-building activities on a variety of topics, students will each select a public health problem area to focus development of an intervention and evaluation plan.

### **Course Objectives:**

1. Familiarize students with the process of developing a behavior change intervention that could be rigorously evaluated in a 5 year R01 or other similar type of funding mechanism.
2. Synthesize the epidemiological evidence linking determinants to a health behavior of public health significance within a target population.
3. Identify theories and relevant constructs that link determinants to a behavioral outcome.
4. Construct a conceptual model that depicts the relationships between determinants and a behavioral outcome.
5. Understand how theory and empirically supported strategies are used to inform intervention development.
6. Identify supported intervention strategies for changing a behavioral outcome and construct a conceptual model linking program components, determinants of a health behavior, and the behavioral outcome.
7. Create an outcome evaluation plan and a process evaluation plan for an intervention to change a behavioral outcome.

**Recommended Book:** Perry, C. L. (1999). *Creating health behavior change: How to develop community-wide programs for youth*. Thousand Oaks, CA: SAGE Publications.

**Course Requirements:** The quality of the course depends on students' preparation for and participation in seminar discussion and assignments. Detailed assignments will be posted on Sakai and handed out in class. Brief descriptions of assignments include the following:

- **Assignment #1, Due 8/30:** Identifying a Health Behavior and Target Population. Identification of a health behavior or set of health behaviors that impact public health in an at-risk target population; define the behavior(s), address the public health impact, and explain risk and prevalence in chosen population using epidemiological evidence. The paper should be a maximum of 3 double-spaced pages plus references.
- **Assignment #2, Due 9/27:** Identifying Determinants of the Health Behavior(s) in a Target Population. Develop (1) an evidence table outlining the modifiable determinants of the health behavior(s) in your population (or related populations as needed) and (2) a conceptual model that graphically depicts the relationships between these determinants and the health behavior(s).
- **Assignment #3, Due 10/11:** Identifying Intervention Objectives for Changing the Health Behavior(s) in a Target Population. Review evidence from outcome and process evaluation studies about interventions designed to change the health behavior in your target population. Develop a table that links modifiable determinants of your health behavior to intervention objectives.
- **Assignment #4, Due 11/8:** Intervention Plan. (1) Create a table of intervention objectives linked to intervention strategies and (2) Develop an intervention plan. The intervention plan should be prepared in PowerPoint, using slide notes to add important supplementary information. The table will be a separate document.
- **Assignment #5, Due 12/6:** Evaluation Plan. Create an evaluation plan including a process evaluation plan for 1 component of the intervention and an outcome evaluation plan for your primary (and secondary as needed) hypothesis addressing your primary health behavior(s) outcome. The evaluation plan should be prepared in PowerPoint, using slide notes to add important supplementary information.
- **WIP (Works in Progress) Presentations:** Throughout the semester we will use class time to provide feedback on the plans you are developing prior to submission of your assignments for grade. We will meet in small groups to workshop and expect that you will both give and receive feedback on each

other's ideas. The last WIP presentation (for assignment 5) will still be an opportunity for you to receive feedback and refine your thinking before turning in your final assignment, however this presentation will be more formal and presented before the whole class. Points for WIPs are awarded for coming to class with draft materials and for providing high-quality constructive feedback to peers.

- Please submit assignments via the Sakai Dropbox **by noon** before class on the day that it is due. Students are expected to be in class on time.
- Late assignments are not acceptable except under emergency circumstances with approval. Unexcused late assignments will be penalized by a half letter grade for every 12 hours they are late. Close attention and adherence to assignment instructions, including formatting, is expected.

Grading:

Attendance/Participation	5 points	<u>Final Grades</u>	
Assignment 1	10 points	H	≥ 90
Assignment 2	20 points	P	76-89
Assignment 3	10 points	L	65-75
Assignment 4	25 points	F	< 65
Assignment 5	20 points		
<u>Presentations</u>	<u>10 points</u>		
TOTAL	100 points		

**Honor Code**

Students must observe the Honor Code in all course assignments. You are expected to produce your own work, except where group work is specifically allowed. In all written assignments, you must not plagiarize the work of others. The instrument defining the Honor Code defines plagiarism as "deliberate or reckless representation of another's words, thoughts, or ideas as one's own without attribution in connection with submission of academic work, whether graded or otherwise." If you have questions about your responsibility under the honor code, please bring them to one of the instructors or consult with the office of the Dean of Students or the *Instrument of Student Judicial Governance*. This document, adopted by the Chancellor, the Faculty Council, and the Student Congress, contains all policies and procedures pertaining to the student honor system.

Please include the following pledge on all written assignments: "On my honor, I have neither given nor received unauthorized aid on this assignment."

**Recognizing, Encouraging, and Valuing Diversity**

In the classroom, diversity strengthens the products, enriches the learning, and broadens the perspectives of all in the class. Diversity requires an atmosphere of inclusion and tolerance, which oftentimes challenges our own closely-held ideas, as well as the boundaries of our personal comfort zones. The results, however, create a sense of community and promote excellence in the learning environment. This class will follow principles of inclusion, respect, tolerance, and acceptance that support the values of diversity. Diversity includes, but is not limited to, consideration of: (1) life experiences, including type, variety, uniqueness, duration, personal values, political viewpoints, and intensity; and (2) factors related to "diversity of presence," including, among others, age, economic circumstances, ethnic identification, family educational attainment, disability, gender, geographic origin, maturity, race, religion, sexual orientation, social position, and veteran status.

Date	Topic and Activities	Assignments
8/23	<p><b>Overview of Class</b></p> <ol style="list-style-type: none"> <li>1. Leslie: Student Activity and Why Interventions?</li> <li>2. Discuss syllabus and class overview</li> <li>3. Liz: Strategies for Success</li> <li>4. Break (10 min)</li> <li>5. Leslie: Rational Planning Process Introduction</li> <li>6. Students Discuss Behavioral Outcome and Target Population</li> </ol> <p><b>Readings:</b></p> <ol style="list-style-type: none"> <li>1. Perry, Chapter 1: Introduction, pp. 1-16.</li> <li>2. Perry, Chapter 2: Preparing for Program Development, pp. 17-42.</li> </ol>	<p><b>WIP</b></p> <p>Bring target population and behavioral outcome idea</p>
8/30	<p><b>Rational Planning Approach, Formative Research, and Conceptual Models</b></p> <ol style="list-style-type: none"> <li>1. Liz: Formative Research for Intervention Development</li> <li>2. Susan Ennett: Introduce Conceptual Models</li> <li>3. Liz: Presentation of 811 Class Assignments from 2015</li> </ol> <p><b>Readings</b></p> <ol style="list-style-type: none"> <li>1. Earp, J. A., &amp; Ennett, S. T. (1991). Conceptual models for health education research and practice. <i>Health Education Research</i>, 6(2), 163-171.</li> </ol>	<p><b>Assignment Due:</b> Identify Health Behavior and Target Population</p>
9/6	<p><b>Intervention Planning</b></p> <ol style="list-style-type: none"> <li>1. Liz: Debate – Use of Theory</li> <li>2. Deb: Use of theory-based constructs and intervention evidence in intervention planning</li> <li>3. Deb: Evidence Tables and Les: Step 3 of Rational Planning</li> </ol> <p><b>Readings</b></p> <ol style="list-style-type: none"> <li>1. Glanz, K., &amp; Bishop, D.B. (2010). The role of behavioral science theory in development and implementation of public health interventions. <i>Annual Review of Public Health</i>, 31, 399-418.</li> <li>2. Rothman, A. J. (2004). "Is there nothing more practical than a good theory?": Why innovations and advances in health behavior change will arise if interventions are used to test and refine theory. <i>International Journal of Behavioral Nutrition and Physical Activity</i>, 1-11.</li> <li>3. Noar, S.M., &amp; Zimmerman, R.S. (2005). Health behavior theory and cumulative knowledge regarding health behaviors: Are we moving the right direction? <i>Health Education Research</i>, 20(3), 275-290.</li> </ol>	

	<p><b>Optional Background Reading</b>  From Bartholomew, Planning Health Promotion programs, 3<sup>rd</sup> ed., 2011 (Available in eBook form at <a href="http://search.lib.unc.edu/search?R=UNCb6554594">http://search.lib.unc.edu/search?R=UNCb6554594</a>)</p> <ol style="list-style-type: none"> <li>Chapter 2: Behavior-Oriented Theories Used in Health Promotion</li> <li>Chapter 3: Environment-Oriented Theories</li> </ol>	
9/13	<p><b>Nuts and bolts of intervention development</b></p> <ol style="list-style-type: none"> <li>Les: Intervention objectives</li> <li>Work in Progress Groups Meet About Evidence Tables (for Assignment 2)</li> </ol> <p><b>Readings</b></p> <ol style="list-style-type: none"> <li>Perry, Chapter 3: Determining the Program Components, pp.43-72.</li> <li>Lytle, L.A., Perry, C.L. (2001). Applying research and theory in program planning: An example from a nutrition education intervention. <i>Health Promotion Practice, 2</i>, 68-80.</li> </ol> <p><b>Examples of evidence tables to review</b></p> <ol style="list-style-type: none"> <li>Chillon, P., Evenson, K. R., Vaughn, A., &amp; Ward, D. S. (2011). A systematic review of interventions for promoting active transportation to school. <i>International Journal of Behavioral Nutrition Physical Activity, 8</i>, 10.</li> <li>Pignone, M., DeWalt, D.A., Sheridan, S., Berkman, N., &amp; Lohr, K.N. (2005). Interventions to improve outcomes for patients with low literacy: A systematic review. <i>Journal of General Internal Medicine, 20</i>(2), 185-192.</li> </ol>	<p><b>WIP</b>  <b>Bring draft of evidence table</b></p>
9/20	<p><b>Conceptual Models</b></p> <ol style="list-style-type: none"> <li>Laura Widman, Ph.D. – Development of an eHealth Intervention to Increase Communication Skills in Adolescent Girls around Sexual Health Behavior (focus on conceptual model and development of intervention)</li> <li>WIPs –Presentations Conceptual Models</li> </ol> <p><b>Readings</b>  Reading TBD</p>	
9/27	<p><b>Intervention Types</b></p> <ol style="list-style-type: none"> <li>Brooke Nezami, Ph.D. – Development of an mHealth Intervention for Moms of Preschool Children to Improve Diet: SmartMoms Intervention Objectives</li> <li>In-class individual work on Intervention Objectives</li> </ol> <p><b>Readings</b></p>	<p><b>Assignment Due:</b>  Evidence Table of Determinants and Conceptual Model of the Problem</p>

	Reading TBD	
10/4	<p><b>Intervention Objectives and Strategies</b></p> <ol style="list-style-type: none"> <li>1. WIPs of Intervention Objectives</li> <li>2. Leslie: Linking Intervention Objectives to Strategies</li> </ol> <p><b>Readings</b></p> <ol style="list-style-type: none"> <li>1. Perry, Chapter 4: Creating the Health Behavior Program, pp. 73-98</li> <li>2. Lytle, L. A., Moe, S. G., Nanney, M. S., Laska, M. N., &amp; Linde, J. A. (2014). Designing a Weight Gain Prevention Trial for Young Adults: The CHOICES Study. <i>Am J Health Educ</i>, 45(2), 67-75.</li> </ol>	WIPS: Bring drafts of Intervention Objectives
10/11	<p><b>Mediators and Moderators</b></p> <ol style="list-style-type: none"> <li>1. Liz: Measurement of Constructs and Objectives</li> <li>2. Leslie: Mediators and Moderators in Interventions</li> </ol> <p><b>Readings</b> Readings TBD</p>	<b>Assignment Due:</b> Table of Intervention Determinants and Objectives
10/18	<p><b>Outcome Evaluation Design</b></p> <ol style="list-style-type: none"> <li>1. Liz: Outcome evaluation design</li> <li>2. Deb: Selecting outcome measures</li> </ol> <p><b>Readings</b></p> <ol style="list-style-type: none"> <li>1. Flay, B.R., Biglan, A., Boruch, R.F., Gonzalez Castro, F., Gottfredson, D., Kellam, S., et al. (2005). Standards of evidence: Criteria for efficacy, effectiveness and dissemination. <i>Prevention Science</i>, 6, 151-175.</li> <li>2. Mercer, S.L., DeVinney, B.J., Fine, L.J., Green, L.W., &amp; Dougherty, D. (2007). Study designs for effectiveness and translation research. <i>American Journal of Preventive Medicine</i>, 33, 139-154.</li> </ol> <p><b>Review:</b></p> <ol style="list-style-type: none"> <li>1. Shadish, W.R., Cook, T.D., and Campbell, D.T. (2002). Chapter 2: Statistical Conclusion Validity and Internal Validity. In <i>Experimental and quasi-experimental designs</i> (pp. 53-63). Boston: Houghton Mifflin Co.</li> <li>2. Shadish, W.R., Cook, T.D., and Campbell, D.T. (2002). Chapter 3: Construct validity and external validity. In <i>Experimental and quasi-experimental designs</i> (pp. 83-93). Boston: Houghton Mifflin Co.</li> </ol>	
10/25	<p><b>WIP Presentations: Intervention Plans</b></p> <ol style="list-style-type: none"> <li>1. Student WIP presentations</li> </ol>	WIP: Bring draft intervention plans for discussion

	<p>2. Deb: Selecting Outcome Measures</p> <p><b>Readings</b> Readings TBD</p>	
11/1	<p><b>Sample Size Determination</b></p> <p>1. Marci Boynton: Power and sample size 2. Sarah Kowitt: Group activity for determining sample size</p> <p><b>Readings</b> Readings TBD</p>	
11/8	<p><b>Process Evaluation</b></p> <p>1. Laura Linnan: Process evaluation in community-based studies 2. In-class work time on process evaluation plans</p> <p><b>Readings</b></p> <ol style="list-style-type: none"> <li>Linnan, L. &amp; Steckler, A. (2002). Process evaluation for public health interventions and research. An overview. In Steckler, A. &amp; Linnan, L. (Eds.) <i>Process evaluation for public health interventions and research</i> (pp. 1-23). San Francisco: Jossey-Bass.</li> <li>Oakley, A. Strange, V., Bonell, C., Allen, E., Stephenson, J &amp; RIPPLE Study Team. (2006) Process evaluation in randomized controlled trials of complex interventions. <i>BMJ</i>; 332; 413-416.]</li> <li>Story, M., Lytle, L., Birnbaum, A.S., &amp; Perry, C.L. (2002). Peer-led, school-based nutrition education for young adolescents: Feasibility and process evaluation of the TEENS study. <i>Journal of School Health</i>, 72, 121-127.</li> </ol>	<p><i>Assignment Due:</i> Intervention Plan with Objectives and Strategies</p>
11/15	<p><b>Innovative Intervention Design and Methods</b></p> <p>Deb &amp; Guests: Alphabet Soup - SMART, MOST and BCTs</p> <p><b>Readings</b></p> <ol style="list-style-type: none"> <li>Wyrick DL, Rulison KL, Fearnow-Kenney M, Milroy JJ, Collins LM. Moving beyond the treatment package approach to developing behavioral interventions: addressing questions that arose during an application of the Multiphase Optimization Strategy (MOST). <i>Transl Behav Med</i>. 2014 Sep;4(3):252-9. doi: 10.1007/s13142-013-0247-7. PubMed PMID: 25264465; PubMed Central PMCID: PMC4167894.</li> <li>Michie S, Richardson M, Johnston M, Abraham C, Francis J, Hardeman W, Eccles MP, Cane J, Wood CE. The behavior change technique taxonomy (v1) of 93 hierarchically</li> </ol>	

	clustered techniques: building an international consensus for the reporting of behavior change interventions. <i>Ann Behav Med.</i> 2013 Aug;46(1):81-95. doi: 10.1007/s12160-013-9486-6. PubMed PMID: 23512568.	
<b>11/22</b>	<b>Presentations: Intervention &amp; Evaluation Plans</b> WIP – Full class student presentations	
<b>11/29</b>	<b>Presentations: Intervention &amp; Evaluation Plans</b> WIP – Full class student presentations	
<b>12/6</b>	<b>Wrap Up and Evaluation</b>	<i>Assignment Due:</i> Evaluation Plans