



Health Maintenance Consortium Resource Center
Texas A&M University School of Rural Public Health



Health Maintenance Consortium Supplement Progress Reports September 2007

Supplements

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I-5-A-Day – Elliot
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HMC Supplement Progress Report - DEPRESSION September 2007

Supplement Title: The Role of Depression and Context in Health Behavior An Administrative Supplement to:
Preventing Suicide Risk Behaviors: Long Term Change

**Supplement Chair/
Affiliation:** Carole Hooven, PhD - University of Washington School of Nursing

Purpose: To apply an ecological framework of neighborhood effects on individual health by exploring the relationship between depression and health change for a broad set of health outcomes – suicide risk, sexual practices, diet adherence, and smoking cessation – and specifically exploring how the context in which an individual is embedded contributes to and moderates these effects.

**Depression
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Progress to Date: The geocoding process is complete for Sites A, B & D with the corresponding census tracts and X, Y coordinates attached. The first time point has been geocoded for Site C. Site C will send each additional time point once data are collected, and then the lead site will geocode the addresses. The lead site has collected the first set of neighborhood-level variables (at the census tract level) from the U.S. Census Bureau for each study.

Challenges to Date: We are still in the process of verifying the final list of substantive and outcome variables that will be included from each site for comparative analysis.

Next Steps: For the sites with completed geocoded data, the lead site will be sending the geocoded individual-level data file (encrypted) back to the respective site. This geocoded individual-level data set includes respondent ID, time point, census tract, and X, Y coordinates. In addition, the lead site will also send the neighborhood census variable data set to each site. Next, each site will create a new anonymous data set without individual identifiers, only census tract identifiers and X, Y coordinates. In addition to the geocoded variables, this data set will contain a small subset of participant data from several time points (baseline, immediate post, and the end point); these time points will depend on what best represents each site's situation. The substantive variables include demographic characteristics (age, sex, race/ethnicity, SES), social support items and scales, depression items and scales, and outcome indicators. We are in the process of deciding the best ways to capture the different outcomes, including increase/decrease in negative health behavior, maintenance of current behavior, presence or absence of a given behavior or condition, and continuous scale measures. We plan to discuss the final list of substantive and outcome variables during the supplement meeting in October. Once the individual-level items are agreed upon, the anonymous individual-level data will be sent to the lead site where the pooled cross-sectional analysis will begin.

HMC Supplement Progress Report - ENVIRONMENT September 2007

Supplement Title: The Impact of the Physical and Socioeconomic Environment on Changes in Diet, Physical Activity, and Obesity

**Supplement Chair/
Affiliation:** Jeff Migneault, PhD - Boston University School of Medicine

Purpose: To investigate the interaction of environmental factors and health behavior interventions and to assist participating sites in the use of social, economic, and built environmental factors in efforts to understand the promotion of long-term behavior change.

Environment

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Progress to Date: We have made significant progress. The geocoding from the *Maintenance of Exercise Adherence Among Older Adults with Osteoarthritis* project (Hughes) has been completed and returned to the Hughes group. We received the data from the Ecological Model for Long-term Weight Control project (Gorin), and we are about to complete the geocoding process on that data as well. We have discussed selecting cases from the Long-Term Exercise Maintenance via Internet Support project (Williams) and are considering also investigating the affect of the environment on the large sample of twins within this data.

We have continued to work with the Martinson group to analyze data from the Maintaining Physical Activity in Older Adult MCO Members project. Unfortunately a number of the univariate associations that were seen in initial analyses have not held up in multivariate analysis.

Challenges to Date: The geocoding of data from multiple sites continues to run smoothly, and we expect it to when we receive data from the Williams project. Sample recruitment in the Boston University project, Trial of 2 TeleComputer Diet Change Maintenance Programs (Friedman) has been delayed and so geocoding data from that project has not begun. Understanding the complexities in the Martinson data has taken longer than expected, but we now have a greater understanding of how to effectively approach this data.

Next Steps: Establish detailed plan for data transfer and analysis of the Williams data. Summarize the findings from the Martinson project. Start work with other sites on the within-site analysis of the environmental data applying our experience with the Martinson data as appropriate. Once that is well under way, detailed planning of analysis of combined data from multiple sites can begin.

HMC Supplement Progress Report - I-5-A-DAY September 2007

Supplement Title: I-5-A-Day Collaboration Project

**Supplement Chair/
Affiliation:** Diane Elliot, MD - Oregon Health & Science University

Purpose: The main goal of the I-5-a-Day Collaborative Project is to apply statistical techniques to define the common patterns, mediators and theoretical mechanisms of long-term maintenance of healthy dietary behaviors. These issues will be examined as part of a collaborative project of three studies that involve longitudinal (50 to 84 months) follow-up of participants from controlled intervention trials that successfully increased F&V intake.

**I-5-A-Day
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	PHLAME	MetLife	Eat 5
Age	1	1	1
Gender	1	1	1
Education	1	1	1
Hispanic	1	1	1
Race	1	1	
Marital status	1	1	x
Living arrangement	x	2	2
Income	1	1	x
Tobacco	1	3	3
Physical activity	5	3	x
Physical activity social support	4	5	x
Physical activity self efficacy	4	16	x
F & veg stage of change	1	x	5
Food choices eating out	3	2	1
Rating overall diet	3	2	3
Dietary support	3	2	3
Dietary self efficacy	7	5	3
Depression	5	5	
Worksite/group cohesion	7	2	5
General health	4	4	x
Weight	1	1	x
BMI	1	1	x
Waist/hip	1	1	x
BP	1	1	x

Progress to Date: The baseline data have been merged, and corresponding items have been adjusted to allow consistent response options and scaling. Assessing construct reliability is more difficult than initially anticipated, as we adopted more stringent criteria to consider items as corresponding. However, individual site cross-sectional mediation analyses are proceeding with single item measures where necessary. The equating of items across sites also allows us to compare the populations of the different studies, and these analyses are underway.

We were proud to have been a major force in the March HMC meeting, providing planning structure, multiple presentations, and the keynote speaker. Dave MacKinnon has completed work on his 300+ page text, Introduction to Statistical Mediation Analysis (Multivariate Applications Series), available in October in the paperback edition for \$39.95 (Psychology Press).

We have nearly completed a mediation review paper, which provides information about why mediation is important, comparison with other three variable models (mediator, covariate, confounder, moderators) and explicit guidelines for critically reading articles using or purporting to use mediation analysis. Prior to writing the manuscript, we communicated with the editor of the Journal of the American Dietetic Association, and she is interested in the article.

Challenges to Date: Some items that we initially thought would correspond have been deemed too dissimilar for comparison. Keeping track of changes in the various instruments across time has slowed the process.

Next Steps: Requests for the second wave of data are being prepared, and we anticipate a more streamlined process due to the work to date on the baseline data. The list of requested variables will be smaller, and the number of corresponding items should be higher, as sites adjusted some items to assist in cross-site analyses. As analyses on the baseline data are being completed, we will share those among supplement sites, then prepare abstracts and begin drafting manuscripts.

HMC Supplement Progress Report - MAINTENANCE September 2007

Supplement Title: Maintenance Trajectories across Behaviors & Associated Impact on Quality of Life

**Supplement Chair/
Affiliation:** Susan Hughes, DSW - University of Illinois, Chicago

Purpose: To pool maintenance data across eight funded HMC studies in order to address three main research objectives: (1) to examine variability across behaviors in the way that maintenance is assessed, (2) to assess the degree of variability in maintenance across behaviors, and (3) to determine the level of maintenance necessary across behaviors to impact a common outcome.

Maintenance

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Progress to Date: We are using findings from the Maintenance survey completed by HMC investigators (N=21) to develop a manuscript that describes the conceptualization and operationalization of the construct of maintenance across HMC studies. We presented and discussed a draft outline of the paper at the February 2007 grantee meeting, and have a complete draft to discuss at the October 2007 grantee meeting. Drs. Hughes, Seymour, and Ory have taken the lead on the paper with contributions from several of the collaborating site investigators, including behavior-specific contributions from Geoff Williams (smoking cessation), Diane Elliot (diet/nutrition), and Kim Kirby (substance abuse).

Representatives from the Maintenance, Outcomes, and Environmental Supplements collaborated on a draft data sharing protocol to serve as a foundation for data transfers across sites. We discussed the draft data sharing protocol as a group at the October 2006 grantee meeting and decided that additional, supplement specific information was necessary. We created a supplement specific protocol and request and Lauren Crain from HealthPartners agreed to send the Martinson site baseline data as a “test run” of the protocol. The test run of the protocol was successful and the data sharing protocol was finalized for use with the Maintenance Supplement Collaborating sites.

We have successfully received data from 3 of the collaborating sites, for a total of 4 including the lead site. We have developed preliminary baseline descriptive tables using data from the 4 sites.

Challenges to Date: One challenge has been making sure that we are all talking about the same underlying construct when we use common terminology (e.g., maintenance, adherence).

Next Steps: We plan to continue analyzing the available baseline data and look forward to receiving data from the other collaborating sites when available. Six and 12 month data transfers will be scheduled at the October meeting.

HMC Supplement Progress Report - MODALITY September 2007

Supplement Title: Identifying Components of HMC Interventions that Predict Outcomes

**Supplement Chair /
Affiliation:** Jim McKay, PhD - University of Pennsylvania

Purpose: To extend a new methodology for characterizing diverse multi-dimensional psychosocial and behavioral interventions across a set of common components and examining the relationships of individual intervention components to study outcomes.

Modality

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Progress to Date: The final version of the modalities survey has now been completed by the BCC projects, and all the HMC projects in the supplement group. The completed surveys have been entered into a data base, and the data have been cleaned and prepared for analysis. Initial examinations of the data indicate a reasonable degree of variation in responses. These data will be presented at the October HMC meeting. We have also received the outcome data and baseline covariates from the BCC projects, and selected the primary outcomes for our initial analyses. We have developed a final version of the modalities survey, which is more “user friendly” primarily through the addition of clearer and more comprehensive instructions.

Three papers have been planned, which will make use of data from the survey. The first is a conceptual paper, which will address the use of questionnaires like our survey to obtain data on treatment components, and the ways in which such data can advance the study of the active ingredients of treatment. The second will report on the components of behavior maintenance interventions, and will compare the different HMC/BCC groupings (e.g., nutrition, exercise, substance abuse, etc.) on these components. Work on these first two papers has already begun. Work on the third paper, which will link treatment components to outcomes, will begin when HMC outcome data become available.

Challenges to Date: Work over months since our last meeting has been refreshingly challenge-free.

Next Steps: We have asked the rest of the HMC projects to complete the modalities survey, and will add data from those questionnaires to our data base. These additional data will be incorporated into the second paper described above. We will also discuss other possible papers with members of the modalities group, and invite their participation on the first group of papers. One important task is to put together plans to continue working together on papers after the HMC funding period has ended. We will pursue a second supplement to facilitate this work.

HMC Supplement Progress Report - OUTCOMES September 2007

Supplement Title: Transbehavioral and Quality of Life Outcomes: Cross-Site Analyses and Resources

**Supplement Chairs/
Affiliation:** Russell E. Glasgow, Kaiser Permanente, Denver, CO, and Deborah J. Toobert, Ph.D., Oregon Research Institute

Purpose: To advance the science of **multiple-risk-factor** behavior change and its evaluation by analyzing results using common metrics and relating interventions to outcomes and maintenance based on epidemiologic risk and patient functioning, and to advance the measurement and evaluation of behavioral intervention outcomes, investigate important linkages among these outcomes, and identify intervention and social-environmental factors influencing these outcomes.

Outcomes

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Progress to date: The Outcomes supplement is looking at relation between changes in behavior and quality of life using common measures across the five sites. It will still be a little while until we have data on change points from all the sites. We have been conducting the analyses working with the ORI data to see if we have something that the group can use as a frame for their analyses.

In addition to demographic variables, the following health-related and quality-of-life measures are being utilized in this cross-site investigation:

1. *Quality of Life.* CDC Healthy Days quality of life measure.
2. *Diet.* NCI fat and fruit-and-vegetable screeners.
3. *Physical Activity.* All sites are collecting the CHAMPS with the exception of Dr. Elliot's project, which is collecting a number of measures related to fitness, including maximum oxygen uptake, one-minute push-up and sit-up counts, grip strength, the Sorenson back endurance score, a wall sit score, and a sit-and-reach score.
4. *Smoking.* Sites are all collecting the BCC tobacco items.
5. *Body Mass Index.* All sites were already collecting BMI except Drs. Williams and Roll, who have added height and weight (to compute BMI) variables for this project.
6. *Geocoding.* With the exception of two sites, all sites will have their samples geocoded. Geocoding is a problem for the Elliot group. Their intervention was randomized by fire station, and there are 12 to 24 stations within which firefighters trade station assignments. Also, the firefighters spend 1 day at the station, then 2 days at home. We determined that we would do geocoding for the Elliot site, but may not elect to use the data – and in any case we plan to use data from that site for analyses not involving geocoded data. Dr. Roll will not be able to geocode his sample because many participants are homeless.

HMC Supplement Progress Report - OUTCOMES (Continued) September 2007

Supplement Title: Transbehavioral and Quality of Life Outcomes: Cross-Site Analyses and Resources

**Supplement Chairs/
Affiliation:**

Russell E. Glasgow, Kaiser Permanente, Denver, CO, and Deborah J. Toobert, Ph.D.,
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Baseline data-gathering is progressing as planned.

1. Lisa Strycker created a data dictionary, coding rules, and formatting suggestions for sites to follow to transfer data.
2. A data request for our HMC Outcomes Supplement was issued, and data requested by Aug. 1. The deadline was extended for several sites.
3. We have received data in various formats from Williams, Roll, OHSU, and ORI. Data from Sue Hughes/Rachel Seymour have not yet been received, as we opted to wait for their complete sample.

Analytic work with the Oregon Research Institute data is under way.

Past progress:

For all sites providing data thus far, data have been cleaned, SPSS system files have been created, composite variables have been created, and descriptive statistics have been computed. A table was created to show means and standard deviations on the key health behaviors and quality-of-life measure by project for those contributing data.

Remaining analytic steps include:

1. Discuss and determine a scheme for summarizing for each project, likely a combination of study topic, sample, research design, and recruitment procedures. Drs. Toobert and Glasgow and Ms. Strycker have been working on this issue.
2. Discuss and determine a scheme for standardizing or establishing a criterion (e.g., percent at criterion) to handle various health-behavior measures across projects. Drs. Toobert, Glasgow and Ms. Strycker have been working on a proposal on this issue.
3. Merge data sets from all sites. This will be completed when all data are received.
4. Analyze the relationships between (1) demographic characteristics, (2) quality of life, and (3) different summary scores on health outcomes (e.g., number of areas at criterion, weighted scores), by individual sites and across sites. These analyses are under way for individual sites, and will be completed across sites once all data are available.
5. Merge individual-level data with GIS data (e.g., U.S. Census variables such as racial composition, unemployment, poverty, vacant housing and community data, such as shopping, parks, traffic, restaurants). Analyze the extent to which these environmental-level variables affect individual-level quality-of-life and health behaviors. These analyses will be conducted after step #3 has been completed.

The group prepared and submitted an article for the special issue on multiple health behaviors in *Preventive Medicine*. This paper described the efforts by the BCC and HMC teams to identify a common metrics that would allow researchers, policy makers, clinicians, and patients to meaningfully compare the effectiveness of multiple behavioral interventions that target different health outcomes. The paper was rejected. The reviewers felt that the scope was too broad, and a more useful approach would be to provide more depth on a key metric. The Outcomes group will discuss how to revise the paper, and other possible venues for this paper.

Challenges to date: Paper revision.

Next steps:

1. Analyses planned
 - Examine BMI categorically
 - Complete baseline analyses within each site and compare across sites
 - Examine whether smoking more cigarettes per day predicts greater quality of life
 - Merge data across sites, when all data are available, and upload the final data product onto Sharepoint
2. Group discussion
 - Discuss the temporal issue: When might we see behavior change between time 1 and time 2?

HMC Supplement Progress Report - WEIGHT LOSS

September 2007

Supplement Title: Predictors of Long-Term Successful Weight Loss

**Supplement Chair/
Affiliation:** Suzanne Phelan, PhD - Brown Medical School / The Miriam Hospital

Purpose: To 1) identify the latent cluster of environmental, dispositional, and behavioral factors that best distinguish a group of Long-Term Successful Weight Losers from a group of overweight Unsuccessful Weight Losers; 2) examine whether the latent cluster of factors may be used to predict who, among those losing weight after 6 months of treatment, will remain successful at 12 and 18-month follow-ups; 3) compare the relative importance of each latent factor (i.e., environmental, dispositional, and behavioral) in predicting successful weight loss at 12 and 18-month follow-ups; and, 4) determine whether the same cluster of latent factors are associated with successful weight loss in Caucasian and African-American participants.

Weight Loss

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(In addition to HMCRC Members)

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Progress to Date: All three sites are done with recruitment. The LOWE site is assembling the data for analyses and subsequent merging with the other sites. The WING and GORIN baseline data have been merged and analyzed. We are in the process of assembling an abstract for submission to the Society of Behavioral Medicine conference on the behavioral, dispositional, and environmental factors that best differentiate successful from unsuccessful weight losers.

Challenges to Date: We continue to make fairly smooth progress. Data dictionaries and scoring syntax have been completed and distributed to all sites. The analysis plan for this study has evolved considerably—from latent pattern analyses and factor analyses to more sophisticated Bayesian Model Averaging and CART analyses.

Next Steps: The baseline LOWE data will be compiled and merged with the existing WING/GORIN datasets. Analyses will be replicated across the sites in order to examine differences across different patient populations and settings. After treatment is completed (at the Gorin and Lowe sites), we will begin analyzing predictors of weight regain across the studies.