



Health Maintenance Consortium Supplement Progress Reports February 2008

Supplements

Depression – Hooven
Environment – Migneault
I-5-A-Day – Elliot
Maintenance – Hughes
Modality – McKay
Outcomes – Toobert
Weight Loss – Phelan

HMC Supplement Progress Report - DEPRESSION February 2008

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.

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Progress to Date: The geocoding process is complete for Time 1 for Sites A, B, C and D with the corresponding census tracts and X, Y coordinates attached. The lead site has recently sent the geocoded individual-level data file (encrypted) for Time 1 back to each site. This geocoded individual-level data set includes respondent ID, census tract, and X, Y coordinates. Next, each site will create a new substantive data set (building from the geocoded data set) and return it to the lead site. This data set will include census tract identifiers, X, Y coordinates, a small subset of participant data including demographic characteristics (age, sex, race/ethnicity, SES), social support items and scales, depression items and scales, and outcome indicators. The step has been completed for Sites A and B, although additional items may need to be added depending on the final list of substantive and outcome variables needed for comparative analysis

Challenges to Date: The geocoding process continues to pose some challenges. Problematic (non-matching) addresses have taken considerable time to match. The lead site's familiarity with the layout of the different site areas was time consuming but has led to more accurate matches. There are a small number of cases for each site where we were unable to geocode but we can verify the census tract. In such cases, the centroid of the census tract has been used to create X, Y coordinates. In a smaller number of cases there is no matchable address or census tract and those cases will be dropped from the analysis.

Next Steps: 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 and is in the process of returning this data to each site. The lead site will send this information to each site once the substantive data set has been received. We are still 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 April. Once the individual-level items are agreed upon and the substantive data sets are at the lead site, the initial pooled cross-sectional analysis (at time 1) can begin. In the meantime, the lead site is working on the same steps (geocoding and data sharing) for additional time points.

HMC Supplement Progress Report - ENVIRONMENT February 2008

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.

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Progress to Date: We have made significant progress. The geocoding for the Ecological Model for Long-term Weight Control project (Gorin) has been completed. We continue to discuss next steps for 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.

After finishing the within project analysis with the Martinson group (Maintaining Physical Activity in Older Adult MCO Members), similar analyses were done by Lisa Strycker on data from the Mediterranean Lifestyle Project (Toobert). Unfortunately these analyses did not show significant hypothesized relationships.

Challenges to Date: So far the within site analyses of the first two sites have not been positive. As each site has considerable differences in populations, outcomes, and are geographically separate, repeating this analysis is reasonable, especially since the initial work completed helps streamline the process for subsequent sites.

Next Steps: We intend to establish a detailed plan for data transfer and analysis of the Williams data. We will work with collaborators on a plan for data analysis for the Gorin and Hughes projects using our experience from the first two sites. As initial rounds of data moves towards completion, geocoding and data analysis for the Trial of 2 TeleComputer Diet Change Maintenance Programs (Friedman) will commence. After these site-specific analyses have been completed, we will determine the plan for the cross site data merging and analysis.

HMC Supplement Progress Report - I-5-A-DAY February 2008

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.

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Progress to Date: We have completed extensive comparisons of the three different populations assessed across our sites (see table). These differences will make it difficult to draw conclusions about the different impacts of the various interventions. However, we anticipate being able to assess if some components of the interventions are effective across populations.

Initial analyses were submitted for presentation at the Society for Prevention Research meeting in May 2008. The next waves of data have been requested from the sites.

Our 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 – is now ready for review by all sites before submission to the Journal of the American Dietetic Association.

Challenges to Date: Instruments within site have changed across measurement occasion, making consistent matching between sites even more challenging.

Next Steps: Pending acceptance by SPR, we will present the baseline data. The next waves of data have been requested and despite the challenges, existing harmonizing routines should speed the data preparation process. Following that, we will conduct longitudinal mediation models across sites and prepare a manuscript.

Sample of Population Differences			
	PHLAME	MetLife	Eat 5
Age	41.0	63.0	41.9
Gender	96% male	100% female	67% male
BMI	27.5	35.2	-
Current smokers	15.7%	6.8%	19.5%
Days/week 30 min physical activity	3.2	2.7	-
Depressed in last week	2.7	4.8	-
FV stage of change (action or maintenance)	36%	-	65%
FV servings/day	1.6	6.2	1.8

HMC Supplement Progress Report - MAINTENANCE February 2008

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.
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Progress to Date: We have used 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 of the manuscript 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 and John Roll (substance abuse).

We have successfully received data from three of the 8 collaborating sites, for a total of four including our own lead site. We have developed preliminary baseline descriptive demographic, independent, and covariate tables using data from the four sites and will review these data as well as a close to final draft of the manuscript described above at the next face to face grantee meeting in April 2008.

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 vs. adherence).

Next Steps: We will continue to analyze available baseline data and look forward to incorporating data from the other collaborating sites. Six and 12 month data transfer requests will be sent to collaborating sites prior to the April 2008 grantee meeting.

HMC Supplement Progress Report - MODALITY February 2008

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.

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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. We have also received the outcome data and baseline covariates from the BCC projects, and selected the primary outcomes for our initial analyses.

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. Nelda Mier will also be using data from the Modalities Survey for papers on issues pertaining to the cultural sensitivity of the interventions.

We have received modalities surveys from most of the other HMC projects and are in the process of cleaning and entering the remaining data. Work on the first two papers outlined above has commenced. We are also working to clarify remaining IRB issues prior to receiving baseline and outcome data from HMC grants.

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

Next Steps: We will complete our survey data base shortly after we have received the remaining surveys and finished reviewing and cleaning the data. Once these data are finalized, we will complete the first two papers outlined above. Nelda will proceed with her papers as outlined above. We will also continue to 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 February 2008

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.
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Progress to date: The Outcomes supplement is examining the relation between changes in behavior and quality of life using common measures across the five sites. We have received baseline data from all sites. It will still be a little while until we have data on change points from all the sites.

Our group is responsible for organizing and presenting two panel discussions at the April 7-8, 2008 HMC meeting. Based on analyses, instructions, and examples provided by ORI, sites have analyzed their data, and developed PowerPoint slides for the panel presentations. Two telephone conferences devoted to organizing this panel have been completed. The panel discussions will cover the following topics:

Outcomes Panel 1: Working with Multiple Health Behaviors (Qualitative Results)

This panel will cover topics such as why certain behaviors were targeted for intervention; why the intervention targeted multiple versus single behaviors; the intensity of the interventions from the participant's perspective; how sequencing of multiple behaviors was handled; the ease with which participants made multiple changes; whether it was better to change behaviors all at once or to make behavior changes one at a time; whether there were other mediators or moderators, environmental, or psychosocial factors that interacted with the multiple behaviors (e.g., depression); and key lessons learned.

Outcomes Panel 2: Results on Multiple Health Behaviors and Quality of Life (Quantitative/Empirical Results)

This panel will cover the baseline relation between behavioral measures and quality of life, behavioral outcome changes from baseline to the second study time point, analyses of any improvement and clinically significant improvement using a standard such as at least one SD improvement or to criterion, and whether quality of life improved from baseline to the second time point. The panel will also address whether or not **change** in behavioral outcomes was related to **change** in quality of life, and whether the magnitude of the relation between behavioral outcomes and quality of life was impacted by covariates (such as age, gender, SES, comorbid conditions), the relation between number of behavioral areas improved and improvement in quality of life, and finally, questions for general discussion, such as: What is the time course of quality-of-life change with behavioral interventions? Are some behaviors more linked to quality of life than others?

HMC Supplement Progress Report - OUTCOMES (Continued) February 2008

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

Analytic work with the data is under way. The following analyses have been completed:

1. We have received data in various formats from all sites Hughes/Seymour, Williams, Roll, OHSU, and ORI.
2. We have discussed and determined a scheme for summarizing each project's behavioral and quality of life outcomes, which included a combination of study topic, sample, research design, and recruitment procedures.
3. We have discussed and determined a scheme for standardizing or establishing a criterion (e.g., percent at criterion) to handle various health-behavior measures across projects.
4. We have analyzed 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 have been completed or are well under way for individual sites and will be presented at the April 2008 meeting.
5. We have completed baseline analyses within each site and compared across sites.
6. We have examined whether smoking more cigarettes per day predicts greater quality of life.
7. We have completed geocoding of ORI participant addresses and merged the geocodes with existing ORI datasets.
8. We have obtained census tract variables for Lane County, Oregon (e.g., racial composition, unemployment, poverty, vacant housing, intersections) for use in the planned environmental analyses and have merged these data with individual-level ORI data.

Challenges to date: Paper revision.

Next steps:

Analyses planned:

- Analyze the extent to which environmental-level variables affect individual-level quality-of-life and health behaviors
- Merge data across sites, when all data are available, analyze our key research questions across all sites, and upload the final dataset onto Sharepoint.

Group discussion:

- Discuss the temporal issue: When might we see behavior change between time 1 and time 2?
- Not yet addressed: 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 as well as other possible venues for this paper.

HMC Supplement Progress Report - WEIGHT LOSS February 2008

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 Group:
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Progress to Date: All three sites are done with recruitment. Analyses of baseline data from Gorin and Wing datasets are completed and findings will be presented at the Society of Behavioral Medicine Conference (3/08). The Lowe data have been incorporated into the data set and are in the process of being analyzed.

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: Analyses are ongoing to examine differences in successful weight losers and obese. After treatment is completed (at the Gorin and Lowe sites), we will begin analyzing predictors of weight regain across the studies.