

## Research Statement

My research focuses on (1) understanding and improving couples' adaptation to stressors within and outside their relationship, and (2) understanding how efficacious interventions are implemented in real-world community and healthcare settings, and how close relationships may facilitate these translations.

Most couples face several chronic and acute stressors over the course of their relationships. My work is rooted in the idea that the way a given couple adapts to the stressors that arise is influenced by the nature of the stressor (e.g., chronic, acute), vulnerability factors that partners bring to the relationship (e.g., personality characteristics or family history), and the overall quality of their relationship (Karney & Bradbury, 1995). Over time, their relationship quality will also be affected by how they adapt. Thus, distressed couples (i.e., those with clinically low levels of relationship quality) are less likely to adapt effectively to challenges and, thus, are more likely to experience additional stress; likewise, couples who do not effectively adapt to challenges are more likely to experience additional stressors and to have low levels of relationship quality.

My research as a graduate student focused on understanding the relationship processes common in distressed couples, as well as how these processes can be changed through couple therapy in the hopes of improving relationship quality. The theory underlying behavioral couple therapy suggests that helping distressed couples communicate more effectively leads to parallel improvements in relationship functioning. In my dissertation I examined trajectories of change in couples' observed communication during couple therapy through two years after treatment termination. I found that couples generally improved their communication from pre- to post-therapy and maintained those improvements through the 2-year follow-up (Baucom et al., 2011, 2015). Furthermore, changes in some aspects of communication were related to treatment outcomes (improvements in relationship satisfaction, relationship maintenance).

My work has sought to understand and improve couples' adaptation to stressors outside their relationship, such as the birth of a child. Much of my previous research in this area focused on evaluating primary prevention programs for couples experiencing the stress of pregnancy and a newborn, *along with* the chronic stress of low-income status. Across small pilot trials in Los Angeles (Baucom et al., 2018) and New York, and large uncontrolled (Heyman et al., 2020) and randomized (Heyman, Slep, Lorber, Mitnick, Baucom, et al., 2019) trials in New York, my colleagues and I did not find support for the efficacy or effectiveness of the American version of Couple CARE for Parents (Heyman, Baucom, et al., 2019). These results were likely impacted by significant challenges with recruitment and retention, highlighting the need to better understand program implementation and methods for improving enrollment and engagement. This influenced my interest and current research focus on implementation and community-based participatory research.

Poor physical health of one or both partners functions as a stressor for many couples and is linked to worse relationship quality through a series of interrelated biopsychosocial processes (Robles et al., 2014). If one partner has (or is at risk for) a chronic disease, there are several lifestyle factors that, if changed, may improve the long-term outcomes for the individual. Yet, individual partners' adaptation occurs in the context of their relationship – one partner making changes to their physical activity or eating habits is likely to influence the other partner and vice versa. Due at least in part to this mutual influence, partners tend to be similar in a wide range of aspects of health, including lifestyle factors and risk for chronic disease. Although there are many couple- and family-based psychosocial interventions for adults who *have developed* chronic diseases (Martire & Helgeson, 2017), few programs that aim to *prevent* chronic diseases systematically include close others, a gap that my work seeks to fill.

Much of my current work focuses on primary prevention of type 2 diabetes in a relationship context. The lifestyle intervention on which the CDC's National Diabetes Prevention Program (National DPP) is based was efficacious in a large randomized controlled trial (The Diabetes Prevention Program Research Group, 2002), but outcomes in the community demonstrate substantial room for improvement, particularly among participants who are members of minoritized groups (e.g., lower income, racially and ethnically minoritized groups), younger, and men (Ely et al., 2017). In a preliminary study, my colleagues and I found those who signed up for the National DPP together with another household member were more

likely to enroll in and complete the program, and stayed in the program longer, relative to those who signed up for the program individually (Ritchie, Baucom, & Sauder, 2020). Men who signed up with another household member were more likely to meet the CDC goal of at least 5% body weight loss compared with men who signed up individually (Ritchie, Baucom, & Sauder, 2020). These findings suggest that including close others may increase enrollment, engagement, and possibly even outcomes, of the National DPP and other primary prevention programs.

Along with qualitative data collected during my NIDDK-funded K23 award (e.g., Baucom et al., 2022) and feedback from a Community Advisory Board (CAB) of individuals with lived and/or professional expertise in type 2 diabetes and prevention (Aguirre et al., 2020), my team built on these preliminary results by developing a couple-based adaptation of the CDC's *PreventT2* National DPP curriculum. Whereas *PreventT2* includes delivery to groups of individuals at high risk for type 2 diabetes, our adapted program (*PreventT2 Together*) is delivered to groups of couples in which one or both partners are at high risk for type 2 diabetes. In addition to adapting the intervention to be delivered to couples, we also aimed to update the curriculum to be broadly applicable to a wide range of participants, with a particular focus on individuals from marginalized groups who the National DPP has failed to reach and engage. *PreventT2 Together* was reviewed and approved by the CDC as an "alternate curriculum" of the National DPP in 2022. In an on-going pilot trial, we are evaluating the feasibility of a randomized study protocol of *PreventT2 Together* versus *PreventT2* (Whitaker et al., 2023). We successfully recruited a sample of 12 individuals at high risk for type 2 diabetes ("target partners") along with their romantic partners ("supporting partners"). Preliminary data illustrate the potential reach of a couple-based program. We recruited a higher percentage of men (66.7%; n = 8) and younger adults (18-44 years old; 41.7%; n = 5) as target partners in this trial compared with participation rates of these groups in the CDC's nationwide implementation (20% and 16.9% of over 40,000 participants, respectively; Cannon et al., 2020; Ely et al., 2017). Furthermore, at the mid-point of the program, 100% of target partners in the couple-based condition and 50% of target partners in the individual condition had met the physical activity goal. I am finalizing an R01 proposal for a larger randomized clinical trial (RCT) for 10/2023 submission.

In the context of developing the couple-based *PreventT2 Together* curriculum, my Hispanic community partners emphasized the potential of a broader family-based approach, consistent with the Hispanic cultural value of familism. They also identified a need for culturally-adapted diabetes prevention packages that required less time than the National DPP. In the context of a 3-year grant from the American Diabetes Association, I am collaborating with other researchers at Utah and Alliance Community Services (a local community-based organization) to develop a culturally-responsive diabetes prevention package for Hispanic adults and their family members. We are completing data collection of a 16-week mixed-methods formative evaluation of the current *PreventT2* curriculum delivered to Hispanic adults at high risk for type 2 diabetes and their family members. Using data collected from participants, Community Health Workers delivering the intervention, an 8-person CAB, and community colleagues, our team will develop the culturally-responsive curriculum in the coming months and evaluate it in a proof-of-concept trial beginning summer 2024. We aim to begin a complementary project focused on Hispanic mothers in the coming months, with funding from an Administrative Supplement to my K23 award.

### **Future Research Plans**

I plan to continue basic and translational research leveraging close relationships to facilitate the implementation of interventions in real-world settings. If the R01 proposal is positively reviewed and ultimately funded, we will begin a larger RCT of *PreventT2 Together* in collaboration with UHealth researchers, clinicians, and members of the Couple-Based Diabetes Prevention CAB. Building on my participation in an NIH-funded workshop in May 2023, I am also leading a team from across the U.S. on a manuscript describing potential applications of community-based research in the context of the Obesity Related Behavioral Intervention Trials (ORBIT) model of intervention development. Finally, Dr. Feea Leifker (PI) and I are preparing a proposal for an industry-sponsored clinical trial examining the effectiveness of brief exposure therapy delivered by trainees to Utah teens and adults with a fear of needles. This project builds on my clinical expertise and has implications for my broader program of research given the prevalence of needle fear among individuals with type 2 diabetes and chronic illnesses, yet the lack of data on interventions (Duncanson et al., 2021).

### References

- Aguirre, M. C., Brown, H., Gershenoff, D., Hinton, K. L., Huntzinger, O. M., Klein, N., Ramos, C., Tavake-Pasi, O. F., Witte, B., Wolfsfeld, M., Sher, T., Simmons, D. L., Smith, T. W., Clark, L., & Baucom, K. J. W. (2020). The role of advocacy in adapting the diabetes prevention program for couple-based delivery that reaches marginalized groups. *The Behavior Therapist*, *43*(7), 261–265.
- Baucom, K. J. W., Baucom, B. R., & Christensen, A. (2015). Changes in dyadic communication during and after Integrative and Traditional Behavioral Couple Therapy. *Behaviour Research and Therapy*, *65*, 18–28. <https://doi.org/10.1016/j.brat.2014.12.004>
- Baucom, K. J. W., Bauman, T., Nemirovsky, Y., Gutierrez Chavez, M., Aguirre, M. C., Ramos, C., Asnaani, A., Gutner, C. A., Ritchie, N. D., Shah, M., & Clark, L. (2022). Promises and Pitfalls of Dyads in the National Diabetes Prevention Program: Lifestyle Coach Perspectives. *American Journal of Health Promotion*, *36*(7), 1204–1207. <https://doi.org/10.1177/08901171221088580>
- Baucom, K. J. W., Chen, X. S., Perry, N. S., Revolorio, K. Y., Reina, A., & Christensen, A. (2018). Recruitment and retention of low-SES ethnic minority couples in intervention research at the transition to parenthood. *Family Process*, *57*(2), 308–323. <https://doi.org/10.1111/famp.12287>
- Baucom, K. J. W., Sevier, M., Eldridge, K. A., Doss, B. D., & Christensen, A. (2011). Observed communication in couples two years after Integrative and Traditional Behavioral Couple Therapy: Outcome and link with five-year follow-up. *Journal of Consulting and Clinical Psychology*, *79*(5), 565–576. <https://doi.org/10.1037/a0025121>
- Cannon, M. J., Masalovich, S., Ng, B. P., Soler, R. E., Jabrah, R., Ely, E. K., & Smith, B. D. (2020). Retention among participants in the National Diabetes Prevention Program Lifestyle Change Program, 2012–2017. *Diabetes Care*, *43*(9), 2042–2049. <https://doi.org/10.2337/dc19-2366>
- Duncanson, E., Leu, R. K. L., Shanahan, L., Macauley, L., Bennett, P. N., Weichula, R., McDonald, S., Burke, A. L. J., Collins, K. L., Chur-Hansen, A., & Jesudason, S. (2021). The prevalence and evidence-based management of needle fear in adults with chronic disease: A scoping review. *PLOS ONE*, *16*(6), e0253048. <https://doi.org/10.1371/journal.pone.0253048>
- Ely, E. K., Gruss, S. M., Luman, E. T., Gregg, E. W., Ali, M. K., Nhim, K., Rolka, D. B., & Albright, A. L. (2017). A national effort to prevent type 2 diabetes: Participant-level evaluation of CDC's National Diabetes Prevention Program. *Diabetes Care*, *40*(10), 1331–1341. <https://doi.org/10.2337/dc16-2099>
- Heyman, R. E., Baucom, K. J. W., Slep, A. M. S., Mitnick, D. M., & Halford, W. K. (2020). An uncontrolled trial of flexibly delivered relationship education with low-income, unmarried perinatal couples. *Family Relations*, *69*(4), 849–864. <https://doi.org/10.1111/fare.12431>
- Heyman, R. E., Baucom, K. J. W., Slep, A. M. S., Mitnick, D. M., & Lorber, M. F. (2019). A research program testing the effectiveness of a preventive intervention for couples with a newborn. *Family Process*, *58*(3), 669–684. <https://doi.org/10.1111/famp.12428>
- Heyman, R. E., Slep, A. M. S., Lorber, M. F., Mitnick, D. M., Xu, S., Baucom, K. J. W., Halford, W. K., & Niolon, P. H. (2019). A randomized, controlled trial of the impact of the Couple CARE for Parents of Newborns program on the prevention of intimate partner violence and relationship problems. *Prevention Science*, *20*(5), 620–631. <https://doi.org/10.1007/s11121-018-0961-y>
- Karney, B. R., & Bradbury, T. N. (1995). The longitudinal course of marital quality and stability: A review of theory, methods, and research. *Psychological Bulletin*, *118*(1), 3–34. <https://doi.org/10.1037/0033-2909.118.1.3>
- Martire, L. M., & Helgeson, V. S. (2017). Close relationships and the management of chronic illness: Associations and interventions. *American Psychologist*, *72*(6), 601–612. <https://doi.org/10.1037/amp0000066>
- Ritchie, N. D., Baucom, K. J. W., & Sauder, K. A. (2020). Benefits of participating with a partner in the National Diabetes Prevention Program. *Diabetes Care*, *43*(2), e20–e21. <https://doi.org/10.2337/dc19-1489>
- Robles, T. F., Slatcher, R. B., Trombello, J. M., & McGinn, M. M. (2014). Marital quality and health: A meta-analytic review. *Psychological Bulletin*, *140*(1), 140–187. <https://doi.org/10.1037/a0031859>
- The Diabetes Prevention Program Research Group. (2002). Reduction in the Incidence of Type 2 Diabetes with Lifestyle Intervention or Metformin. *New England Journal of Medicine*, *346*(6), 393–403. <https://doi.org/10.1056/NEJMoa012512>
- Whitaker, M., Aguirre, M. C., Gutierrez Chavez, M., Beaulieu, E., Arones, Y. B., Gershenoff, D., Hinton, K., Klein, N., Munezerou Uwizeye, J., Napia, E., Ramos, C., Tavake-Pasi, O. F., Villalta, J.,

Wolfsfeld, C., Witte, B., Maxfield, E., Raphael, K., Simmons, D. L., Clark, L., ... Baucom, K. J. (2023). Couple-based lifestyle intervention to prevent type 2 diabetes: Protocol for a randomised pilot trial. *BMJ Open*, 13(2), e068623. <https://doi.org/10.1136/bmjopen-2022-068623>