The Influence of Classmates on Gains following Relationship Education

by

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Abstract

Using data from a statewide couple relationship education (CRE) program efficacy study, this implementation science study considered whether and how classmates influence gains from CRE exposure. We pursued a theoretically and empirically supported model to explore whether class climate, indicated by classmate characteristics, influenced change in individual and relational outcomes. CRE research had not explored the potential impact of the classmate characteristics as has been explored in school-based education studies. Previous CRE researchers have given limited attention to the unique shared experiences during CRE, combining data from different classes and sites, and have been unable to parse out the relative variation at the individual, couple, and class levels. Expanding upon a recently published efficacy study that demonstrated program impact across several domains for the average CRE participant, we used multilevel modeling to explore whether classmate group characteristics (i.e., class average income, perceived stress, and couple relationship quality) influenced residual change for each separate gain (i.e., immediate changes in self-care or conflict management skills, and long-term changes in mental health, relationship quality, or family harmony experienced one year later) above and beyond participant baselines. Findings indicated that (a) class economic disadvantage resulted in more short-term skill gains, but had no influence on long-term functioning gains, (b) the influence of class stress on short-term gains depended on personal stress (lower stressed participants had less self-care gains in highly stressed classes, yet higher stressed participants had less conflict management gains in highly stressed classes), and less class stress resulted in more long-term mental health benefits; and (c) higher class relationship quality was associated with more gains for all short-term skills and long-term functioning. Therefore, class average relationship quality appears to be a critical class-level risk or protective

factor for individual class benefit. We improved the ability to predict individual variation and identified some classmate characteristics that can be assessed at program start and considered in program design and delivery. Moving beyond evaluation studies centered on the "average" experience, this study serves to expand the growing body of CRE implementation science studies providing implications for developing best practices for diverse populations of CRE participants.

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Table of Contents

List of Tables

List of Figures

I. Introduction

Although decades of research have demonstrated that individuals in committed marriages and relationships lead healthier lives than those who are not in relationships (e.g., Kaplan & Kronick, 2006; Ross et al., 1990; Wood et al., 2007), some researchers are demonstrating the quality of the relationship may be a more critical determinant of overall health than the relationship status (Lawrence et al., 2018; Wheeler et al., 2019). Marital functioning has been shown to directly affect the cardiovascular, endocrine, and immune systems and indirectly influence health behavior and mental health (Kiecolt-Glaser & Newton, 2001). Across time, marital dissatisfaction has been shown to predict depression for men and demonstrated a reciprocal relationship with depression among woman (Woods et al., 2019). A recent study identifying relationship distress as a mediator of Adverse Childhood Experiences (ACES) and health among economically vulnerable racial and ethnic minorities suggested that relationship distress may be such a critical factor in overall health that it should be considered a social determinant of health disparities (Wheeler et al., 2019).

Taken together, a high-quality, committed relationship appears to be an important aspect of healthy adult development. Unfortunately, many adults do not have the experiences or skills to maintain a healthy relationship as it develops over time. As a result, many relationships dissolve and, for those couples who were married, over thirty percent of them end in divorce in the first ten years (U.S. Census Bureau, 2002). Community-based, public health approaches to improving relationship health has garnered national attention (Halford et al., 2008; Hawkins & Ooms, 2012; Stanley et al., 2020). The federal government has supported multiple initiatives and grants targeting interventions that improve couples' relationship quality and relationship stability (Rhoades, 2015), particularly for lower resource, more vulnerable couples. In response

to the harmful outcomes associated with relationship dysfunction and a desire to help, prevention educators have developed and offered Couple Relationship Education (CRE) programs designed to promote healthy, long-lasting relationships (Hawkins et al., 2008; Stanley et al., 2020). Over the past two decades, in particular, more diverse populations of couples have been served through CRE and indications are that individuals, couples, and families benefit, at least in the short-term, in their individual and relational functioning and well-being (Blanchard et al., 2009; Hawkins et al., 2008; Hawkins & Ooms, 2012; Stanley et al., 2020). In recent years, several well-designed RCTs have established more convincingly the benefits for individual and relational functioning up to one year after the course (e.g., Adler-Baeder et al., 2022).

Couple Relationship Education Implementation Studies

The emphasis in the field is that the next generation of CRE studies should focus more on implementation science, seeking to uncover factors that influence the program experience and its relative effectiveness (Stanley et al., 2020). Along with CRE program effectiveness studies that assess the outcomes for the average participant (Blanchard et al., 2009; Hawkins et al., 2008), the last decade has seen more researchers examine whether program effects were more universal or whether characteristics of the participant influenced how much benefit the participant gained by exploring moderators of individual change. While most studies showed positive change regardless of income, minority status, or relationship distress, evidence also indicated some enhanced benefit for those at more risk in terms of instability and social address (Adler-Baeder et al., 2010; Amato, 2014; Carlson, et al., 2014).

Other CRE implementation science studies emphasized more fully understanding mechanisms and program design features that may facilitate change during exposure to CRE (Quirk et al., 2014). For example, a meta-analytic study conducted by Hawkins and colleagues

(2010) examined studies of CRE dosages and found a higher dosage was associated with increased gains and determined a "threshold" of 9-12 hours, beyond which there did not appear to be added benefit. In addition, multiple researchers have considered whether characteristics of the facilitator influence what participants gain from participation in CRE and find support for the role that alliance plays in enhancing program effects (e.g., Bradford et al., 2012; Finnegan, 2019; Ketring et al., 2017). Owen and colleagues (2013) examined both participant alliance with the facilitator and group cohesion to explore a possible influence on relationship outcomes. Notably, they found the influence attributable to facilitator alliance disappeared when group dynamics were also considered. As a result, Owen and colleagues (2013) called for more research that examined the influence of the other participants in the CRE class in order to understand more about socially driven mechanisms of change. While these types of class climate studies have flourished in educational research (e.g., Alansari & Rubie-Davies, 2019), we found no studies of community-based family life education for couples that has examined class climate. To address this gap, this novel study of adult CRE specifically considers whether characteristics of classmates influence individual adult participant's gains from a CRE class.

We build upon a recent CRE efficacy study that demonstrated gains in individual, couple, and family functioning. Employing a longitudinal randomized control trial, Adler-Baeder and colleagues (2022) found long-term programmatic effects for couple quality and family harmony for two curricula and programmatic effects in mental health for one of the curricula relative to the control group. They also showed that change in immediate skills predicted improvement in long-term functioning. This study adds to these efforts and focuses on one feature of implementation science by exploring the influence of an aspect of the class climate, classmate characteristics. Specifically, this study considers whether and how class levels of income,

perceived stress, and relationship quality influence immediate change in participants' skills (self-care and conflict management) and distal change in participants' functioning (mental health, couple relationship quality, and family harmony) following CRE participation. That is, we explore whether there are differences in the amount of change in the selected outcomes based on variations in class levels of income, perceived stress, and relationship quality.

Influence on Individual Change in a Classroom

Education researchers have long recognized the need to consider the influence of the educational context on individual student learning (Anderson & Walberg, 1968; Wang et al., 2020; Wang et al., 1990). The designs often employed in educational research necessitate the consideration of nested data structures as students are situated in shared classrooms and shared schools (Peugh, 2010). These shared environments require that education researchers move beyond simply focusing on characteristics of the student themselves and explore which contextual factors influence their ability to learn. Even 30 years ago, a sizable body of education literature existed that considered factors of the classroom, designated as class climate (Wang et al., 1990). Factors considered included the physical environment, the social system in the class, expectations on student outcomes, quality of instruction, and opportunities to learn (Valiente et al., 2020; Wang et al., 2020). Researchers also considered the influences of school-level factors, such as the physical environment of the school, the social systems in the school, school culture, and expectations about teacher behavior (Thapa et al., 2013). Further, studies that examine aspects of climate have considered the characteristics of the other students in the class to explore whether the compositions of the classrooms or schools influence individual student outcomes (e.g., Barth et al., 2004; Rathmann et al., 2018). These types of complex research questions require the use of advanced models that may include classroom-level and school-level variables,

and account for the nesting of students in classrooms and classrooms in schools in order to understand the relative influences of individual characteristics, aspects of class climates, and aspects of school climates (Peught, 2010; Thapa et al., 2013). In contrast to the prevalence in education research, the use of multilevel models to examine the potential influence of the shared class or school climate experienced during psychoeducational interventions is generally limited to anti-bullying interventions (e.g., Kyriakides et al., 2014; Wei et al., 2010). Further, in these studies, participant characteristics present in the class were not explored as an aspect of class climate. While a few CRE studies have considered program context variables (e.g., facilitator skills, dosage) no adult studies have considered the aggregate characteristics of the class participants and their influence on individual outcomes.

Theoretical & Empirical Underpinnings

We rely on assumptions derived from complementary theories and practices to serve as the integrated foundation for this study: The Ecological Systems Theory & Family Systems Theory, Social Learning Theory, active pedagogy, and a component of The Theory of Planned Behavior. The Ecological Systems Theory serves as an overarching frame, since the central tenet emphasizes the influence environments have on individual behavior (Bronfenbrenner, 1979). Those in the participant's context influence individual choices and behaviors. Family Systems Theory highlights the interconnectedness of those in a family and the spillover that may occur when there are improvements to the couple dynamic (Bowen, 1975; Kopystynska et al., 2020). Social Learning Theory complements the ecological framework and more specifically emphasizes the role of social observation on individual learning (Bandura, 1977). By listening and watching others in the class, participants pick up on cues and are more likely to take on the attitudes and behaviors of the perceived group norm. The experiences and abilities of their

classmates may be an important feature of the participant's new exposures and their ability and willingness to think and behave in line with the group. We consider active pedagogy, which highlights the importance of active engagement with participants to facilitate more effective learning (Bonwell & Eison, 1991). Lastly, the Theory of Planned Behavior, as a process theory, even more specifically highlights the importance of beliefs and social norms in influencing behavioral intentions (Ajzen, 1991). As beliefs and perceptions of social norms about relationship dynamics are more likely to be shared during an intervention, class responses and suggestions may be a critical factor in behavioral change. We explicate the tenets of each theory, their relevance to our study and selected measures, and intersections of these theories in the next chapter.

Class Climate and Couple Relationship Education

As noted, there are a limited number of previous studies that have considered whether class climate influences change during a CRE experience. Two qualitative studies provide some evidence to suggest the class climate is an important factor in what information is gained during CRE. Randles (2014) noted that the class atmosphere provided a supportive space for reflection about participants' own relationships and that the relationship problems verbalized by others made participants feel less lonely about their own issues. Participants shared that the class environment facilitated open discussion and mutual improvement. Similarly, a second qualitative study indicated that facilitators believe the normalization of issues and challenges among classmates helped couples accept and work through their own issues (Wheeler et al., 2018). Wheeler and colleagues (2018) noted that the facilitators believed the group dynamic was a critical mechanism that produced change.

Although we found no quantitative studies that specifically examine the influence of the class climate on adult CRE experiences, there were two studies that considered that influence of class climate on relationship education experiences for youth (YRE). One study identified that classmates' attitudes about sexual behavior (i.e., the class-level mean score) influenced the students' individual change in attitudes regarding delaying of sexual behavior (Morrison et al., 2018). Classes with higher aggregate risk, as represented by a lower class-level endorsement of delaying sexual behavior, were associated with less beneficial individual attitude change. Ma and colleagues (2014) did not find direct influences of class climate on change in warmth/trustworthiness and intimacy/loyalty standards, but did find an interaction; when students with higher baseline levels were in a class with lower standards (i.e., a lower class mean score on warmth/trustworthiness), the students were influenced in the direction of the class climate. That is, students with higher levels of warmth/trustworthiness standard experienced an erosion of that warmth/trustworthiness standard when in classes with lower overall endorsement for warmth/trustworthiness. Developmentally, we expect adolescents might be more suspectable to class climate influences due to the well-established influence of peers that occurs during adolescence (Albert & Steinberg, 2011; Brown & Larson, 2009); however, it may be that there is a similar influence of class climate on program outcomes among adults in a CRE class based on tenants of Social Learning Theory, particularly for those with greater vulnerability.

Research in the last decade and a half documents that individuals and couples with varying levels of mental health and relational risk are attending CRE (e.g., DeMaria, 2005). While aspects of individual risk, such as personal economic disadvantage, more perceived stress, and lower relationship quality have been considered as modifiers of the individual change that occurs following CRE (e.g., Adler-Baeder et al., 2010; Halford et al., 2001; Quirk, et al., 2014;

Whisman & Baucom, 2012), it is unclear whether the level to which these factors are present in the class climate modifies individual change above and beyond the individual influence. Understanding whether classmate characteristics influence individual gains from CRE may be a critical consideration for CRE facilitators. Further, as implementation science seeks to understand differences in gains from interventions (Wiltsey et al., 2020), identification of the most germane class-level factors may be a critical way forward for implementation research and to better inform best practice.

The Current Study

As a central tenet of skills-based CRE is that gains in immediate skills lead to improvements in long-term functioning (Adler-Baeder et al., 2022), we explore whether there is an influence of class climate. We consider five interrelated areas that recently demonstrated impact from CRE exposure (Adler-Baeder et al., 2022) exploring both proximal gains in immediate skills (self-care and conflict management) immediately following exposure to CRE and distal gains in long-term functioning (mental health, relationship quality, and family harmony) one year later. Informed by previous studies focused on personal risk and studies of class climate, this study explores whether and how classmate characteristics (i.e., baseline class means for income, perceived stress, and relationship quality), influence individual-level CRE participants' gains in several distinct domains that have previously shown gains following CRE – self-care, conflict management, mental health, relationship quality, and family harmony (e.g., Adler-Baeder et al., 2022; Adler-Baeder et al., 2013; Arnold & Beelman, 2019; Hawkins et al., 2008; Stanley et al., 2020). We look at the potential influence of class climate on change in each outcome in distinct models as this is an exploratory study and the first to investigate the potential influence of classmate characteristics on adult CRE participant gains.

Gains in each of the outcomes of focus has been associated with exposure to CRE. The National Extension Relationship and Marriage Education Model identifies self-care as one of the seven core components of CRE (Futris & Adler-Baeder, 2013) and emphasizes the connection to relationship health. Researchers have found, for both men and woman, depressed affect improved after exposure to CRE (e.g., Bradford et al., 2014). Critical aspects of the couple dynamic's such as conflict management and relationship quality appear modifiable, as demonstrated by positive change following CRE (Hawkins, 2019; Hawkins et al., 2008). Although CRE is designed to directly influence couple dynamics, there have been examples of positive spillover effects in the family domain, as expected by assumptions in Family Systems Theory (Bowen, 1975; Kopystynska et al., 2020). Family harmony has improved after couples participated in CRE (Adler-Baeder et al., 2013; Adler-Baeder, et al., 2018; McGill et al., 2016).

In sum, this study presents a novel investigation of whether classmate characteristics; indicated by initial class mean level of economic disadvantage, perceived stress, and relationship quality; influences individual short-term (i.e., baseline to immediate post-program) and long-term gains over one year. While some previous research indicates that more vulnerable couples benefit to a greater extent in CRE (Adler-Baeder et al., 2010; Amato, 2014; Carlson et al., 2014), it may also be that the group mean level of risk or protective factors may influence individuals' gains – either enhancing or impeding improvements. With the limited empirical basis for this study, the models tested are exploratory in nature and allow for the examination of class climate factors' influence both in the aggregate, as well as comparatively. That is, we consider which class-level predictors influence each domain independently but, more importantly, we also consider the most germane aspect of class climate across the critical gains from CRE. The

direction of influences is not hypothesized. Results from the study can serve to advance the implementation science studies of CRE and inform practitioners and CRE program designers.

II. Review of the Literature

Overview

In the following chapter, we further explain the theory and literature that have informed the study design. First, we provide expanded information on elements of the theories that are foundational for this study. The emphasis on theory is fueled by the dearth of relevant empirical literature available that has examined the influence of aspects of class climate on change from CRE, the explicit references to theory in education research, and the generally limited discussion of theory in studies of CRE. We next review studies in the education literature that informed our operationalizing of aspects of class climate; studies that similarly considered the influence of classmate characteristics on student outcomes. We then present more details on the limited relevant qualitative and quantitative studies that explore whether classmate characteristics are an important factor to consider as a mechanism for CRE change. Fourth, we provide more details on the classmate characteristics we examine in the study, drawing from previous studies that have identified individual risk or protective factors. Lastly, we summarize the structure, purpose, and potential contributions of the study.

Theoretical Framework

Researchers note that many studies examining the influence of CRE on participant change have not articulated the theoretical basis that informs their work (McGill et al., 2016), though certainly all research design incorporates theoretical assumptions, whether these are explicated or not. In appreciation of the importance of articulating our theoretical foundation, we review and integrate theoretical perspectives that inform our study.

Ecological Systems Theory & Family Systems Theory

Ecological Systems Theory is the overarching theoretical framework for this study. One of the key tenets of Ecological Systems Theory espouses the influence of the environment on individual behavior highlighting the interdependence of the individual and the context within which the individual lives (Bronfenbrenner, 1979). By way of experiences and exposures, individuals interact with many different environments and these environments can shape the individual's behavior to varying degrees. The most proximal and influential contexts are the microsystems (Bronfenbrenner, 1979). The microsystems include family members, friends, and others who interact with the individual on a frequent basis. In a class such as CRE, fellow students repeatedly interact with the individual throughout the duration of the course, creating a short-term microsystem. Those with direct contact and in the immediate environment of the individual have the greatest potential to influence his or her thoughts and behaviors (Bronfenbrenner, 1979). Although the focus of our study is the potential influence of a microsystem during a CRE intervention, the Ecological Systems Theory also considers the more distal systems including the mesosystem – connections between the various microsystems; the exosystem – the larger environments within which the micro systems are nested; the macrosystem – the broader culture comprised of the values, customs, and general attitudes towards relationship; and the chronosystem – the pattern of environmental events and transitions over the life course.

The Ecological Systems Theory highlights the influence of the social system on an individual's perspectives and behaviors (Bronfenbrenner, 1979). A lifetime of exposure to family members and friends helps shape an individual's thoughts and behaviors about relationships. Those who have been consistently exposed to healthier couple dynamics,

communications, and interactions are expected to bring a different perspective to a CRE class than those with less healthy exposures. Informed from Ecological Systems Theory, we also expect that the norms, practices, and current state of functioning that couples bring into the class environment further influence whether and how individuals respond to the CRE exposure. Although likely a short-lived context, CRE classmates constitute a microsystem due to the direct connections over a 6-week period. As connections are made in this new microsystem, there emerges the potential influence of those in the individual's environment.

Whereas tenets of Ecological Systems Theory describe the dynamic interactions that occurs within and between systems, Family Systems Theory focuses more specifically on the interconnectedness of members within the family and mutual influences (Cox & Paley, 1997). Because of the interconnectedness of the family system, changes that follow exposure to CRE are be expected to not only affect their relationship with their adult partner, but further affect other family member's subsystems as well, including the parent-child dyads (Kopystynska et al., 2020). Although CRE generally includes only the adult partners, Family Systems Theory suggests there may be spillover into the larger family system because dynamics within a family are both interrelated and reciprocal (Bowen, 1978). The spillover hypothesis further suggests that relational quality in one subsystem influences the other subsystems in a similar direction such that gains in one subsystem are expected to positively impact the other subsystems (Engfer, 1988). Informed by the interconnectedness highlighted in Family Systems Theory and the spillover hypothesis, our study not only examines the potential influence of class climate on change in the individual and couple domains, but it also considers the potential to influence change in the family domain.

Social Learning Theory

Ecological Systems Theory emphasizes context and the influence of others that occurs within different environments. Similarly, but specifically focused on the learning process, Bandura suggested in Social Learning Theory (1977) that individual learning is influenced via the observation of the behavior of others in the environment. Bandura (1989) further suggested that learning can be achieved through interpretations of new experiences, new perspectives on previous beliefs, and new knowledge conveyed through education. In traditional learning settings such as the classroom, the types of messages and behaviors available to be observed differ due to variations in class climate. Differences in classroom perspectives and behaviors, observed via discussions and activities, are expected to facilitate variation in learning. Taken together, tenets of Social Learning Theory suggest that the observations and interactions with others in an intervention influence participants' learning above and beyond the learning derived from exposure to the intervention's content.

In an intervention setting such as CRE, participants are presented with important information about developing and maintaining healthy relationships. Fellow CRE participants likely contribute commentary from their own relationship perspectives and experiences. The content of those discussions is expected to shape learning beyond what is presented by the facilitator. The nature of this influence can be presumed in contrasting ways. It may be that some classmates provide commentary that is complementary to the curriculum, particularly if they have experiences with healthy relationships. For those individuals and couples who are more vulnerable, they may have more limited exposure to healthy couple communications or high-quality relationships and may therefore have less to contribute through observational learning to promote positive changes. A class comprised predominantly of participants with

healthier relationships are be expected to have different conversations than a class comprised predominantly of participants who have only experienced unhealthy relationships and more individual stressors. However, in classes with a mix of couples, responses from classmates during discussions and interactions during activities may expose participants to new healthy or unhealthy perspectives and experiences which may contradict or normalize their own understanding. Studies that explore the intersection of group and individual levels and their influence on CRE outcomes can shed more light on how social learning occurs in this context.

Active pedagogy leverages instructional approaches that have a greater likelihood of creating opportunities for peer observation and influence. Active pedagogy differs from traditional teaching methods that emphasize a one-directional, lecture-based transmission of information: from the educated instructor to the uninformed student (Bonwell & Eison, 1991). Instead, participants are encouraged to be actively engaged in the learning experience; an emphasized learning requirement for many adults in educational settings (Knowles & Smith, 1984). In alignment with active pedagogy, CRE courses provide numerous opportunities for discussions and skills practice which promote articulations and dialogue (Owen et al., 2013; Wheeler et al., 2018); interactions that are likely to yield more exposure to the opinions and beliefs of classmates. The more opportunities there are for participants to share their perceptions and experiences, the more likely they are to influence and be influenced by their classmates.

Theory of Planned Behavior

The Theory of Planned Behavior is a framework for understanding processes by which cognitions lead to behaviors (Conner, &Sparks, 1996); one component of this theory acknowledges the role of social influence on behavioral choices. The Theory of Planned Behavior posits that intention to behave in a certain way increases the likelihood of the behavior

and assumes that intention is driven by three factors: attitudes about the behavior, subjective norms, and perceived behavioral control (Ajzen, 1991). Critical to our study is the role of normative beliefs in influencing subjective norms and ultimately behavior. Assumptions about what others think about a behavior shape subjective norms, perceptions about what people important to them consider acceptable behavior. Specifically, subjective norms are derived from normative beliefs about a behavior. These normative beliefs capture what the participant perceives is typical and acceptable behavior; perceptions that are likely to influence their own behavior. Critical to our study, a psychosocial intervention hoping to change behavior must be designed to specifically address normative beliefs so that inflated perceptions favoring unhealthy social norms are rectified and healthy relationship concepts and behaviors are normalized. Based on the Theory of Planned Behavior (Ajzen, 1991), the classmates' messages through words and actions are expected to influence the participant's beliefs about what is normative and therefore, what is acceptable.

Considering Class Climate

Education research has long considered the influence of the class climate on individual learning (e.g., Anderson & Walberg, 1968). In fact, in a 1990 literature review, Wang and colleagues suggested that some aspects of class climate appear to be as influential as individual student characteristics. Focused primarily on influencers of social competence, motivation and engagement, and student achievement; aspects of classroom climate have been shown to influence individual attainment from kindergarten thru high school graduation (Wang et al., 2020). Researchers have operationalized the class climate construct in varying ways including focusing on teacher characteristics (e.g., teacher qualities, classroom management practices), classroom characteristic (e.g., number of students in the class, physical features of the room), and

characteristics of classmates (e.g., average socioeconomic status, mean achievement; Wang et al., 2020).

As the focus of our study is whether and how the characteristics of classmates influence gains from CRE, parallel educational studies that examined similar aspects of class climate serve to inform our study design. For example, Barth and colleagues (2004) looked at the influence of classmate characteristics on change in individual student aggression, peer relations, and academic focus. They aggregated the teacher ratings of every student in each class to determine a class-level measure of each outcome. Barth and colleagues (2004) found that the classroom environment partially explained change in individual student behavior over time; students in classes that were less aggressive, had stronger peer relations, and greater academic focus demonstrated more individual gains in each domain. Similarly, when Rathmann and colleagues (2018) examined whether aspects of the class climate influenced student's life satisfaction, they also aggregated each student's perception of the class in order to create a class-level variable. Interestingly, they did not find that any of the seven class-level variables, derived from individual student perceptions, predicted student's life satisfaction. Lastly, Koth and colleagues (2008) examined whether classroom-level factors influenced student perceptions of school climate. In order to operationalize exposure to deviant behavior in the classroom, the researchers created a class-level variable by totaling the number of students in a particular class that were identified as having problematic behaviors and dividing it by the number of students in the class. Koth and colleagues (2008) found that students in classes with higher proportions of students with behavioral problems had less favorable perceptions of the school environment. Taken together, all three of these studies aggregated individual-level indicators to construct a class-level variable in order to consider aspects of class climate.

CRE and Class Climate

A federal policy initiative beginning in 2003, the Healthy Relationship and Marriage Education Initiative, promoted the implementation of CRE programing to improve the health and stability of relationships, particularly among disadvantaged couples (Hawkins, 2019). CRE programs were developed to teach communication and relationship skills in order to decrease relationship dysfunction and dissolution. The first generation of CRE effectiveness studies demonstrated that couples who were exposed to CRE attained gains in relationship quality, communication, and relationship satisfaction (Hawkins et al., 2008). A meta-analysis of effectiveness research conducted by Arnold and Beelman (2019) supported the overall effectiveness of CRE among low-income participants. Effectiveness studies next considered not just whether CRE was effective, but for whom. The subsequent generation of CRE research is exploring what factors influence gains from exposure to the program. Known as implementation science, these studies explore factors that promote or inhibit the uptake of evidence-based programming (Wiltsey et al., 2020).

One of the three focal areas that implementation scientists consider is the context in which programs occur (Wiltsey et al., 2020). Some aspects of adult CRE implementation, such as dosage and facilitator–participant alliance, have begun to be empirically explored. However, we have not found any empirical studies that have examined whether classmate characteristics, an aspect of class climate, influence individual change. To inform our understanding of the potential importance of context on CRE implementation, we rely on qualitative studies to provide some description of the experiences and perceptions of CRE. We found two qualitative studies focused on CRE that highlight the potential influence of the class climate on the CRE experience. The first is a phenomenological study of couples who participated in federally-

funded CRE classes (Randles, 2014). Randles (2014) found several themes, two of which are critical to informing this research: 1) the incentives and communal class atmosphere allowed couples to focus on their own relationship priorities, and 2) relationship challenges couples thought were unique to their relationship were actually experienced by many of the other couples in the class. These class atmospheres are likely to differ; norms that are considered typical in one class may be atypical in another depending on who is in the class. Couples stated the CRE class helped them "reduce feelings of loneliness and blame in their relationship struggles" and they learned, "that their relationships challenges such as those with trust, anger, and money were neither unique nor an indication of individual failings or couple incompatibility" (Randles, 2014, p. 394-395). When similar, shared experiences "lessened the resentment and animosity that typically characterized interactions with their partners" (Randles, 2014, p. 395). The participants suggested one of the most beneficial components of the CRE experience was the setting that allowed them to discuss their problems with others who have similar struggles. The content and impact of those critical discussions is likely to vary based on the characteristics of the fellow classmates.

A second phenomenological study similarly sought to understand what aspects of CRE produced positive relationship change from the facilitators' perspective. Wheeler and colleagues (2018) talked with CRE facilitators working with low-income CRE participants in order to understand more about group dynamics. The facilitators indicated they believed the shared group experience was an important aspect of the change process, "identifying with other couples' issues and realizing you're not alone, that what's in your relationship could be normal, that others have gone through it or are going through it – that helps you normalize and that I'm sure eventually helps hope better" (Wheeler et al., 2018, p. 179). The Wheeler and colleagues' study

(2018) highlighted the influence of the group, the influence of couple characteristics on both the group and the couple, and the new insights that often came from the experiences of other group members rather than the instructors. As stated by a CRE facilitator, "it's more that "I want to hear what people have to say about this" and had we not had the group dynamic… that person could have never explored into other options" (Wheeler et al., p. 180). Randles (2014) recommended program developers design CRE curricula to further encourage couples to talk openly and meaningfully about their stressors suggesting these class dialogues can serve to normalize external stress, alleviate guilt and shame from previous patterns of unhealthy coping, and provide healthy coping alternatives. Both qualitative studies speak to the importance of understanding the influence of the other participants in the change process. The critical nature of the interactions between CRE participants suggests classmate characteristics warrants consideration.

As we found no empirical studies examining the effects of the class climate on adult change after exposure to CRE, we turned to adolescent YRE studies of class climate to inform our study. In the two studies we found that explored the influence of class climate on adolescents exposed to YRE, classmate characteristics were found to predict aspects of individual change (Ma et al., 2014; Morrison et al., 2018). Morrison and colleagues (2018) explored whether individual changes in attitude about delaying sexual behavior were influenced by an aspect of class climate. To create class-level risk, they aggregated known individual-level indicators of risk for developmentally early sexual behavior such as income, race, and attitude about sexual delay. Morrison and colleagues (2018) found that class climate did predict individual change: students in classrooms with greater class mean level of risk (i.e., more sexually active peers) demonstrated less beneficial attitude change toward sexual delay. Ma and

colleagues (2014) did not find classmate characteristics (i.e., aggregated standards of warmth/trustworthiness for partners and intimacy/loyalty standards for relationships) directly influenced individual-level change, but did find an interaction between class climate and baseline levels of warmth/trustworthiness. That is, the class climate mattered for students endorsing higher baseline levels of warmth/trustworthiness standards, but not for students endorsing lower baseline levels. Unfortunately, there aren't any studies available to suggest which factors of class climate are most likely to influence adult participants of CRE. Informed by these YRE studies, we explore several likely indicators by aggregating individual-level risk or protective factors for each class. The class-level indicators are factors that have demonstrated individual-level influence across multiple domains relevant to adult CRE research.

Nesting and the Influence of the Classmate Characteristics

The gold standard in CRE is achieved when partners attend a class together (Stanley et al., 2020). The shared experience of the couple both in and out of the class setting has inspired CRE researchers to consider whether CRE outcomes are influenced by both individual- and couple-level factors (e.g., Owen et al., 2012). Factors that might impede or enhance a couple's ability to grow from exposure to CRE are an important focus of CRE research because these factors are often prevalent among the populations CRE was originally intended to support. For our indicators, we focus on the aggregation of traits of the participants and the participating couple's baseline state. We consider participant traits because, at the individual level, these factors have been shown to impact both the baseline status of the participant and the degree to which they benefit from the intervention (Adler-Baeder et al., 2010). We also consider the current state of the couple relationships in the class, in the aggregate, since baseline relationship quality at the individual level has been shown to influence change following CRE (McGill et al.,

2016). When aggregated, these trait and state factors represent the baseline shared risk or protective levels, an important aspect of the class climate. There are no known studies that have examined whether the aggregate levels among CRE classmates – economic disadvantage, perceived stress, or couple relationship quality – influence change from exposure to adult CRE. It is unknown whether these risk or protective factors only influence at the individual- and couple-level or if the presence or absence among participants in a CRE class further influence participant gains and in what direction.

Class Income

Economically disadvantaged couples are more likely to experience unstable relationships and exhibit less healthy conflict management skills than higher income couples (Adler-Baeder et al., 2010; Cowan et al., 2007). This association has inspired researchers to specifically consider whether CRE is effective at mitigating risk associated with low-income couples (e.g., Adler-Baeder et al., 2010; Hawkins et al., 2013; Williamson et al., 2016). In a meta-analysis by Hawkins and Fackrell (2010), CRE was found to be as effective with lower-income couples as it is with middle-income participants. In fact, some research has shown low-income participants may experience greater beneficial change from CRE than those with less risk (Adler-Baeder et al., 2010; Amato, 2014; Stanley et al., 2014). Although there are studies that have examined the influence of individual economic disadvantage on change after exposure to CRE, there are no known studies that have examined whether the economic status of the class influences individual-level gains from CRE. To address that gap, we explore whether class economic level influences individual change across the domains of individual, couple, and family functioning.

Class Perceived Stress

Stress is negatively associated with multiple aspects of individual functioning including physical health, mental health, and general well-being (Din-Dzietham et al., 2004; Mihăilă, 2015; Praharso et al., 2017). Higher stress can have a detrimental effect on self-care practices, increase conflict, and diminish relationship quality (Feng et al., 2019; Randall|& Bodenmann, 2009). Two individuals can experience the exact same stressor, but have varying levels of distress; it may be the perception of stress that is the critical link between stress exposure and negative outcomes (Cohen et al., 1983; Lavoie & Douglas, 2012). The level of stress perceived characterizes how overloaded the individual is feeling (Cohen et al., 1994); a characteristic that may influence openness to change before, during, and after exposure to psychosocial education (Britt et al., 2016; Cozolino & Sprokay, 2006). Although evaluation studies have demonstrated exposure to RE decreased the amount of stress perceived by the participants, it is unknown whether elevated perceived stress in a class climate influences individual change in individual, couple, and family outcomes (Doss et al., 2014; Whitton et al., 2016).

Class Relationship Quality

One of the most often considered factors in CRE evaluations is the state of a couple's relationship prior to exposure to CRE. An important finding in CRE research is that those experiencing more relationship distress prior to CRE showed more gains from exposure to CRE (Halford et al., 2001; McGill et al., 2016; Quirk et al., 2014). What remained unknown is whether the baseline class level of relationship quality influences individual gains from CRE. That is, do participants in a CRE class with other couples who have lower baseline relationship quality gain more benefit, or do participants with other couples in class who have higher relationship quality prior to attending CRE gain more from the class? In sum, this exploratory

study considered whether the average economic, perceived stress, and relationship quality at the class-level influences individual-level change in the three domains that have been explored in the CRE literature: individual, couple, and family.

Considering Multiple Domains of Change

CRE has helped participants in multiple domains (Adler-Baeder et al., 2022). In order to explore the potential influence of class climate and inform implementation practice, we took a broad lens and examined change in individual, couple, and family domains. We first considered immediate skill-based behavioral change. A key assumption of skill-based CRE is that participants will show improvements in competencies that will predict improved functioning (Adler-Baeder et al., 2022). These skills are changes we expect participants to be able to apply immediately following exposure to CRE. Therefore, we examined the potential influence of class climate separately on two immediate skill-based behaviors: self-care and conflict management. For the more distal outcomes that focus on long-term functioning, we consider indicators expected to be impacted by the practice of gained skills: improved mental health, couple relationship quality, and family harmony. We examined change in multiple domains in order to best inform implementation science. It may be that the influence of each class-level predictor is domain specific or it may be that a class-level predictor influences multiple outcomes and domain. Understanding the nature of these relationship can help guide implementation practices.

Proximal Gains: Change in Immediate Skills. Examining the potential influence of the class climate on skills can further our understanding of elements of the process that facilitate immediate change. For individuals, a critical aspect of healthy stress management is self-care, or how well an individual maintains and enhances their physical, psychological, and sexual health

and wellness (Adler-Baeder et al., 2010). The National Extension Relationship and Marriage Education Model identified seven core skills that promote couple quality (Futris & Adler-Baeder, 2013). Self-care is one of the seven core skills of CRE highlighting the importance of mental and emotional wellbeing for a healthy relationship (McGill et al., 2020). Improved conflict management is another of the core components of CRE. CRE participants indicated they gain conflict management skills and they report more positive conflict-based interactions after the course (Adler-Baeder et al., 2010; Charles et al., 2014; Futris & Adler-Baeder, 2013). Taken together, gains in skills such as self-care and conflict management are critical immediate changes after exposure to CRE.

Distal Gains: Change in Functioning. The intention of CRE is to facilitate long-term improvements in individual, family, and even family functioning; functioning improvements that are facilitated by the enduring application of immediate skill gains (Adler-Baeder et al., 2010; Adler-Baeder et al., 2018; Adler-Baeder et al., 2022; Rhoades, 2015). Recently, Adler-Baeder and colleagues (2022) demonstrated gains in all three domains in an efficacy study that examined the programmatic effect of two curricula. The randomized control trial found significant gain in mental health for one of the curricula and significant gains in both couple quality and family harmony for both curricula; gains that were maintained one year after exposure to CRE. Functioning in each of these domains has been found to be positively impacted following exposure to CRE. In the individual domain, exposure to CRE has been associated with improvements in mental health (Bradford et al., 2014). For the couple domain, improved relationship quality is one of the most commonly examined outcomes in CRE studies. Relationship quality can include many aspects of the dynamic including how the couple assesses the relationship, their satisfaction with the relationship, and their commitment towards

maintaining the relationship (Sanri et al., 2021). A meta-analysis of 117 studies demonstrated a significant change in couple relationship quality immediately after CRE (Hawkins et al., 2008). Halford and Bodenmann's (2013) literature review of 17 randomized control trials found that 14 of the studies demonstrated positive effects of CRE on couple satisfaction; increased satisfaction that endured following CRE exposure. Lastly, assessments of family harmony consider the positivity of the interactions between all family members in the home (Banker & Gaertner, 1998). Research has shown individuals who participate in CRE report improved family harmony up to one year after exposure to CRE (McGill et al., 2016; Adler-Baeder et al., 2022). Taken together, mental health, relationship quality, and family harmony are important aspects of overall functioning and are critical for understanding the long-term influence of CRE on the entire family system.

In sum, exposure to CRE has shown important benefits for participants in individual, couple, and family domains. It was unknown whether changes in skills and functioning in these domains are susceptible to influence from fellow classmates. As we found no studies exploring the influence of classmate characteristics on adult gains after exposure to CRE, we explored whether class climate influences skills and functioning in multiple domains. We considered a number of outcomes associated with CRE exposure in order to take a broader perspective on potential short- and long-term impacts of the class climate. Because CRE is an intervention targeting individual, couple, and family improvements; factors such as class climate that might influence whether and how participants benefit from CRE exposure is critical to inform implementation practices.

Methodological Challenges in the Evaluation of Relationship Education

One of the critical assumptions of linear regression requires the independence of the observations (Raudenbush & Byrk, 2002). That is, in order to use linear regression, each observation must be unrelated to the other observations. In a CRE experience, individuals tend to be nested in couples and those couples are nested in classes. Therefore, applying linear regression modeling without accounting for the nesting of individual observation violates a crucial assumption of the model (Raudenbush & Byrk, 2002). Models that fail to account for the nested data structure may produce biased test statistics and overestimate an intervention's effectiveness (Carvajal et al., 2001). One common approach to dealing with the dependence of individuals in a couple has been to conduct separate analysis for men and women. Unfortunately, this approach doesn't account for the shared experience that occurs during the CRE experience which is a critical consideration for implementation research. The approach also precludes analysis to parse out the relative variation that occurs at the individual and couple levels.

While education research has a long history of employing advanced methodology to address nesting and understanding the influence that occurs at different levels, it is a less common practice in psychoeducation and family science research (Bangdiwala et al., 2018; Nastasi & Hitchcock, 2009). Even so, in recognition of the interdependence of couples, some CRE researchers have employed advanced modeling to account for the dependent nature of dyadic data. The most common methodological approach for exploring the influence of partners situated within a couple has been the application of the Actor Partner Interdependence Model (APIM). APIM has been used by many CRE researchers to examine whether and how each partner changes and influences change in the other partner (e.g., Braithwaite, & Fincham, 2011;

Ketring et al., 2017; McGill et al., 2016; Wheeler et al., 2019). Although the use of APIM has provided many critical insights regarding the influence of one partner over the other, it does not address the nesting of those couples in CRE classes.

Another methodological approach that accounts for the nesting of individuals in couples and allows consideration of predictors at multiple levels is the two-level multiple regression model (e.g., Owen et al., 2012; Williamson et al., 2015). These complex models account for the couple's interdependence and can identify factors that influence variation at the individual and at the couple level. Even so, two-level models cannot simultaneously account for the nesting of couples in a class. To account for both the nesting of individuals in couples and couples in classes, a three-level regression model is needed which explores 1) individual-level variations in change after exposure to CRE, 2) couple-level variations in change after exposure to CRE, and 3) class-level variations in change after exposure to CRE. The requirements of a three-level model necessitate a larger sample and more complex analysis than a two-level model; thus, very few adult-focused CRE studies have attempted to used multi-level regression modeling to explore individual, couple, and class-level influences (Laurenceau et al., 2004). One multilevel modeling study of adult CRE participants accounted for the nesting of participants in the class, however, the limited sample size precluded the researchers from exploring class-level differences (Owen et al., 2013). Laurenceau and colleagues (2004) also employed a three-level model to examine whether adult treatment effects differed by curricula via examining class-level effects for adult participants of CRE. Distinct from our study's focus, the focus of the Laurenceau (2004) study was whether there were class-level differences derived from the different curricula rather than from classmate characteristics. Their singular focus on curricula was necessary because participant assignment to the curricula was not randomized among the numerous

organizations providing the CRE. Due to the limits of their study design, Laurenceau and colleague (2004) were unable to explore the potential influence of other aspects of class climate.

It may be that there is minimal class-level influence and variation suggesting that accounting for the nesting of couples in adult CRE classes is statistically trivial (< 10%; Singer, 1998). However, we have found no adult CRE literature that has examined whether there is non-trivial class-level variation. As previously stated, we are aware of only two RE studies that specifically considered the influence of classmate characteristics on individual change; both of these studies examined the effects of YRE on adolescent populations (Ma et al., 2014; Morrison et al., 2018). There may be theoretical and methodological reasons that the first relationship education studies considering the influence of classmates focused on adolescents. Developmentally, we expect the influence of classmates on adolescent change may be more impactful than for adults due to the prominence of peer influence experienced during adolescence (Albert & Steinberg, 2011; Brown & Larson, 2009). Pragmatically, unlike adult CRE, exploring the nesting of adolescent students in school-based classes only requires a two-level model; adolescent YRE studies do not necessitate accounting for the nesting of couples in those classes. It remained to be seen whether an aspect of class climate, classmate characteristics, similarly influences gains for adult participants of CRE.

The Current Study

Although there does not appear to be any studies to date that have considered the influence of an aspect of the class climate, classmate characteristics, on adult change following CRE, there are conceptual, empirical, theoretical, and methodological reasons to believe it is worth exploring. Understanding whether and how the class climate may influence gains in skills immediately after the class provides valuable information for CRE facilitators. Further,

understanding whether and how the class climate might impact gains in functioning, an overarching goal of CRE, is an important next step for CRE implementation science. We employ a three-level regression model to explore whether various classmate characteristics influence individual adult residual change in skills and functioning in multiple domains. Because of the complexity of each model for each outcome of interest, we organized the research questions by outcome:

Research Question 1: Does the class climate influence residual change in self-care skills immediately following CRE?

RQ1A: Accounting for individual-level influences, do class-level mean scores of individual (i.e., income, perceived stress) or relationship factors (i.e., couple relationship quality) influence individual residual change in self-care skills immediately following CRE?

RQ1B: Is there a cross-level interaction between class-level influence and the respective individual level on self-care skills? For example, does the influence of class-level income on gains in self-care skills depend on individual-level income.

Research Question 2: Does the class climate influence residual change in conflict management skills immediately following CRE?

RQ2A: Accounting for individual-level influences, do class-level mean scores of individual (i.e., income, perceived stress) or relationship factors (i.e., couple relationship quality) influence individual residual change in conflict management skills immediately following CRE?

RQ2B: Is there a cross-level interaction between class-level influence

and the respective individual level on conflict management skills?

Research Question 3: Does the class climate influence residual change in mental health one year after CRE?

RQ3A: Accounting for individual-level influences, do class-level mean scores of individual (i.e., income, perceived stress) or relationship factors (i.e., couple relationship quality) influence individual residual change in mental health functioning one year after CRE?

RQ3B: Is there a cross-level interaction between class-level influence and the respective individual level on mental health functioning?

Research Question 4: Does the class climate influence residual change in relationship quality one year after CRE?

RQ4A: Accounting for individual-level influences, do class-level mean scores of individual (i.e., income, perceived stress) or relationship factors (i.e., couple relationship quality) influence individual residual change in relationship quality one year after CRE?

Research Question 5: Does the class climate influence residual change in family harmony one year after CRE?

RQ5A: Accounting for individual-level influences, do class-level mean scores of individual (i.e., income, perceived stress) or relationship factors (i.e., couple relationship quality) influence individual residual change in family harmony one year after CRE?

RQ5B: Is there a cross-level interaction between class-level influence and the respective individual level on family harmony?

III. Methods

Procedures

This study used selected data from a larger randomized control trial evaluating the effectiveness of two CRE interventions (see Adler-Baeder et al., 2022). The original study recruited couples in five cohorts from ten sites across a southeastern state who were informed about the study, signed informed consent, and completed a baseline survey. In the original study, married and committed non-married couples were randomly assigned at each site and by cohort to one of three conditions: 1) *ELEVATE* 2) *Connecting Couples Mindfully* and 3) a control group receiving no CRE. *ELEVATE: Taking Your Relationship to the Next Level* is a skills-based CRE psychoeducational course focused on improving relationship quality (Futris et al., 2014). *Connecting Couples Mindfully* (CCM) also focuses on enhancing a couples' relationship practices and emphasizes the use of mindfulness practices in relationships (McGill et al., 2016). Only participants assigned to one of the two intervention groups in the original study were included in our analysis; those participants in the control group (n = 606) did not experience a shared class environment. Both treatment conditions were conducted in six lessons over the course of six weeks. Although participants completed a baseline survey and a follow-up survey following the intervention, at six months, and at one year after the intervention; we exclusively used the immediate post program survey paired with the baseline survey to examine residual change in self-care and conflict management skills and the one-year survey paired with the baseline survey to examine residual change in mental health, relationship quality, and family harmony. Participants were provided a $50 incentive per completed survey.

Participants

We examined changes in skills demonstrated directly following the intervention and changes in functioning one year after the class. As the focus of our exploratory study was the influence of classmate characteristics on gains from CRE, we excluded from our sample those couples who did not attend at least four of the six classes (n = 453). Understanding this to be a novel and exploratory study, we reasoned that the potential influence of classmates would be more appreciable with more class exposure. Even so, the need for statistical power and the pragmatics of class attendance precluded us from a greater class attendance requirement. The analytic sample was comprised of 797 participants (51% female; 49% male) representing 378 couples and 41 singles. Although the average age of the participants was 39 years old, it is worth noting 32% of them were 30 or younger. Approximately 61% of the participants identified as White/European-American, 32% identified as Black/African-American, and 7% identified as other races such as Asian-American (2%). Reported household incomes included less than $25K (22%), between $25K and $40K (15%), between $40K and $75K (17%), and more than $75K (32%). The majority of the couples were married (75%), heterosexual (98%), parents (74%) and the average time they have been with their current partner was just under 5 years. Comparisons between those included in the analytic sample and those removed due to dosage of less than four classes, indicate those who were removed were approximately four years younger on average (t (1211) = 14.603, p < .001) and reported less income (t (1191) = 4.362, p = .037). The two groups did not differ by distribution of gender (X^2 (1, N=1250) = 1.27, p =.26) or race (X^2 (4, N=1220) = 3.66, p =.54)

Measures

Independent Variables

We examined three predictors to reflect the personal and the averaged characteristics of the class.

Income. Prior to exposure to RE, participants were asked about their total household income before taxes in the current year. Possible responses included 1 = Less than $7,000; 2 = $7,000 to $13,999; 3 = $14,000 to $24,999; 4 = $25,000 to $39,999; 5 = $40,000 to $74,999; 6 = $75,000 to $99,999; and 7= $100,000 or more. For class income, the scores for each participant in the class were averaged and assigned to each individual in the class; a higher average score indicated a more affluent class.

Perceived Stress. Perceived Stress was measured using a 10-item self-report questionnaire during the pretest that included items such as "Found that you could not cope with all the things that you had to do?", "Felt nervous or stressed?", and "Felt difficulties were piling up so high that you could not overcome them?" ($\alpha = 0.88$). Each item ranged from 1 (Never) to 5 (Very Often) resulting in total possible summed scores ranging from 10 to 50 (Cohen et al., 1983). Higher baseline scores are indicative of greater stress. For class Perceived Stress, the scores for each class were averaged and assigned to each individual in the class.

Relationship Quality. Relationship Quality was captured prior to exposure to CRE using four items from the Couple Satisfaction Index (Funke & Rogge, 2007). The measure asks the participant to 1) indicate the degree of happiness in the relationship from 1= extremely unhappy to 7= perfect, 2) indicate agreement with the statement "I have a warm and comfortable relationship with my partner" from 1 = Not true at all to 6 = Completely True, and both 3) how rewarding is your relationship with your partner and 4) how satisfied are you with your

relationship on scales from 1 = Not at all to 6 = Completely (α = 0.89). Scores were summed such that higher baseline scores are indicative of greater relationship quality. For class relationship quality, the scores for each class were averaged and assigned to each individual in the class.

Dependent Variables

We explored five dependent variables from the domains of individual, couple, and family functioning to examine short- and long-term change following exposure to CRE.

Immediate Skills. *Self-Care* was captured with eight items from a subscale of the recently validated Couple Relationship Skills Inventory (Adler-Baeder et al., 2021). Four of the items were adapted from a previous study by one of the survey authors and include "I recognize my strengths," and "I manage the stress in my life" (Adler-Baeder et al., 2010). The other four items were created by the authors of the original study and include items such as "I have quiet time for myself every day" and "I eat healthy meals every day." Responses to items ranged from Very Strongly Disagree (1) to Very Strongly Agree (7) (for males, α = 0.76 at pretest and 0.81 at posttest; for females, α = 0.81 at pretest and 0.82 at posttest). Scores were summed across the eight items and higher scores are indicative of better self-care. Change in *Self-Care* was represented by the participant's immediate posttest *Self-Care*, controlling for the participants pretest *Self-Care*.

Another subscale of the Couple Relationship Skills Inventory was used to capture *Conflict Management* (Adler-Baeder et al., 2021). The eight items include items from existing scales and some developed by the original study authors that focused on conflict management and interpersonal competence in the past month. Example items include "I am able to see my partner's point of view and really understand it, even if I don't agree", "I can easily forgive my

partner", and the reverse of "I hit, grab, or push my partner" and "I blame, accuse, or criticize my partner" (Buhrmester et al., 1988; Christensen & Sullaway, 1984; Stanley et al., 2002; for males, $\alpha = 0.70$ at pretest and 0.71 at posttest; for females, $\alpha = 0.71$ at pretest and 0.76 at posttest). Possible responses ranged from Very Strongly Disagree (1) to Very Strongly Agree (7). Higher scores are indicative of better conflict management skills. Change in *Conflict Management* was represented by the participant's immediate posttest *Conflict Management*, controlling for the participants pretest *Conflict Management*.

Long-Term Functioning. *Mental Health* was captured using 12 items from the mental health scaled subscore of the SF-36 Health Survey (Ware & Gandek, 1998; for males, $\alpha = 0.76$ at pretest and 0.77 at posttest; for females, $\alpha = 0.79$ at pretest and 0.79 at posttest). The 12 items in the subscore were designed to assess a range of mental health symptomology using differing scales and different response anchors (e.g., extremely to not at all, or none of the time to all of the time; Ware et al., 1996). Example survey items include, "Have you felt so down in the dumps that nothing could cheer you up" and "How much of the time in the past month have you felt calm and peaceful" in the past four weeks. Per the scoring instructions, responses were standardized, summed, and then further standardized by adding a constant (60.75781; Maruish, 2012). Possible subscores range from 0 to 100 with an average of 50 and standard deviation of 10; higher scores indicate higher individual mental health. Change in individual *Mental Health* was represented by the participant's *Mental Health* one year post CRE exposure, controlling for the participants pretest *Mental Health*.

Relationship Quality was comprised of scores from three indicators of relationship functioning: Four items from the Couple Satisfaction Index (Funke & Rogge, 2007), three items from Quality Marriage Index (Norton, 1983), and three items that captured confidence and

dedication (Stanley & Markman, 1992; for males, α = 0.95 at pretest and 0.96 at posttest; for females, α = 0.96 at pretest and 0.97 at posttest) The Couple Satisfaction Index asked the participant to 1) indicate the degree of happiness in the relationship from 1= extremely unhappy to 7= perfect, 2) indicate agreement with the statement "I have a warm and comfortable relationship with my partner" from 1 = Not true at all to 6 = Completely True, and both 3) how rewarding is your relationship with your partner and 4) how satisfied are you with your relationship on scales from 1 = Not at all to 6 = Completely (α = 0.89 and 0.87). The Quality Marriage Index asked for degree of agreement on statements such as "We have a good relationship" and "My relationship makes me happy." Possible answers ranged from Very Strongly Disagree (1) to Very Strongly Agree (7). Finally, confidence and dedication items included statements like "I feel good about our prospects to make this relationship work for a lifetime" and "We have the skills a couple needs to make a marriage last." Similar to the QMI, possible answers ranged from Very Strongly Disagree (1) to Very Strongly Agree (7). Responses were summed and aggregated for each participant. Higher scores are indicative of better couple relationship quality. Change in *Relationship Quality* was represented by regressing the participant's *Relationship Quality* one year later on their pretest *Relationship Quality* score.

Family Harmony was captured from a scale developed by Banker and Gaertner (1998). The scale included three items: "Generally there is a feeling of contentment and happiness in my house", "Overall, there are more happy feelings, than unhappy feelings in my home", and the reverse of "There are many disagreements in my house" using a scale from 1= Very Strongly Disagree to 7= Very Strongly Agree (for males, α = 0.79 at pretest and 0.79 at posttest; for females, α = 0.84 at pretest and 0.83 at posttest). Higher scores are indicative of more family

harmony. Change in *Family Harmony* was represented by the participant's *Family Harmony* score at one year after CRE accounting for their pretest *Family Harmony* score.

Demographic variables

Several demographic control variables were included in the analysis including age, gender, race, couple time together, and education level. Class CRE curriculum was also included to account for any differences in CRE gains due to curricula.

Gender

To determine participant gender, individuals were asked if they identify as male or female. Males were coded as 0 and females were coded as 1.

Age

Participants were asked their age in years.

Race

Participants were also asked, "which of the following best describes your race?" Possible responses included 1=European-American/White, 2=African-American/Black, 3=Hispanic/Latino, 4=Asian-American, 5=Native-American/ Alaskan Native, 6=Native Hawaiian/ Other Pacific Islander, 7=Biracial, and 8=Other. The majority of participants were either European-American/White or African-American/Black. Due to this distribution, two dummy variables were created, African American and other minorities, for analysis.

Couple Time Together

Participants were asked how long they have been with their current partner in years and months. Time together prompts included "How long have you been with your current partner?" (for those participants that indicated they were not married), "How long have you been married to your present spouse?" (for those participants who were married), and "If you lived with your

current spouse before marriage, how long did you live together before marriage." These reported times were summed to create a proxy variable for total time together as a couple.

Education

To identify individual educational background, participants were asked, "What is the highest degree, diploma, or certification you have earned?" Response options included 1=No degree or diploma earned, 2=High School GED, 3=High school diploma, 4=Vocational/technical certification, 5=Some college but no degree completion, 6=Associate's, 7=Bachelor's, and 8=Master's/Advanced. We treated this variable as a continuous control variable.

RE Curricula

To control for possible difference by curricula, classes exposed to *ELEVATE* CRE were coded as a 1 and classes exposed to CCM CRE were coded as a 0.

Analysis Plan

In the original efficacy study, Adler-Baeder and colleagues (2022) applied multiple imputation procedures to address the issue of missing data. By applying chain equations using classification and regression trees (CART), Adler-Baeder and colleagues (2022) were able to predict missing data using auxiliary variables; a procedure shown to effectively account for outliers and non-normalcy (Enders, 2010; Strobl et al., 2009). The average rate of missingness for these data were 6% at baseline, 14% at immediate follow up, and 23% at one year; the majority of the missingness was due to attrition or skipped assessments across the post intervention follow ups (Adler-Baeder et al., 2022). Multiple values were predicted for each missing data point using items in the raw data as covariates (e.g., site, sex, age, relationship type, public assistance, etc.). Adler-Baeder and colleagues (2022) created 20 data sets to be pooled to

determine parameter estimates based on Robin's rule (Azur et al., 2011). This current study leveraged the same imputed data previously created by Adler-Baeder and colleagues (2022).

For each of the immediate skills, self-care and conflict management, we used multilevel modeling to examine differences in scores from pretest to conclusion of the course posttest, accounting for the nesting of participants in a couple and couples in a shared classroom (RQ1 & RQ2). For each of the functioning domains - mental health, relationship quality, and family harmony - we used multilevel modeling to examine differences in scores from pretest to one-year follow-up, accounting for the nesting of participants in a couple and couples in a shared classroom (RQ3, RQ4, & RQ5). We fit multilevel modeling procedures using SPSS (Version 27).

After group mean centering the individual-level factors and grand mean centering the class-level factors, we built a separate series of nested multilevel models for each outcome of interest; change in self-care (RQ1), conflict management (RQ2), mental health (RQ3), relationship quality (RQ4), and family harmony (RQ5). We first conducted an intraclass correlation (ICC) analysis for each outcome to determine the proportion of individual participant variance attributable to individual, couple, and class differences. In order to examine change, we conducted the ICC on posttest scores (immediate posttest for the skills and one year posttest for functioning), controlling for pretest scores. All subsequent models continued to be autoregressive; we included baseline scores in order to focus on change in each of the outcomes of interest. We built the models using a step-wise approach first including the individual-level control variables of gender, age, race, couple time together in the relationship, and education status. We then included the class-level control variable CRE curricula to account for possible differences by program (*ELEVATE* or *CCM*).

Next, we included the individual levels for income, perceived stress, and relationship satisfaction in order to account for personal levels when exploring the influence of class climate. We then included the aggregated class-level indicators (income, perceived stress, and relationship satisfaction) to examine class climate influence in each outcome of interest: self-care, conflict management, mental health, relationship quality, and family harmony and to determine the nature of the influence (i.e., positive/negative). To explore whether a participant with a higher personal baseline benefits from being in a higher or lower-level class, we further examined whether the influence of the classmate characteristic was moderated by the personal baseline level of that same predictor for each outcome (RQ1-5B). If an interaction was significant, we created prototypical plots derived from high and low values (one standard deviation from the average) at the individual and class levels in order to help depict and interpret the complex relationships.

For each outcome, we determined the final model selection based on substantive meaning, the deviance statistic (Δ-2 Log Likelihood), and evaluation of the AIC and BIC fit statistics. We calculated the global effect size of each best fitting model. A correlation between the predicted and the observed scores, the global effect size captures how much of the total variance in the model we explained by including the predictors. Lastly, we distinguished how much variation the final model explains at the individual and class-level.

IV. Results

Preliminary Analysis

Correlations and descriptive statistics are available in Table 1. We provide classroom averages from a random sample of ten classes for class-level income (see Figure 1), class-level perceived stress (see Figure 2), and class-level relationship quality (see Figure 3), aggregate class change in self-care (see Figure 4), aggregate class change in conflict management (see Figure 5), aggregate class change in mental health (see Figure 6), aggregate class change in relationship quality (see Figure 7), and aggregate class change in family harmony (see Figure 8) in order to demonstrate class-level differences in key predictors and outcomes. We present parameter estimates including both fixed and random effects as well as model fit statistics from the multilevel regression models predicting change in self-care in Table 2, change in conflict management in Table 3, change in mental health in Table 4, change in relationship quality in Table 5, and change in family harmony in Table 6.

Research Question #1: Change in Self-Care

We first fit an unconditional means multilevel model and calculated the intraclass correlation (ICC), to determine the proportion of total variation that can be attributed to individual-level, couple-level, and class-level variation for change in self-care. There was significant variation in change in self-care across individual participants (r_{ijk}= 20.936, p <.001), across couples (μ_{0jk}= 2.876, p< .05), and across classes (μ_{00k}= 8.123, p< .001). Controlling for pretest self-care, 25.4 % of the individual variation in self-care was attributable to between class variation. We next incorporated the control variables of gender, age, race, education, couple time together, and curriculum. Although we included them in all models, none of the control variables demonstrated influence on change in self-care (Model B).

Next, we included our individual-levels of the variables income, perceived stress, and relationship quality (Model B). Both individual income (β_8 = -0.321, p<.05) and individual perceived stress (β_8 = -0.144, p<.001) negatively influenced immediate change in self-care after exposure to CRE. We tested whether the relationships between individual income and change in self-care varied by couple or by class; they did not. We then examined whether the relationship between individual perceived stress and change in self-care varied by couple or by class. We did find that the relationship between individual perceived stress and change in self-care varied by couple (μ_{90k}= 0.083, p<.01). As such, we allowed the slope of perceived stress to randomly vary by couple in all subsequent self-care models.

We next explored the class-level variables income, perceived stress, and relationship quality. Class-level income influenced change in self-care such that those in more affluent classes had smaller gains in self-care (γ_{002} =-0.996, p<.001). Class-level perceived stress influenced change in self-care such that those in more initially stressed classes had smaller gains in self-care (γ_{003} =-0.553, p<.001). Lastly, class-level relationship quality influenced change in self-care such that those in classes with greater overall baseline relationship quality had greater gains in self-care (γ_{004} =0.148, p<.05).

We then tested interactions between the individual level and class level of the three predictors (RQ1B). We found no interaction for income; individual income did not moderate the relationship between class income and change in self-care. Interestingly, individual perceived stress did moderate the relationship between class perceived stress and change in self-care (γ_{909} = 0.034, p<.01). The negative influence of a highly stressed class on gains in self-care skills was especially impactful for those participants who initially indicated lower stress (See Figure 9). These lower stressed students who shared the CRE experience with highly stressed classmate

gained less benefit in self-care skills than similarly stressed individuals in lower stressed classes. Individual relationship quality did not moderate the association between class relationship quality and change in self-care.

After removing the non-significant interactions for the sake of parsimony, the deviance statistic improved (Δ -2 LL = 10.1, $p < .001$), the AIC statistic decreased, and the BIC statistic decreased; taken together these statistics indicate improved model fit. Therefore, the final estimated equation for change in self-care was

$$\hat{Y}_{ijk} = 38.051 + 0.578(\text{pretest self-care}) + 0.560(\text{female}) - 0.12(\text{age}) - 0.222(\text{African American}) - 1.195(\text{other minority}) - 0.003(\text{time together}) + 0.021(\text{education}) + 0.245(\text{curriculum}) - 0.338(\text{individual income}) - 0.996(\text{class income}) - 0.145(\text{individual perceived stress}) - 0.550(\text{class perceived stress}) + 0.037(\text{individual perceived stress} * \text{class perceived stress}) + 0.076(\text{individual relationship quality}) + 0.149(\text{class relationship quality})$$

Taken together, the final model explained 15.6% of the individual-level variance, 35.8% of the couple-level variance, and 68.1% of the class-level variance.

Calculation of the global effect size indicated that we explained 46.6% of the variation in change in self-care, controlling for individual gender, individual race, couple time together, education and CRE curriculum, by including individual income, class income, individual perceived stress, class perceived stress, the interaction between individual and class perceived stress, individual relationship quality, and class relationship quality in the final model. Our baseline model (A) consisted of immediate posttest *Self-Care* controlling for pretest *Self-Care* employing autoregression to assess change in self-care. By including both the individual and class-level predictors, we improved our individual-level predictive ability for self-care by 22.2%

relative to baseline. Moreover, we improved our class-level predictive ability by 18.3% relative to baseline.

Research Question #2: Change in Conflict Management

For conflict management we similarly first fit an unconditional means multilevel model and calculated the intraclass correlation (ICC) in order to determine the proportion of total variation that can be attributed to individual-level, couple-level, and class-level variation for immediate change in conflict management following exposure to CRE. There was significant variation in change in conflict management across individual participants (r_{ijk}= 18.387, p <.001), across couples (μ_{0jk}= 4.958, p< .001), and across classes (μ_{00k}= 5.207, p< .001). Controlling for pretest conflict management, 18.2 % of the individual variation in conflict management was attributable to between class-level variation. We next added the control variables of age, gender, race, education, couple time together, and curriculum to the model. Although we retained the control variables in the models, none of the control variables reached significance in any of the models.

We next focused on the individual-level variables income, perceived stress, and relationship quality (Model H). Individual income (β_8 = -0.328, p<.05) and individual perceived stress (β_9 = -0.074, p<.05) negatively influenced change in conflict management, yet individual relationship quality (β_{10} = 0.188, p<.001) positively influenced gains in conflict management. Although we tested whether the relationships between these individual level predictors and change in conflict management varied by couple or by class, we did not allow the slopes of any of the individual level predictors to randomly vary by couple or class in subsequent conflict management models because none varied significantly. We next explored the class level of our predictors of interest. Class-level income influenced change in conflict management such that

those in more affluent classes had smaller gains in conflict management (γ_{002} =-0.903, p<.001). Class-level baseline perceived stress did not influence change in conflict management. Class-level relationship quality positivity influenced change in conflict management such that those in classes with higher baseline relationship quality had larger gains in conflict management (γ_{004} =0.307, p<.001).

We next tested interactions between each of the paired individual and class-level predictors (RQ2B). Individual income did not moderate the relationship between class income and change in conflict management; similarly, individual relationship quality did not moderate the relationship between class relationship quality and change in conflict management. Individual perceived stress moderated the relationship between class perceived stress and change in conflict management (γ_{909} = 0.039, p<.001). Participants with higher baseline individual stress in classes with higher aggregate stress had the lowest conflict management gains, and similarly high stressed individuals in low stressed classes experienced the largest conflict management gains (See Figure 10). For low stressed individuals, the influence of class stress was less noteworthy; even so, low stressed participants in low stressed class experience more benefit in conflict management gains than similar low stress participants in high stress classes.

After removing the non-significant interactions for the sake of parsimony, we compared the final model to the class-level model (Model J). The deviance statistic improved (Δ -2 LL = 12.1, p< .001), the AIC statistic decreased, and the BIC statistic decreased indicating improved model fit. As such, the final estimated equation for change in conflict management is

$\hat{Y}_{ijk}$ = 41.963 + 0.431(pretest conflict management) - 0.121(female) + 0.017 (age)
-0.217 (African American) – 0.223(other minority) - 0.009(time together) -
0.501(education) + 0.334(curriculum) - 0.332(individual income) - 0.911(class income) –

0.087(individual perceived stress) - 0.104(class perceived stress) + 0.035(individual perceived stress*class perceived stress) + 0.196(individual relationship quality) + 0.309(class relationship quality)

The final model explained 1.4% of the individual-level variance, 26.7% of the couple-level variance, and 78.7% of the class-level variance for change in conflict management.

Computation of the global effect size indicated that we explained 38.7% of the variation in change in conflict management, controlling for individual gender, individual race, couple time together, education and CRE curriculum, by including individual income, class income, individual perceived stress, class perceived stress, the interaction between individual and class perceived stress, individual relationship quality, and class relationship quality in the final model. The baseline model (Model G) for change in conflict management included pretest conflict management in order to focus on change. By including the individual and class-level predictors, we improved our individual-level predictive ability for conflict management by 19.9% relative to baseline. We improved our class-level predictive ability by 4.9% relative to baseline.

Research Question #3: Change in Mental Health

Once again, we first fit an unconditional means multilevel model and calculated the intraclass correlation (ICC) for change in mental health functioning. There was significant variation in change in mental health across individual participants (r_{ijk}=53.188, p <.001), across couples (μ_{0jk}= 14.470, p< .001), and across classes (μ_{00j}= 5.454, p< .05). Controlling for pretest mental health, 7.5 % of the individual variation in mental health one year after exposure to CRE was attributable to between class-level variation. Although we next incorporated the control variables of gender, age, race, couple time together, education, and curriculum; none reached significance. Even so, we retained all controls in all models.

In building the models, we next examined our individual and class-level variables for income, perceived stress, and relationship quality. For the individual-level variables, we found that individual perceived stress (β_9 = -0.269, p<.001) predicted change in mental health over one year, such that those individuals who endorsed higher baseline individual stress had less gains in mental health functioning. The relationship between individual perceived stress and change in mental health varied by couple (μ_{90k}= 0.163, p<.05); we allowed it to vary by couple in the remaining models. For the class-level variables, class-level perceived stress (γ_{003} =-0.407, p<.01) negatively influenced change in mental health and class-level relationship quality (γ_{004} =0.217, p<.05) positively influenced change in mental health. Finally, we tested interactions between each of the individual and class-level predictors (RQ3B), but none were significant and were not retained in the final model.

In the final model (R) the deviance statistic improved (Δ -2 LL = 31.4, p< .001), the AIC statistic decreased, and the BIC statistic decreased; taken together, these statistic indicate improved model fit. The final estimated equation for change in conflict management is

$$\hat{Y}_{ijk} = 44.730 + 0.296(\text{pretest mental health}) + 0.171(\text{female}) + 0.017(\text{age}) - 0.572(\text{African American}) + 0.852(\text{other minority}) + 0.023(\text{time together}) + 0.126(\text{education}) - 0.471(\text{curriculum}) - 0.020(\text{individual income}) - 0.266(\text{individual perceived stress}) - 0.395(\text{class perceived stress}) + 0.074(\text{individual relationship quality}) + 0.213(\text{class relationship quality})$$

Taken together, the final model explained 4.8% of the individual-level variance, none of the couple-level variance, and 85.9% of the class-level variance.

The global effect size indicated that we explained 23.8% of the variation in change in mental health functioning, controlling for individual gender, age, race, couple time together,

education, and CRE curriculum, by including individual income, individual perceived stress, class perceived stress, individual relationship quality, and class relationship quality in the final model. To focus on change, our baseline model (M) for change in mental health one year after CRE was autoregressive. By including individual and class-level predictors, we improved our individual-level predictive ability for mental health by 16.0% relative to baseline. The class-level predictive ability was improved by 14.3% relative to baseline.

Research Question #4: Change in Relationship Quality

Again, we started the model building by fitting an unconditional means multilevel model and calculating the intraclass correlation (ICC) for change over one year in relationship quality. There was significant variation in change in relationship quality across individual participants (r_{ijk}=43.679, p<.001), across couples (μ_{0jk}= 19.034, p< .001), and across classes (μ_{00k}= 13.610, p< .001). Controlling for pretest relationship quality, 17.8% of the individual variation in relationship quality was attributable to between class-level variation. We next incorporated the control variables of gender, age, race, couple time together, education, and curriculum (Model T). Of the control variables, age (β_3 = -0.078, p< .05) and couple time together (β_6 = 0.952, p< .05) were statistically significant. On average, younger participants had greater gains in relationship quality over one year than older participants. The influence of age did not remain significant after we included the individual-level predictors in the model. Interestingly, those who had been with their partner for a longer period of time had greater gains in relationship quality.

We next focused on the individual-level of our variables income, perceived stress, and relationship quality. Individual income did not influence change in relationship quality. Individual perceived stress did influence change in relationship quality (β_9 =-0.172, p<.001) such

that those with more baseline perceived stress experienced less beneficial change in relationship quality. Pretest relationship quality was already in the model because a pretest value for the outcome is necessary for autoregression to examine change. In the first relationship quality model (S) we examined whether pretest relationship quality positively predicted posttest relationship quality one year after exposure to CRE and it did (Model S; $\beta_1 = 0.503$, $p < .001$). We were not able to add another measure of baseline relationship quality to the building of the models due to concerns of multicollinearity. As such, we were unable to examine whether baseline relationship quality predicts residual change in relationship quality. The use of pretest relationship quality employed through the nested models ensures the outcome of focus is residual change in relationship quality.

When we explored the class-level variables for income, perceived stress, and relationship quality; only class relationship quality influenced change in relationship quality following exposure to CRE such that participants in classes with higher baseline average class relationship quality experienced greater gains in their own relationship quality one year later (Model V; $\gamma_{004} = 0.569$, $p < .001$). Although we tested the interaction of paired predictors at the individual and class levels (RQ4B), none were significant. The final selected model (X) included only the class-level predictor relationship quality. Relative to the model with no class-level predictors, the deviance statistic improved (Δ -2 LL = 57.1, $p < .001$), the AIC statistic decreased, and the BIC statistic decreased; taken together these statistics indicate improved model fit. The final estimated equation for change in relationship quality was

$$\hat{Y}_{ijk} = 55.331 + 0.460(\text{pretest Relationship Quality}) + 0.461(\text{female}) - 0.062(\text{age})$$
$$-1.368(\text{African American}) - 0.139(\text{other minority}) + 0.098(\text{time together}) +$$

-0.063(education) - 0.108(curriculum) - 0.472(individual income) - 0.170(individual perceived stress) + 0.603(class relationship quality)

The final model explained 2.8% of the individual-level variance, none of the couple-level variance, and 91.6% of the class-level variance.

Calculation of the global effect size indicated that we explained 37.3% of the variation in change in relationship quality, controlling for individual gender, age, race, couple time together, education, and CRE curriculum, by including individual perceived stress and class relationship quality in the final model. Our baseline model (S) for change in relationship quality one year after CRE was autoregressive in order to assess change. By including the individual and class-level predictors, we improved our individual-level predictive ability for relationship quality by 17.8% relative to baseline. We also improved our class-level predictive ability by 5.2% relative to baseline.

Research Question #5: Change in Family Harmony

For the last outcome, we again started with fitting an unconditional means multilevel model and calculating the intraclass correlation (ICC). For change in family harmony one year following exposure to CRE, there was significant variation across individual participants (r_{ijk}=4.795, p <.001), across couples (μ_{0jk}= 1.978, p< .001), and across classes (μ_{00k}= 0.990, p< .001). Controlling for pretest family harmony, 12.8 % of the individual variation in family harmony was attributable to between class-level variation. We next incorporated the control variables of gender, age, race, couple time together, education, and curriculum. Being female was the only significant control; females endorsed larger gains in family harmony one year after CRE. Even so, we retained all control variables in all models.

For change in family harmony, we next examined the individual influence of our key variables: income, perceived stress, and relationship quality. Individual income did not influence change in family harmony one year after CRE. Individual perceived stress influences change in family harmony such that those with more baseline perceived stress experienced less gains in family harmony one year following exposure to CRE ($\beta_9 = -0.080$, $p < .001$). Furthermore, individual relationship quality influences change in family harmony such that those with higher baseline relationship quality experienced greater gains in family harmony one year after CRE ($\beta_{10} = 0.123$, $p < .001$).

We next explored the class-level of the variables: income, perceived stress, and relationship quality. Only class-level relationship quality predicted change in family harmony; those in classes with higher baseline class relationship quality demonstrated greater gains in family harmony one year later ($\gamma_{004} = 0.171$, $p < .001$). Although we tested all the paired individual and class-level interactions, none were significant (RQ5B).

Relative to the individual predictors only model (a), the model with the significant class-level predictors, had an improved deviance statistic (Δ -2 LL = 13.3, $p < .01$), a decreased AIC statistic, and a decreased BIC statistic. Taken together, these statistics indicate improved model fit. The final estimated equation for change in family harmony was

$$\hat{Y}_{ijk} = 16.255 + 0.275(\text{pretest family harmony}) + 0.477(\text{female}) - 0.008(\text{age})$$
$$-0.423(\text{African American}) + 0.496(\text{other minority}) + 0.022(\text{time together}) +$$
$$-0.052(\text{education}) + 0.069(\text{curriculum}) - 0.142(\text{individual income}) - 0.078(\text{individual perceived stress}) + 0.122(\text{individual relationship quality}) + 0.176(\text{class relationship quality})$$

Interestingly, the final model explained 4.1% of the individual-level variance, 20.1% of the couple-level variance, and 87.8% of the class-level variance.

The global effect size indicated that we explained 33.8% of the variation in change in family harmony controlling for individual gender, age, race, couple time together, education, and CRE curriculum, by including individual income, individual perceived stress, individual relationship quality and class relationship quality in the final model. Our baseline model (Y) for change in family harmony one year after CRE was autoregressive in order to assess change. By including the individual and class-level predictors, we improved our individual-level predictive ability for family harmony by 18.9% relative to baseline. Further, we improved our class-level predictive ability by 7.1% relative to baseline.

V. Discussion

There is a growing body of literature that has examined the effectiveness of CRE and how characteristics of CRE participants influence those gains (Arnold & Hawkins et al., 2008). The next generation of CRE studies have begun to consider the contextual factors that influence individual gains from CRE. CRE implementation studies have considered aspects such as dosage and facilitator alliance, but had not yet explored the class environment (Hawkins et al., 2010; Ketring et al., 2017). This CRE study explored one aspect of class climate, classmate characteristics. Informed by two studies that considered the impact of classmate characteristics on gains from YRE (Ma et al., 2014; Morrison et al., 2018), we sought to determine whether the class climate similarly influenced adult gains. We found non-trivial class-level variation for gains in self-care, conflict management, relationship quality, and family harmony (>10%; Singer, 1998). We also found that class economic disadvantage was associated with more short-term skill gains, but had no influence on long-term functioning gains. The influence of class stress on short-term gains depended on personal stress - lower stressed participants experienced less self-care gains in highly stressed classes, however higher stressed participants experienced less conflict management gains in highly stressed classes. Further, less class stress resulted in more long-term mental health benefits. We found that higher class relationship quality was associated with more gains across all short-term skills and long-term functioning suggesting class relationship quality is an important classmate characteristic. Moreover, we improved our ability to predict individual gains from exposure to CRE by considering the characteristics of fellow classmates.

Class Climate Matters

We found no prior research that considered whether class-level variation is a salient consideration for adult community-based educational programs. Informed by related school-

based education studies (e.g., anti-bullying) and the two adolescent studies of relationship education that identified the presence of class influence (Ma et al., 2014; Morrison et al., 2018), we explored whether the influence of the class was also a relevant consideration for adult-focused CRE. Our analysis identified non-trivial class-level variation in four out of the five domains of change (>10%; Singer, 1998). In and of itself, the discovery of class-level variation across change in multiple domains of adult relationship gains is an important finding. It suggests that factors in the immediate CRE classroom environment influence individual learning and these factors are important considerations in the quest to understand why some participants gain more from an intervention than others. Interestingly, change in mental health functioning is the only outcome of which the class-level variation fell under the benchmark to be considered non-trivial (Singer, 1998). Even so, change in mental health was significantly influenced by two of our three classmate characteristics suggesting value in exploring class influence even if the proportion of variance attributable to the class level does not achieve the benchmark to be considered non-trivial. Identification of class-level variation and significant classmate characteristics also suggests that research examining gains from CRE should not only consider models that account for the nesting of individuals in couples, which has previously been leveraged in CRE research (e.g., Owen et al., 2012; Williamson et al., 2015), but should also explore the nesting of couples in classes. Failing to account for the nesting structure may lead to overestimates of treatment effectiveness (Carvajal et al., 2001) and omit class-level factors that can help explain critical variation in participant gains.

We found that elements of the class climate not only influenced proximal gains in skills immediately following the conclusion of the CRE course, but we also found that some elements of the class climate influenced distal changes in functioning that were appreciable one year after

exposure to the class setting. Adler-Baeder and colleagues (2022) demonstrated that immediate gains in CRE skills are predictive of long-term couple functioning. Differences in gains in immediate skills have important bearings on change in long-term functioning. Our study suggests the influence of class context is not limited to immediate change following exposure to the class. We demonstrated that the influence of elements of the class climate impact short-term skill acquisition, but also that some elements of the class climate experienced during CRE have long lasting implications for gains in functioning. Assuming classmates did not stay in contact after the intervention concluded, the class exposure shaped experiences during the course itself and continued to influence the degree to which individuals were able to change even when exposure to classmates was concluded. Taken together, class climate is a germane consideration for both proximal and distal gains from CRE exposure. In the following sections, we examine more specifically the nature of the influence of individual and class-level characteristics of socio-economic status, stress level, and relational health on CRE outcomes for this sample of couples.

Economic Disadvantage and CRE Program Gains

Economically disadvantaged couples are less likely to feel empowered and are more likely to exhibit unhealthy conflict management (Adler-Baeder et al., 2010; Cowan et al., 2007). CRE has been shown to be an effective intervention for low-income couples (Arnold & Beelman, 2019) and has demonstrated some enhanced benefits for those individuals most at risk (Adler-Baeder et al., 2010; Amato, 2014; Carlson et al., 2014). At the individual level in our models, we similarly found that less affluent participants demonstrated more immediate gains in self-care and conflict management skills. Lower-income participants who have less baseline skills may have, in practical terms, the most room for advancement and benefit the most from exposure to the CRE content. It is also likely that lower-income individuals have less access to

resources and education and thus may be more engaged with program content in CRE. We did not find, however, that lower-income participants were advantaged for longer-term changes in mental health, relationship quality, or family functioning.

This is in contrast with other research that has helped to develop a narrative that more at-risk populations are benefitting the most from CRE (e.g., Adler-Baeder et al., 2010; Mitchell et al., 2015; Quirk et al., 2014; Stanley et al., 2020). Differences in findings may be related to distinctions in the timeframe for change. Some research indicating financially distressed couples demonstrate more improvements in relationship quality assessed those relationship quality gains immediately after CRE exposure (e.g., Adler-Baeder et al., 2010; Mitchell et al. 2015; Quirk et al., 2014); the same timeframe as the associations we noted between economic disadvantage and immediate changes in self-care and conflict management. Our study similarly considered short-term gains, but also examined the change that occurred one year following the CRE course. For long-term gains in functioning, we found that economic disadvantage was not a salient consideration for individual participants nor the class climate. Although it has been shown that short-term gains in relational skills positively influence longer-term functioning individually and relationally (Adler Baeder et al., 2022), the previous study did test for moderation of this link by economic status to see whether low income attenuated the benefit of skills gains to enhanced functioning one year later. It may be that economic disadvantage captures less prior exposure to the content provided in CRE and it may be more challenging for a lower-resource CRE participant to translate newly learned skills into long-term improvements in functioning. It is also likely that other factors influence the process by which the immediate uptake of skills evolves into long-term improvements in functioning. Certainly, those with fewer economic

resources experience multiple related stressors that may not be addressed in CRE and likely also predict a person's report of their relationship quality a year after program participation.

It also appears that the influence of income was even more pronounced at the class level for immediate gains in self-care and conflict management skills, mirroring the pattern of influence found at the individual level. No class influence of average income level was detected in long-term functioning. In the aggregate, there may be more room for advancement in short-term skills for those classes experiencing more economic challenges (Adler-Baeder et al., 2010). For example, lower income classes may be less familiar with aspects of self-care as a group. When self-care information is promoted in CRE, the immediate internalization of that knowledge may demonstrate more collective room for advancement than in more affluent classes. There may be shared enthusiasm for the perspective that self-care is important and appreciation for the relevance to relationship health (Futris & Adler-Baeder, 2013; McGill et al., 2020). From Ecological System Theory, we understand that lower income classes may not have had the same exposures to healthy self-care experiences and resources (e.g., books, classes, retreats) compared to higher resourced couples from which to understand its inherent value prior to the class (Bronfenbrenner, 1979), but they may enthusiastically embrace the value of implementing these skills once the novel content is presented. Similarly, classes with lower baseline income may have had larger developmental potential to demonstrate gains in conflict management skills (Adler-Baeder et al., 2010) using the same reasoning that lower-income is related to less access to education and resources on life skills development and greater likelihood of experiences with stress and related conflict in lower socio-economic families of origin (Conger et al., 2010). The conflict management content in CRE may be less familiar to lower income participants prior to the class, but embraced by the class as a group, affecting large class-level gains in basic conflict

management skills. This novel exposure may result in greater aggregate class progress. Taken together, at both the individual and class levels, economic disadvantage was associated with greater gains in self-care and conflict management skills immediately following CRE for this sample of couples, but did not influence change in individual and relational functioning over the longer term.

Stress and CRE Program Gains

The relationships between perceived stress and short-term gains after exposure to CRE are complex. For both self-care and conflict management, the influence of the class stress level depended on the personal stress the individual was endorsing. Lower stressed participants were more susceptible to class influence and experienced less gains in self-care when they were in highly stressed classes. As structured, applying active pedagogy involves the sharing of thoughts and perspectives via discussions and activities (Bonwell & Eison, 1991). In activities such as these, cues about life stressors and receptivity towards self-care practices are expected to be shared among those in the class. Perhaps individual participants with lower personal stress, but in highly stressed classes, compare themselves to the situations of their peers. They may be less likely to appreciate their own need for self-care because their situation is not as dire as that of their classmates. Relatively speaking, they may conclude that self-care skills are more important for their highly stressed classmates, but not as necessary for themself. Further, the Theory of Planned Behavior (Ajzen, 1991), posits that the beliefs of others influence normative beliefs. Classmates in highly stressed classes may verbalize contradictory statements about their ability to focus on self-care practices and less intention to do so because of the stressors they are experiencing; perceptions that may influence beliefs about social norms (Ajzen, 1991).

Similar to the influence of stress on change in self-care, the relationship between class stress and change in conflict management depended on the participant's stress. Distinctly for conflict management, it was the highly stressed participant who was more influenced by the class climate. Highly stressed participants in highly stressed classes gained the least conflict management skills. Even though these stressed participants are likely to have a greater need for conflict management skills because couples who are experiencing more stress often experience more conflict (Randall & Bodenmann, 2009), the classroom conversations in a higher stressed class may diminish their confidence, reinforce unhealthy conflict patterns, or provide fewer healthy examples. Participants who experienced the most gains in conflict management were those that had the higher personal stress, but were situated in a class with lower average stress. Because of the link between stress and conflict (Randall & Bodenmann, 2009), there may be heightened interest from more stressed participants in developing conflict management skills. The relevance to their personal situation may make these stressed participants more receptive to the conflict management content and discussions (Knowles & Smith; 1984). Importantly, when these receptive participants are situated in a lower stressed class, verbalizations that endorse and model healthy conflict management may be more prominent and influential on the individual.

Similarly in a YRE study, Ma and colleagues (2014) found an interaction effect; the prosocial gains of the student depended on the context of the class. In our study, those higher initially stressed participants were less susceptible to the influence of the class regarding self-care skills, but more vulnerable to the influence of the class on change in conflict management. More similar to self-care, Ma and colleagues' study (2014) found students with more prosocial baselines were more susceptible to the influence of the class; students with stronger beneficial beliefs about warmth and trustworthiness were influenced in the direction of the class beliefs.

Interestingly, the Ma and colleagues study (2014) was similarly examining immediate change. It may be the interactions between personal and class risk are more salient for short-term changes immediately following CRE. Our study found no evidence of the interaction of individual level and class level on longer-term outcomes.

For long-term gains in functioning, the influence of perceived stress was more linear. At the individual level, participants experiencing higher stress demonstrated less gains in mental health functioning, relationship quality, and family harmony one year after exposure to CRE. Those who had more personal stress before CRE gained less from the course; more risk was associated with less benefit from CRE. It may be that overall stress influences the CRE experience and gains differently than other indicators of distress; the nature of this relationship is in direct contrast to the direction of influence of risk observed from economic disadvantages. It also is likely due to methodological issues. We modeled residual change in mental health and there are conceptual overlaps in items on the baseline measure of mental health and the measures of personal stress. This could explain less variance in mental health change uniquely explained by the stress measure.

Interestingly, class perceived stress only influenced long-term gains in one domain: mental health functioning. For both individual participants and for the entire class, higher stress was associated with less improvement in mental health functioning one year later. This seems logical given that stress research suggests that experiencing higher stress is associated with lower ratings of mental health (Bovier et al., 2004) and improvements in this area may require more than CRE program participation for higher-stress individuals. Class stress was not related to long-term gains in relationship quality, nor was it related to change in family harmony. It may be that class stress is more likely to impact the content of discussion related to self-care, conflict,

and mental health, but less likely to have long-term implications in domains related to interpersonal functioning.

Relationship Quality and CRE Program Gains

Of the elements of class climate, the most influential on program outcomes was class relationship quality. While the personal level also influenced outcomes, with those in higher functioning couples reporting greater benefit in conflict management skills and later family harmony, the evidence was particularly strong for the influence of the class average level of relationship quality. Couples in classes with other higher-functioning couples experienced greater gains in every domain we explored. Classes with higher relationship quality may collectively create an environment more open to the program content and invested in the relationship. They also may be better suited to endorse the value of self-care and recognize the important of self-care for the health of the relationship when these elements are discussed. Classmates with higher baseline relationship quality may also have practiced better self-care in the past and be better suited to speak on their experiences. Further, classes with higher overall relationship quality may have more affirmative conversations regarding the supportive role a partner can play in promoting healthy self-care practices. Classes with higher levels of relationship quality may also best support curriculum content that promotes healthy approaches to conflict management. That alignment may help participants better accept and internalize the knowledge and skills they are being taught as the endorsement of others in the class may reshape their normative beliefs about conflict (Ajzen, 1991).

Perhaps associated with the greater gains in self-care and that translation of that skill to improved functioning (Adler-Baeder et al., 2022), individuals in classes with higher baseline relationship quality experienced more beneficial change in mental health functioning one year

after CRE compared to classes with lower baseline relationship quality. Higher baseline class relationship quality also predicted more gains in relationship functioning one year later. In their adolescent YRE study, Morrison and colleagues (2018) similarly found that individuals in classes that aligned closer to the course content experienced more beneficial gains. As a primary outcome of CRE is improved relationship quality (Bradbury & Bodenmann, 2020; Futris & Adler-Baeder, 2013; Halford & Bodenmann, 2013; Hawkins et al., 2008), it makes intuitive sense that the class characteristic which appears to be the most germane for CRE is relationship quality itself. Further, the positive influence of the class with higher quality couple dynamics may similarly spillover during the class experiences into other aspects of family functioning as it does within the family dynamic (Bowen, 1975; Kopystynska et al., 2020). Taken together, for both short-term skill gains and long-term functioning gains, participants in classes endorsing higher quality relationship fare better.

Social learning theory (Bandura, 1977) highlights the influential role of observed learning for the individual student. Incorporating an emphasis on interactive learning championed in active pedagogy (Bonwell & Eison, 1991), participants in CRE are exposed to cues about how the class perceives the material being taught and their personal experiences. CRE participants have indicated that an important benefit of the class experience is the opportunity to discuss problems and strategies with peers (Randles, 2014). It may be that the advice given by those peers from higher relationship quality class is derived from their previous personal exposures to healthier relationships dynamics which allows the class to offer more prosocial advice (Bronfenbrenner, 1979). Wheeler (2018) suggested that the benefit of the group process may be less about endorsement of new skills and more about identifying with other couples and normalizing challenges. It may be that classes with higher relationship quality help instill more

of a sense of hope and confidence (Wheeler, 2018). In sum, because higher class relationship quality was associated with improved gains across every CRE domain we examined, class relationship quality appears to be a critical consideration both for future CRE implementation research and intervention practice.

Types and Levels of Distress

Williamson and colleagues (2015) suggested that the presence of risk can moderate the effectiveness of a CRE intervention in opposing ways. One way is that participants who start an intervention with higher distress have the most to gain from the intervention; this type of risk represents room for change and leads to larger benefits from CRE. The opposite way risk can influence an intervention's effect is that the nature of the risk might limit the gains participants are able to achieve. As such, it may not be the presence of risk, but the type of risk that determines the manner of impact (Williams et al., 2015), as well as the type of outcome. For income, distress represented by economic disadvantage was beneficial for gains from CRE in this study; as we have seen in multiple studies, those who were more economically disadvantaged experienced greater benefit from CRE exposure (Adler-Baeder et al., 2010; Amato, 2014; Carlson et al., 2014). It seems that when risk is conceptualized as economic disadvantage, it may capture previous limited access to resources and greater potential for change when access is improved. Lower income may be related to room for progress while other vulnerabilities such as stress may capture the individual's readiness or capacity for change (Britt et al., 2016). The influence of more psychological distress, represented by perceived stress, on long-term functioning was detrimental in this study; individuals with more personal stress and those with classes with higher average stress generally gained less from CRE. As stress captures how overloaded the participant is feeling (Cohen et al., 1994); greater individual stress and

exposure to others who are also higher stress may negatively impact the ability and openness of a participant to make beneficial gains from a psychoeducational course (Britt et al., 2016; Cozolino & Sprokay, 2006). In other words, it may be that economic disadvantage represents less previous exposure to skills-training and increased stress represents decreased capacity to acquire self-care and relational skills and translate them into long-term functioning.

We also found that more baseline personal relational distress endorsed by those with lower relationship quality and those in classes with other relationally stressed couples experienced less benefit from CRE in the short and long-term. The finding for individual relationship quality is in contrast to some previous research that has found more relationally distressed couples benefit more from CRE (e.g., McGill et al., 2016; Quirk et al., 2014; Williamson et al., 2015); however, in our study the stronger predictor for greater gains in CRE across all outcomes in our study was higher class average of relationship quality. This demonstrated the value of a context of higher relationship quality, despite individual level of relationship quality.

We also found that when significant influence was present, the direction of influence differed by type of distress, but generally not by the level (individual or class). Apart from the noted exception related to the interactions between individual and class level perceived-stress on short-term skill gains, all of our paired individual and class-level risk types influenced participants in the same direction regardless of the level. Both individual-level and class-level economic advantage predicted less beneficial gains, both higher individual level and lower class perceived stress predicted less beneficial gains, and both lower individual and higher class-level relationship quality predicted less beneficial gains. In sum, the main focus of this study was to consider a previously unexplored source of influence for adult CRE implementation - the class

climate. We demonstrated an effect from classmate characteristics that influenced participants above and beyond the presence of their personal baseline of the same type.

Implementation Implications

First, we were able to demonstrate that participants in shared class environments had associated gains attributable to that class experience. On its own, this finding suggests that the class climate is a germane consideration during CRE implementation. Randles (2014) and Wheeler and colleagues (2018) specifically suggested that exposure to classmates during CRE is an important aspect of the CRE experience. This study provides some empirical evidence to support their assertion. The recognition of the influence of classmates on individuals has practical implementation implications. For example, knowing the average socioeconomic status of the class may help the facilitator adjust the amount of time spent on specific content delivery and skill building. In a lower income class, the facilitator may decrease the amount of time spent discussing previous experiences with these skills and soliciting feedback about their value. Instead, the facilitator may tailor the class experience by spending more time on skill building and providing examples of how the application of skills translates into improved relationships. The nuanced relationships between class and individual baseline stress may be particularly germane for curriculum designers. Randles (2014) specifically suggested program developers add content to CRE that encourages dialogue about stressors, serves to normalize external stress, and helps provide healthy coping alternatives. As such, there may be a need for more optional content in CRE curricula. For example, additional content to facilitate discussions regarding stress mitigation and whether factors such as current stress and comparison to others might influence participant's openness to new skills. Further, facilitators might benefit from an

understanding of their class's baseline stress level in order to select from additional content and be more aware of barriers that may be impairing the class's capacity for change.

On the whole, baseline class relationship quality may be the best tool for a facilitator's overall assessment of the class prior to implementation. Relationship quality may represent the baseline level of relationship knowledge, skills, and attitudes that fellow CRE participants will bring to the class experience. As class-level relationship quality positively influences gains in every domain we examined, it may serve as the best indicator for a CRE facilitator to determine the class climate in order to inform programmatic decisions and best practice. As a best practice, a facilitator may want to assess the class's baseline relationship quality prior to implementation. If the CRE program is part of a research study, a practical solution might be a report given to facilitators pre-program with the baseline mean scores and a class profile. This approach would not violate IRB protocols which limit making individual responses and scores available. Information on group data can be shared. If the CRE class is not involved in a research study, the facilitator might conduct a quick, anonymous survey or poll at the very beginning of the course that captures participants' relationship quality, along with stress level, and demographics, if possible. All three of the classmate characteristics we examined have implications for program outcomes, but the inclusion of multiple items on a pre-program survey may not be feasible. If so, it may be that only relationship quality is assessed as it is the most salient to the program experience.

By gathering baseline information, the facilitator can have an informed perspective of the class's baseline state that may bolster or dampen uptake of the designed course content. With that knowledge, the facilitator can best cater the course to fit the needs of each class. For a class with a higher baseline relationship quality, the facilitator may be more purposeful in drawing out

the perspectives and insights from the classmates. In classes with lower baseline relationship quality, the course and delivery may need to be modified to fit the needs of the class. For example, class discussions that are likely to expose classmates to comments that might contradict or diminish the course content may need to be replaced with alternative learning approaches such as guided skill-building activities, personal introspection journaling, or scripted role plays. Alternatively, if facilitators have the ability to know the baseline level of the participant's relationship quality prior to implementation and have access to a very large pool of participants, the facilitator might use that information to assign participants to classes in order to have more equitable, balanced classes, trying to ensure that not any one class is predominantly couples with lower relationship quality. Even so, class assignment may not be a practical approach due to the need for a large number of participants interested in taking CRE around the same time.

As an alternative strategy, the facilitator who is recruiting for a single class might consider enlisting the help of CRE "champion couples" to join the class. Heath care interventions have long leveraged peers to promote healthy norms and positively influence behaviors (Lavoie et al., 2013; Simoni et al., 2011). Similarly for CRE, champion couples could serve as peers to higher risk classes; peers who have positive and relatable examples of their relationship experiences to help enrich class discussions in higher risk classes and influence perceptions of healthy relationship norms.

Limitations

This study is the first to explore the potential influence of an aspect of class climate, classmate characteristics, on gains from CRE and offers several novel contributions to the study of CRE. Even so, there are limitations worth noting. A commonly cited limitation in CRE research is that all data is single reporter and self-report. Although self-report data is considered

less objective, it is important to note that for many dimensions of human development, it may be individual's perception of a situation rather than the situation itself that best captures the intended construct and its consequences (Whiteneck, 2010). For example, perceived stress may be a more salient predictor of risk associated with stress than exposure to specific stress events (Mihăilă, 2015). Similarly, we can assume that the perception of relationship quality is more salient and influential than observations and outside judgements of relationship quality.

In addition, we purposefully included only those participants that had attended four or more of the six CRE sessions. We established this criterion due to the exploratory nature of the research and the focus on class-level influence. We assumed participants who did not experience the class, or had less exposure to the class, may be less likely to be influenced by that class and inclusion of their data could dilute class-level effects. Our selection of four out of six classes was not based on empirical evidence or precedence. It is unknown whether there is a particular cut point at which class-level influence becomes germane and we used a reasoned expectation that four sessions or more could be sufficient exposure to the class environment. As such, this study cannot determine if a class-level influence would be observed among participants who had attended fewer classes. We also assumed that more class exposure would facilitate more class engagement. However, the level of engagement in classes is likely to vary and may not be related to the number of sessions attended. Classmates may have been present at all six sessions yet remain a quiet class with minimal participation. Furthermore, there may be important subgroup differences for participants who attend more sessions of a course compared to those that do not. It may not be the amount of class exposure, but rather characteristics of more engaged participants that allowed for class-level influence. Implementation researchers may want to examine the relationship between the amount of exposure to classmates, participant

engagement, and the degree of class-level influence. Lastly, although we explore change across several domains, we do not explore the specific mechanisms and processes that generate the change.

Future Directions and Conclusions

Implementation science is focused on understanding factors that affect a program experience and factors that influence the program's effectiveness demonstrated through participants' change. Owen and colleagues (2013) called for more research that explores socially driven mechanisms of change. Although this study does not specifically assess mechanisms of change, it does explore elements of the class experience and contextual factors that potentially influence the change process. This study follows two studies of youth relationship education (Ma et al., 2014; Morrison et al., 2018) and was the first to consider classmate characteristics as an influential aspect of gains from an evidence-based, adult-focused CRE program. Interestingly, it appears some class-level distress (e.g., economic disadvantage) may enhance capacity for progress, yet other class-level distress (higher stress, lower relationship quality) may impede positive change. It is important to work towards advancing our understanding on how these factors influence the class experience and intervention effectiveness because they are often prevalent among CRE participants.

A next step towards increasing our understanding of the mechanisms of change that occur during a CRE intervention may be a closer examination of classroom dynamics. There may be additional factors in the class climate that directly influence or interact with characteristics of participants such as facilitator characteristics and group cohesion (Owens, 2013). For example, researchers may want to consider the influence of facilitator quality on class climate if there is variation available in their sample. Wheeler and colleagues (2018) suggested the group process

needs to be better understood as a mechanism that facilitates CRE change. Exploring the specific mechanisms of change may help explicate the relationships between different types of class contexts and their respective influence on gains from an intervention. Through observations and coding of class discussions, researchers may be able to capture the class experience and identify how individuals and couples may be influenced by others in the class.

There are many additional classmate characteristics that have the potential to influence individual gains from CRE that have yet to be considered. A next step for CRE implementation researchers may be to explore additional aspects of classmates and determine which factors are the most salient at the individual, couple, and class levels. There may be additional indirect relationships worth exploration. For example, although we include curricula as a control variable and it was not statistically significant in any of our models for our two curricula, the influence of the classmate characteristics on gains could differ by other curricula. In this exploratory study, we explored residual change across five selected CRE variables of interest. Future considerations for CRE implementation may be to explore whether there is a class-level influence on additional outcomes such as relationship stability. Lastly, implementation researchers may also want to explore whether class climate is an important consideration in adult psychoeducational interventions extending beyond CRE. There may be important aspects of class climate that influence whether and how adults learn across different intervention topics and approaches.

Although we employed multilevel modeling in order to best examine class-level predictors, we employed autoregressive modeling to explore residual change from pretest to immediate posttest for self-care and conflict management skills; and residual change from pretest to one year follow up for mental health, relationship quality, and family harmony. In so doing,

we only focused on the baseline predictors of individual- and class-level factors. However, participants and classes are likely to differ in their patterns of growth over the time as they experience the course and these growth patterns may not be linear. Baseline values may not best capture variation in individual and class trajectories across and beyond the CRE exposure. Although baseline values may be more pragmatic to inform facilitator best practice, longitudinal modeling can provide a more nuanced understanding of the influence of contextual factors across time. A next step for future implementation scientist is to explore whether the class growth throughout the CRE experience varies and what factors influence that growth through the use of growth modeling. Growth modeling may demonstrate more subtle shifts in class influence over time. Even so, this first exploration of the influence of classmate characteristics highlights the importance of considering how others in the class shape the CRE experience and provides practical recommendations for facilitators. Taken as a whole, efficacy studies emphasize the experience for the average participant and focus more on establishing program impact; implementation studies recognize diversity of experiences in the CRE class and seek to understand variations. Both types of studies have important value.

In sum, our study demonstrated the importance of considering who else is in a class when facilitating one type of adult psychosocial, community-based education - one that is focused on the couple's relationship. By considering the influence of the class climate, we identified novel and important considerations for CRE research and implementation. We demonstrated that individual change is not only influenced by personal characteristics, but by characteristics of those in the shared class environment. Our study explored the influence of three classmate characteristics immediately prior to CRE exposure: their socioeconomic status, baseline level of stress, and baseline relationship quality across domains associated with gains from CRE (Adler-

Baeder et al., 2022). Across all five outcomes (change in self-care, conflict management, mental health, relationship quality, and family harmony), we found class climate was a salient aspect of individual-level change for better and for worse. We found that the influence of individual and class-level distress on gains from CRE differed by the type, but generally not the level. Further, we highlighted that in our study of a diverse group of CRE participants, the baseline relationship quality of the class was the most potent class-level influence on multiple target areas of change. These findings serve to stimulate additional consideration of class context in community-based education and potentially lead to enhanced effectiveness in promoting quality and stability of couple and family relationships.

Table 1. Independent Variables: Correlations and Descriptive Statistics

		1 Individual Income	2 Individual Perceived Stress	3 Individual Relationship Quality	4 Class Income	5 Class Perceived Stress	6 Class Relationship Quality	Descriptive Statistics
1.	Individual Income							4.72 (1.64)
2.	Individual Perceived Stress	.122**						26.44 (6.57)
3.	Individual Relationship Quality	.069	-.420**					16.95 (3.79)
4.	Class Income	.583*	-.058**	.085*				4.73 (0.96)
5.	Class Perceived Stress	-.077*	-.463**	.314**	-.126**			26.44 (3.04)
6.	Class Relationship Quality	.067	-.308**	.463**	.107**	-.665**		53.61 (5.42)
	Gender	-.033	.138**	-.046	-.017	.033	-.027	0.51 (.50)
	Age	.261**	-.103**	-.047	.019	-.084*	-.020	39.05 (12.75)
CONTROLS	African American	-.161**	.060	-.158	-.201**	.185**	-.228**	0.32 (0.47)
	Minority Race	-.023	-.032	.012	.022	-.016	.019	0.06 (0.24)
	Time Together	.287**	-.085*	-.009	.107**	-.089*	-.051	11.57 (10.57)
	Education	.399**	-.119**	.122**	.388**	-.146**	.104**	5.65 (2.06)
	Curricula	-.072*	.025	-.053	-.126**	.057	-.067	0.48 (.50)

Table 2. A Taxonomy of Fitted Multilevel Models Investigating Change in Self-Care skills.

Parameter	Model A: Auto-Regressive Model		Model B: Controls Model		Model C: Individual Level Predictors Model		Model D: Class-Level Predictors		Model E: Cross-Level Interactions		**Model F: Significant Cross-Level Interaction**	
FIXED EFFECTS												
Level I Predictors												
Intercept (β_0)	38.077***	(0.372)	37.775***	(0.513)	37.760***	(0.517)	38.054***	(0.356)	38.043***	(0.356)	**38.051*** **	**(0.356)**
Pretest Self-Care (β_1)	0.635***	(0.029)	0.651 ***	(0.030)	0.575***	(0.035)	0.579***	(0.035)	0.578 ***	(0.034)	**0.578*** **	**(0.034)**
Female (β_2)			0.458	(0.356)	0.628	(0.347)	0.630	(0.347)	0.592	(0.346)	**0.560**	**(0.346)**
Age (β_3)			-0.032	(0.024)	-0.016	(0.023)	-0.013	(0.023)	-0.010	(0.023)	**-0.012**	**(0.023)**
Race												
African American(β_4)			0.034	(0.540)	-0.216	(0.527)	-0.219	(0.525)	-0.114	(0.522)	**-0.222**	**(0.520)**
Other Minority (β_5)			-1.251	(0.840)	-1.217	(0.811)	-1.236	(0.810)	-1.259	(0.801)	**-1.195**	**(0.804)**
Time Together (β_6)			0.002	(0.027)	0.001	(0.026)	-0.001	(0.026)	-0.005	(0.026)	**-0.003**	**(0.026)**
Education (β_7)			-0.038	(0.115)	0.013	(0.114)	0.010	(0.114)	0.018	(0.113)	**0.021**	**(0.113)**
Individual Income (β_8)					-0.321*	(0.153)	-0.323*	(0.153)	-0.313*	(0.152)	**-0.338***	**(0.152)**
Individual Perceived Stress (β_9)					-0.144***	(0.041)	-0.141***	(0.041)	-0.145***	(0.041)	**-0.148*** **	**(0.040)**
Individual Rel Quality (β_{10})					0.072	(0.050)	0.073	(0.050)	0.102	(0.052)	**0.076**	**(0.050)**
Level III Predictors												
Curriculum (γ_{001})			0.603	(0.736)	0.674	(0.741)	0.244	(0.518)	0.255	(0.518)	**0.245**	**(0.518)**
Class Income(γ_{002})							-0.996***	(0.259)	-1.008***	(0.258)	**-0.996*** **	**(0.258)**
Class Income* Individual Income (γ_{802})									0.213	(0.168)		
Class Perceived Stress (γ_{003})							-0.553***	(0.106)	-0.552***	(0.106)	**-0.550*** **	**(0.106)**
Class Perceived Stress* Individual Perceived Stress(γ_{909})									0.034**	(0. 012)	**0.037** **	**(0.012)**
Class Relationship Quality (γ_{004})							0.148*	(0.059)	0.150*	(0.059)	**0.149***	**(0.059)**
Class Rel Quality* Individual Rel Quality (γ_{1004})									0.014	(0.009)		
RANDOM EFFECTS												
r_{ijk}	20.936***	(1.578)	20.905***	(1.583)	17.725***	(1.516)	17.705**	(1.504)	17.676***	(1.493)	**17.676** **	**(1.492)**
μ_{0jk}	2.876*	(1.396)	2.258	(1.388)	1.982	(1.258)	1.965	(1.242)	1.610	(1.213)	**1.769**	**(1.222)**
μ_{90k}					0.083**	(0.083)	0.084*	(0.026)	0.079***	(0.025)	**0.078*** **	**(0.025)**
μ_{00k}	8.123***	(1.882)	8.132***	(1.867)	8.628***	(1.895)	2.533**	(0.879)	2.627**	(0.882)	**2.589** **	**(0.880)**
-2 LL (df)	4557.9(4)		4549.7 (11)		4514.1 (15)		4451.5 (18)		4437.6 (21)		**4441.4 (19)**	
Δ -2 LL (df)			7.2(7)		35.6***(4)		62.6***(3)		13.9*** (3)		**10.1***(1)**	
Comparison Model			Model A		Model B		Model C		Model D		**Model D**	
AIC	4567.9		4573.7		4546.2		4489.5		4481.6		**4481.4**	
BIC	4590.9		4629.7		4619.9		4577.1		4583.1		**4573.6**	

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 3. A Taxonomy of Fitted Multilevel Models Investigating Change in Conflict Management skills.

Parameter	Model G: Auto-Regressive Model		Model H: Controls Model		Model I: Significant Individual Level Predictors Model		Model J: All Class-Level Predictors		Model K: All Cross-Level Interactions		**Model L: Final Model**	
FIXED EFFECTS												
Level I Predictors												
Intercept (β_0)	42.100***	(0.324)	41.807***	(0.447)	41.818***	(0.448)	41.965***	(0.309)	41.963***	(0.308)	**41.963*** **	**(0.819)**
Pretest Conflict Management(β_1)	0.516***	(0.029)	0.516***	(0.030)	0.436***	(0.034)	0.438***	(0.034)	0.433***	(0.033)	**0.431*** **	**(0.032)**
Female (β_2)			-0.104	(0.340)	-0.050	(0.341)	-0.041	(0.340)	-0.151	(0.340)	**-0.121**	**(0.338)**
Age (β_3)			0.002	(0.024)	0.014	(0.024)	0.015	(0.024)	0.017	(0.024)	**0.017**	**(0.019)**
Race												
African American(β_4)			-0.088	(0.549)	-0.220	(0.537)	-0.205	(0.536)	-0.251	(0.536)	**-0.217**	**(0.539)**
Other Minority (β_5)			-0.237	(0.832)	-0.319	(0.815)	-0.305	(0.815)	-0.160	(0.814)	**-0.223**	**(0.817)**
Time Together (β_6)			-0.006	(0.028)	-0.005	(0.027)	-0.007	(0.027)	-0.010	(0.027)	**-0.009**	**(0.025)**
Education (β_7)			-0.096	(0.113)	-0.059	(0.114)	-0.054	(0.114)	-0.044	(0.114)	**-0.501**	**(0.114)**
Individual Income (β_8)					-0.328*	(0.158)	-0.311*	(0.158)	-0.330*	(0.158)	**-0.332***	**(0.157)**
Individual Perceived Stress (β_9)					-0.074*	(0.033)	-0.072*	(0.033)	-0.090**	(0.033)	**-0.087** **	**(0.033)**
Individual Rel Quality (β_{10})					0.188***	(0.053)	0.189***	(0.053)	0.167**	(0.053)	**0.196*** **	**(0.054)**
Level III Predictors												
Curriculum (γ_{001})			0.617	(0.643)	0.626	(0.643)	0.335	(0.449)	0.337	(0.455)	**0.334**	**(0.517)**
Class Income(γ_{002})							-0.903***	(0.230)	-0.912***	(0.232)	**-0.911*** **	**(0.226)**
Class Income* Individual Income (γ_{802})									-0.025	(0.173)		
Class Perceived Stress (γ_{003})							-0.104	(0.094)	-0.104	(0.094)	**-0.104**	**(0.094)**
Class Perceived Stress* Individual Perceived Stress(γ_{909})									0.039***	(0.010)	**0.035*** **	
Class Relationship Quality (γ_{004})							0.307***	(0.053)	0.309***	(0.041)	**0.309*** **	**(0.040)**
Class Rel Quality* Individual Rel Quality (γ_{1004})									-0.015	(0.009)		
RANDOM EFFECTS												
r_{ijk}	18.387***	(1.441)	18.428***	(1.453)	18.375***	(1.455)	18.326***	(1.443)	17.986**	(1.418)	**18.131*** **	**(1.427)**
μ_{0jk}	4.958***	(1.499)	4.826***	(1.509)	3.809**	(1.443)	3.884**	(1.423)	3.724**	(1.393)	**3.636** **	**(1.392)**
μ_{00k}	5.207***	(1.496)	5.179***	(1.477)	5.429***	(1.473)	1.042	(0.717))	1.092	(0.126)	**1.108**	**(0.716)**
-2 LL (df)	4505.7(4)		4503.7 (11)		4479.6 (14)		4420.8 (17)		4405.8(20)		**4408.7 (18)**	
Δ -2 LL (df)			2.0(7)		24.1***(3)		58.8*** (3)		57.7*** (3)		**12.1***(1)**	
Comparison Model			Model G		Model H		Model I		Model I		**Model J**	
AIC	4515.7		4527.7		4509.6		4456.8		4547.8		**4446.7**	
BIC	4538.8		4583.0		4578.8		4539.7		4544.6		**4534.2**	

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 4. A Taxonomy of Fitted Multilevel Models Investigating Change in Mental Health functioning.

Parameter	Model M: Auto-Regressive Model		Model N: Controls Model		Model O: Significant Individual Level Predictors Model		Model P: All Class-Level Predictors		Model Q: Significant Class-Level Predictors		**Model R: Final Model**	
FIXED EFFECTS												
Level I Predictors												
Intercept (β_0)	44.467***	(0.429)	44.709***	(0.593)	44.726***	(0.606)	44.778***	(0.483)	44.777***	(0.484)	**44.730*** **	**(0.479)**
Pretest Mental Health (β_1)	0.422***	(0.422)	0.416***	(0.034)	0.295***	(0.043)	0.297***	(0.043)	0.298***	(0.043)	**0.296*** **	**(0.043)**
Female (β_2)			-0.051	(0.575)	0.147	(0.559)	0.171	(0.559)	0.170	(0.561)	**0.171**	**(0.559)**
Age (β_3)			0.010	(0.041)	0.015	(0.041)	0.019	(0.041)	0.023	(0.041)	**0.017**	**(0.041)**
Race												
African American(β_4)			0.442	(0.939)	0.632	(0.932)	0.574	(0.933)	0.801	(0.934)	**0.572**	**(0.935)**
Other Minority (β_5)			1.020	(1.417)	0.911	(1.387)	0.841	(1.389)	0.880	(1.385)	**0.852**	**(1.391)**
Time Together (β_6)			0.024	(0.047)	0.025	(0.047)	0.021	(0.047)	0.015	(0.047)	**0.023**	**(0.047)**
Education (β_7)			0.216	(0.191)	0.132	(0.193)	0.125	(0.193)	0.141	(0.193)	**0.126**	**(0.193)**
Individual Income (β_8)					-0.021	(0.271)	-0.023	(0.271)	0.037	(0.272)	**-0.020**	**(0.272)**
Individual Perceived Stress (β_9)					-0.269***	(0.073)	-0.265***	(0.072)	-0.026***	(0.072)	**-0.266*** **	**(0.072)**
Individual Rel Quality (β_{10})					0.078	(0.086)	0.075	(0.086)	0.083	(0.091)	**0.074**	**(0.087)**
Level III Predictors												
Curriculum (γ_{001})			-0.505	(0.855)	-0.478	(0.815)	-0.569	(0.703)	-0.548	(0.705)	**-0.471**	**(0.695)**
Class Income(γ_{002})							-0.403	(0.368)	-0.436	(0.232)		
Class Income*									0.584	(0.303)		
Individual Income (γ_{802})												
Class Perceived Stress (γ_{003})							-0.407**	(0.150)	-0.409**	(0.150)	**-0.395** **	**(0.149)**
Class Perceived Stress*									0.016	(0.019)		
Individual Perceived Stress(γ_{909})												
Class Relationship Quality (γ_{004})							0.217*	(0.084)	0.219*	(0.084)	**0.213***	**(0.084)**
Class Rel Quality*									0.001	(0.016)		
Individual Rel Quality (γ_{1004})												
RANDOM EFFECTS												
r_{ijk}	53.188***	(4.059)	52.819***	(4.047)	45.567***	(4.230)	45.464***	(4.156)	45.763***	(4.163)	**45.456*** **	**(4.157)**
μ_{0jk}	14.470***	(4.105)	14.579***	(4.127)	14.457***	(4.087)	14.838***	(4.068)	14.106***	(4.035)	**15.009*** **	**(4.095)**
μ_{90k}					0.163*	(0.079)	0.162*	(0.077)	0.155*	(0.074)	**0.161***	**(0.077)**
μ_{00k}	5.454*	(2.608)	5.418*	(2.631)	6.421***	(2.773)	1.054	(1.760)	1.219	(1.770)	**0.953**	**(1.774)**
-2 LL (df)	5254.8(4)		5251.5(11)		5227.7 (15)		5195.1 (18)		5190.8 (21)		**5196.3 (17)**	
Δ -2 LL (df)			4.6(7)		23.8***(4)		32.6*** (3)		4.3(3)		**31.4***(2)**	
Comparison Model			Model M		Model N		Model O		Model P		**Model O**	
AIC	5264.8		5275.5		5259.7		4233.1		5234.8		**5232.3**	
BIC	5287.9		5330.8		5333.5		4320.7		5336.2		**5315.3**	

~$p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Table 5. A Taxonomy of Fitted Multilevel Models Investigating Change in Relationship Quality.

Parameter	Model S: Auto-Regressive Model		Model T: Controls Model		Model U: Significant Individual Level Predictors Model		Model V: All Class-Level Predictors		Model W: Significant Class-Level Predictors		**Model X: Final Model**	
FIXED EFFECTS												
Level I Predictors												
Intercept (β_0)	55.201***	(0.534)	55.066***	(0.740)	55.098***	(0.739)	55.331***	(0.482)	55.327***	(0.482)	**55.331*** **	**(0.485)**
Pretest Relationship Quality (β_1)	0.503***	(0.031)	0.502***	(0.031)	0.464***	(0.033)	0.460***	(0.033)	0.457***	(0.035)	**0.460*** **	**(0.033)**
Female (β_2)			0.225	(0.522)	0.451	(0.523)	0.462	(0.523)	0.397	(0.522)	**0.461**	**(0.523)**
Age (β_3)			-0.078*|	(0.040)	-0.068	(0.041)	-0.062	(0.041)	-0.060	(0.041)	**-0.062**	**(0.041)**
Race												
African American(β_4)			-1.043	(0.906)	-1.324	(0.906)	-1.372	(0.914)	-1.398	(0.921)	**-1.368**	**(0.913)**
Other Minority (β_5)			0.217	(1.347)	-0.130	(1.324)	-0.143	(1.347)	-0.068	(1.347)	**-0.139**	**(1.347)**
Time Together (β_6)			0.952*	(0.046)	0.103*	(0.046)	0.098*	(0.047)	0.097*	(0.047)	**0.098***	**(0.047)**
Education (β_7)			-0.094	(0.181)	-0.053	(0.184)	-0.063	(0.185)	-0.064	(0.185)	**-0.063**	**(0.185)**
Individual Income (β_8)					-0.464	(0.266)	-0.474	(0.269)	-0.494	(0.271)	**-0.472**	**(0.268)**
Individual Perceived Stress (β_9)					-0.172***	(0.052)	-0.170***	(0.052)	-0.182***	(0.052)	**-0.170*** **	**(0.052)**
Level III Predictors												
Curriculum (γ_{001})			0.241	(1.065)	0.206	(1.063)	-0.109	(0.702)	-0.106	(0.701)	**-0.108**	**(0.702)**
Class Income(γ_{002})							0.013	(0.367)	0.008	(0.368)		
Class Income* Individual Income (γ_{802})									-0.045	(0.304)		
Class Perceived Stress (γ_{003})							-0.090	(0.150)	-0.092	(0.150)		
Class Perceived Stress* Individual Perceived Stress(γ_{909})									0.030	(0.017)		
Class Relationship Quality (γ_{004})							0.569***	(0.084)	0.571***	(0.084)	**0.603*** **	**(0.064)**
Class Rel Quality* Individual Rel Quality (γ_{1004})									-0.001	(0.006)		
RANDOM EFFECTS												
r_{ijk}	43.679***	(3.361)	43.515***	(3.353)	42.565***	(3.279)	42.484***	(3.266)	41.886**	(3.232)	**42.475*** **	**(3.265)**
μ_{0jk}	19.034***	(3.958)	18.147***	(3.894)	17.995***	(3.821)	19.243***	(3.922)	19.802***	(3.954)	**19.150*** **	**(3.912)**
μ_{00k}	13.610***	(3.965)	13.950***	(3.983)	14.029***	(3.974)	0.976	(1.886)	0.926	(1.886)	**1.140**	**(1.899)**
-2 LL (df)	5217.5(4)		5209.3 (11)		5196.3 (13)		5138.8 (16)		5135.7 (19)		**5139.2(14)**	
Δ -2 LL (df)			8.2(7)		13.0**(3)		57.5*** (3)		3.1(3)		**57.1***(1)**	
Comparison Model			Model S		Model T		Model U		Model V		**Model U**	
AIC	5227.5		5223.3		5224.3		5172.8		5175.7		**5169.2**	
BIC	5250.5		5288.6		5288.9		5251.2		5267.9		**5238.3**	

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 6. A Taxonomy of Fitted Multilevel Models Investigating Change in Family Harmony.

Parameter	Model Y: Auto-Regressive Model		Model Z: Controls Model		Model a: Significant Individual Level Predictors Model		Model b: Class-Level Predictors		Model c: Cross-Level Interactions		**Model d: Final Model**	
FIXED EFFECTS												
Level I Predictors												
Intercept (β_0)	16.260***	(0.157)	16.165***	(0.219)	16.165***	(0.220)	16.252***	(0.152)	16.251***	(0.152)	**16.255*** **	**(0.152)**
Pretest Family Harmony (β_1)	0.419***	(0.031)	0.428**	(0.031)	0.276***	(0.042)	0.275***	(0.042)	0.275***	(0.042)	**0.275*** **	**(0.041)**
Female (β_2)			0.321	(0.172)	0.477**	(0.171)	0.477**	(0.013)	0.467**	(0.171)	**0.477** **	**(0.171)**
Age (β_3)			-0.016	(0.013)	-0.011	(0.013)	-0.009	(0.171)	-0.008	(0.012)	**-0.008**	**(0.013)**
Race												
African American(β_4)			-0.308	(0.296)	-0.413	(0.287)	-0.424	(0.287)	-0.403	(0.289)	**-0.423**	**(0.287)**
Other Minority (β_5)			0.683	(0.442)	0.492	(0.428)	0.496	(0.429)	0.516	(0.429)	**0.496**	**(0.429)**
Time Together (β_6)			0.024	(0.015)	0.024	(0.015)	0.022	(0.015)	0.021	(0.015)	**0.022**	**(0.015)**
Education (β_7)			-0.078	(0.060)	-0.049	(0.060)	-0.052	(0.060)	-0.050	(0.060)	**-0.052**	**(0.060)**
Individual Income (β_8)					-0.141	(0.084)	-0.141	(0.084)	-0.138	(0.061)	**-0.142**	**(0.084)**
Individual Perceived Stress (β_9)					-0.080***	(0.017)	-0.078***	(0.017)	-0.080***	(0.017)	**-0.078*** **	**(0.017)**
Individual Rel Quality (β_{10})					0.123***	(0.034)	0.122***	(0.034)	0.122***	(0.035)	**0.122*** **	**(0.034)**
Level III Predictors												
Curriculum (γ_{001})			0.187	(0.315)	0.196	(0.317)	0.076	(0.221)	0.078	(0.221)	**0.069**	**(0.220)**
Class Income(γ_{002})							0.029	(0.115)	0.026	(0.115)		
Class Income*									0.060	(0.094)		
Individual Income (γ_{802})												
Class Perceived Stress (γ_{003})							-0.012	(0.047)	-0.012	(0.047)		
Class Perceived Stress*									0.006	(0.005)		
Individual Perceived Stress(γ_{909})												
Class Relationship Quality (γ_{004})							0.171***	(0.027)	0.171***	(0.026)	**0.176*** **	**(0.040)**
Class Rel Quality*									-0.000	(0.005)		
Individual Rel Quality (γ_{1004})												
RANDOM EFFECTS												
r_{ijk}	4.795***	(0.377)	4.739***	(0.374)	4.573***	(0.359)	4.597***	(0.362)	4.587***	(0.349)	**4.597*** **	**(0.349)**
μ_{0jk}	1.978***	(0.439)	1.810***	(0.436)	1.566**	(0.392)	1.581**	(0.394)	1.576***	(0.367)	**1.581*** **	**(0.368)**
μ_{00k}	0.990***	(1.496)	1.039**	(0.341)	1.149***	(0.348)	0.119	(0.169)	0.120	(0.152)	**0.121**	**(0.153)**
-2 LL (df)	3551.6(4)		3538.6 (11)		3497.8 (14)		3444.8 (17)		3443.1 (20)		**3444.9 (15)**	
Δ -2 LL (df)			13.0(7)		40.8***(3)		53.0*** (3)		1.7(3)		**52.9***(1)**	
Comparison Model			Model Y		Model Z		Model a		Model b		**Model a**	
AIC	3561.6		3562.6		3527.8		3480.8		3485.1		**3476.9**	
BIC	3584.7		3617.9		3596.9		3563.7		3581.9		**3550.7**	

~$p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

References

Adler-Baeder, F., Bradford, A., Skuban, E., Lucier-Greer, M., Ketring, S., & Smith, T. (2010). Demographic predictors of relationship and marriage education participants' pre-and post-program relational and individual functioning. *Journal of Couple & Relationship Therapy*, *9*(2), 113-132. https://doi.org/10.1080/15332691003694885

Adler-Baeder, F., Calligas, A., Skuban, E., Keiley, M., Ketring, S., & Smith, T. (2013). Linking changes in couple functioning and parenting among couple relationship education participants. *Family Relations*, *62*(2), 284-297. https://doi.org/10.1111/fare.12006

Adler-Baeder, F., Futris, T., McGill, J., Richardson, E., & Dede Yildirim, E. (2021). Validating the Couple Relationship Skills Inventory. *Family Relations*. *71*(1), 279-306. https://doi.org/10.1111/fare.12590

Adler-Baeder. F., Garneau, C., Vaughn, B., McGill, J., Harcourt, K. T., Ketring, S., & Smith, T. (2018). The effects of mother participation in Relationship Education on coparenting, parenting, and child social competence: Modeling spillover effects for low-income minority preschool children. *Family Process*, *57*(1), 113–130. https://doi-org/10.1111/famp.12267

Adler-Baeder, F. McGill, J., Yildirim, E.D., Gregson, K., Cooper, E., Burke, L., Finnegan, V., & Jackel, R. (2022). Simultaneous Randomized Control Trials of the One-Year Efficacy of Two Couple Relationship Education Programs: ELEVATE and Couples Connecting Mindfully. *Family Process*. https://doi.org/10.1111/famp.12750

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179-211. http://doi.org/10.1016/0749-5978(91)90020-T

Alansari, M., & Rubie-Davies, C. (2019). What about the tertiary climate? Reflecting on five decades of class climate research. *Learning Environments Research, 23*(1), 1-25. http://doi.org/10.1007/s10984-019-09288-9

Amato, P. R. (2014). Does social and economic disadvantage moderate the effects of relationship education on unwed couples? An analysis of data from the 15-month Building Strong Families evaluation. *Family Relations, 63*(3), 343-355. https://doi.org/10.1111/fare.12069

Anderson, G. L., & Walberg, H. J. (1968). Classroom climate group learning. *International Journal of Educational Sciences, 2,* 175–180. http://doi.org/10.2307/1162156

Arnold, L. S., & Beelman, A. (2019). The effects of relationship education in low-income couples: A meta-analysis of randomized-controlled evaluation studies. *Family Relations*, **68**, 22– 38. http://doi.org/10.1111/fare.12325

Azur, M. J., Stuart, E. A., Frangakis, C., & Leaf, P. J. (2011). Multiple imputation by chained equations: What is it and how does it work? *International Journal of Methods in Psychiatric Research, 20(1),* 40–49. https://doi.org/10.1002/mpr.329

Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist, 44,* 1175-1184. http://doi.org/10.1037/0003-066X.44.9.1175

Bandura, A., & Walters, R. H. (1977). *Social learning theory (Vol. 1).* Prentice-hall.

Bangdiwala, S. I., Hassem, T., Swart, L. A., van Niekerk, A., Pretorius, K., Isobell, D., ... & Seedat, M. (2018). Evaluating the effectiveness of complex, multi-component, dynamic, community-based injury prevention interventions: A statistical framework. *Evaluation & the Health Professions*, *41*(4), 435-455. http://doi.org/10.1177/0163278717709562

Banker, B. S. & Gaertner, S. L. (1998). Achieving stepfamily harmony: An intergroup-relations approach. *Journal of Family Psychology, 12*, 310-325. http://doi.org/10.1037/0893-3200.12.3.310

Barth, J. M., Dunlap, S. T., Dane, H., Lochman, J. E., & Wells, K. C. (2004). Classroom environment influences on aggression, peer relations, and academic focus. *Journal of School Psychology*, *42*(2), 115-133. http://doi.org/10.1016/j.jsp.2003.11.004

Blanchard, V. L., Hawkins, A. J., Baldwin, S. A., & Fawcett, E. B. (2009). Investigating the effects of marriage and relationship education on couples' communication skills: A meta-analytic study. *Journal of Family Psychology*, *23*(2), 203-214. http://doi.org/10.1037/a0015211

Bodenmann, G., Meuwly, N., & Kayser, K. (2011). Two conceptualizations of dyadic coping and their potential for predicting relationship quality and individual well-being. *European Psychologist, 16*, 255-266. http://doi.org/10.1027/1016-9040/a000068

Bonwell, C. C., & Eison, J. A. (1991). *Active Learning: Creating Excitement in the Classroom. 1991 ASHE-ERIC Higher Education Reports*. ERIC Clearinghouse on Higher Education.

Bovier, P. A., Chamot, E., & Perneger, T. V. (2004). Perceived stress, internal resources, and social support as determinants of mental health among young adults. *Quality of Life Research*, *13*(1), 161-170. https://doi.org/10.1023/B:QURE.0000015288.43768.e4

Bowen, M. (1975). Family therapy after twenty years. *American Handbook of Psychiatry, 5*, 367-391. Basic Books.

Bowen, M. (1978). *Family Therapy in Clinical Practice.* Jason Aronson.

Bradbury, T. N., & Bodenmann, G. (2020). Interventions for Couples. *Annual Review of Clinical Psychology, 16*, 99–123. https://doi.org/10.1146/annurev-clinpsy-071519-020546

Bradford, A. B., Adler-Baeder, F., Ketring, S. A., Bub, K. L., Pittman, J. F., & Smith, T. A. (2014). Relationship quality and depressed affect among a diverse sample of relationally unstable relationship education participants. *Family Relations*, *63*(2), 219-231. http://doi.org/10.1111/fare.12064

Bradford, A. B., Adler-Baeder, F., Ketring, S. A., & Smith, T. A. (2012). The role of participant-facilitator demographic match in couple and relationship education. *Family Relations*, *61*(1), 51-64. http://doi.org/10.1111/j.1741-3729.2011.00679.x

Braithwaite, S. R., & Fincham, F. D. (2011). Computer-based dissemination: A randomized clinical trial of ePREP using the actor partner interdependence model. *Behaviour Research and Therapy*, *49*(2), 126-131. http://doi.org/10.1016/j.brat.2010.11.002

Braithwaite, S., & Holt-Lunstad, J. (2017). Romantic relationships and mental health. *Current Opinion in Psychology, 13*, 120-125. https://doi.org/10.1016/j.copsyc.2016.04.001

Britt, S. L., Lawson, D. R., & Haselwood, C. A. (2016). A Descriptive Analysis of Physiological Stress and Readiness to Change. *Journal of Financial Planning, 29,* 45-51. https://doi.org/10.4148/jft.v1i1.253

Bronfenbrenner, U. (1979). *The ecology of human development*. Harvard university press.

Brown, B. B., & Larson, J. (2009). Peer relationships in adolescence. *Handbook of Adolescent Psychology*, *2*. In Steinberg, R. M. L. (Ed.), Handbook of adolescent psychology, Contextual influences on adolescent development (Vol. 2, 3rd ed., pp. 74–103). John Wiley & Sons.

Buhrmester, D., Furman, W., Wittenberg, M. T., & Reis, H. T. (1988). Five domains of interpersonal competence in peer relationships. *Journal of Personality and Social Psychology*, *55*(6), 991-1008. http://doi.org/10.1037/0022-3514.55.6.991

Carlson, R. G., Daire, A. P., & Bai, H. (2014). Examining relationship satisfaction and individual distress for low-to-moderate income couples in relationship education. *The Family Journal*, *22*(3), 282-291. http://doi.org/10.1177/1066480714529741

Carlson, R. G., Wheeler, N. J., Lui, X., Hipp, C., & Daire, A. P. (2019). The Relationship Between Social Support and Family Relationships Among Low-Income Couples Attending Relationship Education. *Family Process*, *59*, 1-19. https://doi.org/10.1111/famp.12499

Carvajal, S. C., Baumler, E., Harrist, R. B., & Parcel, G. S. (2001). Multilevel models and unbiased tests for group-based interventions: Examples from the safer choices study. *Multivariate Behavioral Research*, *36*(2), 185-205. http://doi.org/10.1207/S15327906MBR3602_03

Center for Disease Control and Prevention (July, 2002) New Report Sheds Light on Trends and Patterns in Marriage, Divorce, and Cohabitation. Retrieved from https://www.cdc.gov/nchs/pressroom/02news/div_mar_cohab.htm

Chambless, D. L., Fauerbach, J. A., Floyd, F. J., Wilson, K. A., Remen, A. L., & Renneberg, B. (2002). Marital interaction of agoraphobic women: A controlled, behavioral observation study. *Journal of Abnormal Psychology*, *111*(3), 502–512. http://doi.org/10.1037/0021-843X.111.3.502

Charles, P., Jones, A., & Guo, S. (2014). Treatment Effects of a Relationship-Strengthening Intervention for Economically Disadvantaged New Parents. *Research on Social Work Practice, 24*(3), 321–338. https://doi.org/10.1177/1049731513497803

Christensen, A., & Heavey, C. L. (1999). Interventions for couples. *Annual Review of Psychology, 50,* 165–190. https://doi.org/10.1146/annurev.psych.50.1.165

Christensen, A., & Sullaway, M. (1984). *Communication patterns questionnaire*. Unpublished manuscript, University of California, Los Angeles.

Cohen, S., Kamarck, T., & Mermelstein, R. (1994). Perceived stress scale. Retrieved from PerceivedStressScale.pdf (northottawawellnessfoundation.org)

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24,* 385-396. http://doi.org/10.2307/2136404

Conger, R. D., Conger, K. J., & Martin, M. J. (2010). Socioeconomic status, family processes, and individual development. *Journal of Marriage and Family, 72*(3), 685–704. http://doi.org/10.1111/j.1741-3737.2010.00725.x

Conner, M., & Sparks, P. (1996). The theory of planned behaviour and health behaviours. In M. Conner & P. Norman (Eds.), Predicting health behaviour: Research and practice with social cognition models. (pp. 121–162). Open University Press.

Cowan, C. P., Cowan, P. A., Kline Pruett, M. & Pruett, K. (2007). An approach to preventing coparenting conflict and divorce in low-income families: Strengthening couple relationships and fostering fathers' involvement. *Family Process, 46*(1), 109-121. https://doi.org/10.1111/j.1545-5300.2006.00195.x

Cox, M. J., & Paley, B. (1997). Families as systems. *Annual Review of Psychology, 48*(1), 243-267. https://doi.org/10.1146/annurev.psych.48.1.243

Coyne, J. C., Thompson, R., & Palmer, S. C. (2002). Marital quality, coping with conflict, marital complaints, and affection in couples with a depressed wife. *Journal of Family Psychology, 16*(1), 26–37. http://doi.org/10.1037/0893-3200.16.1.26

Cozolino, L., & Sprokay, S. (2006). Neuroscience and adult learning. *New Directions for Adult and Continuing Education, 110,* 11-19. https://doi.org/10.1002/ace.214

Creemers, B.P.M., & Reezigt, G.J. (1999). The role of school and classroom climate in elementary school learning environments. In J. Freiberg (Ed.), *School climate: Measuring, improving and sustaining healthy learning environments,* (pp. 30–47). Falmer.

Deater-Deckard, K. (2008). *Parenting stress*. Yale University Press.

DeMaria, R. (2005). Distressed couples and marriage education. *Family Relations*, *54*(2), 242–253. https://doi.org/10.1111/j.0197-6664.2005.00019.x

Dew, M. A., & Bromet, E. J. (1991). Effects of depression on social support in a community sample of women. In *The Social Context of Coping* (pp. 189-211). Springer.

Din-Dzietham, R., Nembhard, W. N., Collins, R., & Davis, S. K. (2004). Perceived stress following race-based discrimination at work is associated with hypertension in African–Americans. The metro Atlanta heart disease study, 1999–2001. *Social Science & Medicine*, *58*(3), 449-461. http://doi.org/10.1016/S0277-9536(03)00211-9

Doss, B. D., Cicila, L. N., Hsueh, A. C., Morrison, K. R., & Carhart, K. (2014). A randomized controlled trial of brief coparenting and relationship interventions during the transition to parenthood. *Journal of Family Psychology*, *28*(4), 483-494. http://doi.org/10.1037/a0037311

Enders, C. K. (2010). Applied missing data analysis. Guilford Press.

Engfer, A. (1988). The interrelatedness of marriage and the mother-child relationship. In R. A. Hinde & J. S. Hinde (Eds.), *Relationships within families: Mutual influences* (pp. 104–118). Oxford University Press.

Erel, O., & Burman, B. (1995). Interrelatedness of marital relations and parent-child relations: A meta-analytic review. *Psychological Bulletin, 118*(1), 108–132. http://doi.org/10.1037/0033-2909.118.1.108

Feng, X., Mosimah, C. I., Sizemore, G., Goyat, R., & Dwibedi, N. (2019). Impact of mindful self-care and perceived stress on the health related quality of life among young-adult students in West Virginia. *Journal of Human Behavior in the Social Environment*, *29*(1), 26-36. https://doi.org/10.1080/10911359.2018.1470953

Fincham, F. D., & Lindfield, K. J. (1997). A new look at marital quality: Can spouses feel positive and negative about their marriage? *Journal of Family Psychology, 11*, 489-502. http://doi.org/10.1037/0893-3200.11.4.489-502

Finnegan, V. (2019). Community-based research: A mixed methods study of the influence of community educators' efficacy beliefs, program attitudes, and fidelity intention on practice. *Auburn University.* Retrieved from https://etd.auburn.edu/handle/10415/6952

Funk, J. L., & Rogge, R. D. (2007). Testing the ruler with item response theory: Increasing precision of measurement for relationship satisfaction with the Couples Satisfaction Index. *Journal of Family Psychology, 21*(4), 572 -583. http://doi.org/10.1037/0893-3200.21.4.572

Futris, T. G., & Adler-Baeder, F. (2013). Futris, T.G., & Adler-Baeder, F. (2013). National Extension Relationship and Marriage Education Model: Linking Research to Relationship and Marriage Education. In T.G. Futris & F. Adler-Baeder (Eds), *The National Extension Relationship and Marriage Education Model: Core Teaching Concepts for Relationship and Marriage Enrichment Programming. (Publication No. HDFS-E-157)*. Athens, GA: The University of Georgia Cooperative Extension. Available at www.nermen.org/NERMEM.php

Futris, T. G., Adler-Baeder, F., Ketring, S., Smith, T., Bradford, A., Cook, L., …, & Kehoe, J. (2014). *ELEVATE: Taking your relationship to the next level.* Cooperative Extension System. Publication No. FCS-2047. Available at www.nermen.org/NERMEM.php

Halford, W. K., & Bodenmann, G. (2013). Effects of relationship education on maintenance of couple relationship satisfaction. *Clinical Psychology Review*, *33*(4), 512-525. http://doi.org/10.1016/j.cpr.2013.02.001

Halford, W. K., Markman, H. J., & Stanley, S. (2008). Strengthening couples' relationships with education: Social policy and public health perspectives. *Journal of Family Psychology, 22*(4), 497–505. https://doi.org/10.1037/a0012789

Halford, W. K., Sanders, M. R., & Behrens, B. C. (2001). Can skills training prevent relationship problems in at-risk couples? Four-year effects of a behavioral relationship education program. *Journal of Family Psychology*, *15*(4), 750–768. https://doi.org/10.1037/0893-3200.15.4.750

Hawkins, A. J. (2019). Are federally supported relationship education programs for lower-income individuals and couples working? Washington DC: American Enterprise Institute. Retrieved from https://www.aei.org/research-products/report/are-federally-supported-relationship-education-programs-for-lower-income-individuals-and-couples-working-a-review-of-evaluation-research

Hawkins, A. J., Blanchard, V. L., Baldwin, S. A., & Fawcett, E. B. (2008). Does marriage and relationship education work? A meta-analytic study. *Journal of Consulting and Clinical Psychology*, *76*(5), 723-734. https://doi.org/10.1037/a0012584

Hawkins A.J., & Fackrell T.A. (2010). Does relationship and marriage education for lower-income couples work? A meta-analytic study of emerging research. Journal of Couple & Relationship Therapy, 9(2), 181–191. https://doi.org/10.1080/15332691003694927

Hawkins, A. J., & Ooms, T. (2012). Can marriage and relationship education be an effective policy tool to help low-income couples form and sustain healthy marriages and relationships? A review of lessons learned. *Marriage & Family Review*, *48*(6), 524-554. http://doi.org/10.1080/01494929.2012.677751

Kaplan, R. M., & Kronick, R. G. (2006). Marital status and longevity in the United States population. *Journal of Epidemiology & Community Health*, *60*(9), 760-765. http://doi.org/10.1136/jech.2005.037606

Kennedy, N., Johnson, S. M., Wiebe, S. A., Willett, J. B., & Tasca, G. A. (2019). Conversations for Connection: An Outcome Assessment of the Hold-Me-Tight Relationship-Education Program, and Recommendations for Improving Future Research Methodology in Relationship Education. *Journal of Marital and Family Therapy*, *45*(3), 431-446. http://doi.org/10.1111/jmft.12356

Ketring, S. A., Bradford, A. B., Davis, S. Y., Adler-Baeder, F., McGill, J., & Smith, T. A. (2017). The role of the facilitator in couple relationship education. *Journal of Marital and Family Therapy*, *43*(3), 374-390. http://doi.org/10.1111/jmft.12223

Kiecolt-Glaser, J. K., & Newton, T. L. (2001). Marriage and health: His and hers. *Psychological Bulletin*, *127*(4), 472-503. http://doi.org/10.1037/0033-2909.127.4.472

Knowles, M., & Smith, M. (1984). The adult learning theory—Andragogy. Retrieved from http://www.cfisdtechnologyservices.net/uploads/5/1/5/7/51575175/l_v_cetl_facility_the_adult_learning_theory_andragogy_knowles.pdf

Koball, H. L., Moiduddin, E., Henderson, J., Goesling, B., and Besculides, M., 2010. What Do We Know about the Link between Marriage and Health? *Journal of Family Issues 31*(8), 1019–1104. http://doi.org/10.1177/0192513X10365834

Kopystynska, O., Barnett, M. A., & Curran, M. A. (2020). Constructive and destructive interparental conflict, parenting, and coparenting alliance. *Journal of Family Psychology*, *34*(4), 414–424. http://doi.org/10.1037/fam0000606

Koth, C. W., Bradshaw, C. P., & Leaf, P. J. (2008). A multilevel study of predictors of student perceptions of school climate: The effect of classroom-level factors. *Journal of Educational Psychology*, *100*(1), 96-104. http://doi.org/10.1037/0022-0663.100.1.96

Kyriakides, L., Creemers, B. P. M., Papastylianou, D., & Papadatou-Pastou, M. (2014). Improving the School Learning Environment to Reduce Bullying: An Experimental Study. *Scandinavian Journal of Educational Research, 58*(4), 453–478. http://doi.org/10.1080/00313831.2013.773556

Lapshina, N., Crooks, C. V., & Kerry, A. (2019). Changes in Depression and Positive Mental Health among Youth in a Healthy Relationships Program. *Canadian Journal of School Psychology*, *34*(4), 300–316. http://doi.org/10.1177/0829573518777154

Laurenceau, J. P., & Stanley, S. M. Olmos-Gallo, A., Baucom, B., & Markman, H. J. (2004). Community-based prevention of marital dysfunction: Multilevel modeling of a randomized effectiveness study. *Journal of Consulting and Clinical Psychology, 72*(6), 933-943. https://doi.org/10.1037/0022-006X.72.6.933

Lawrence, E. M., Rogers, R. G., Zajacova, A., & Wadsworth, T. (2019). Marital happiness, marital status, health, and longevity. *Journal of Happiness Studies, 20*(5), 1539-1561. http://doi.org/10.1007/s10902-018-0009-9

Lavoie, J. A., & Douglas, K. S. (2012). The Perceived Stress Scale: Evaluating configural, metric and scalar invariance across mental health status and gender. *Journal of Psychopathology and Behavioral Assessment*, *34*(1), 48-57. http://doi.org/10.1007/s10862-011-9266-1

Lavoie, J. G., Wong, S. T., Chongo, M., Browne, A. J., MacLeod, M. L., & Ulrich, C. (2013). Group medical visits can deliver on patient-centered care objectives: Results from a qualitative study. *BMC Health Services Research, 13*(1), 1-10. https://doi.org/10.1186/1472-6963-13-155

Ma, Y., Pittman, J. F., Kerpelman, J. L., & Adler-Baeder, F. (2014). Relationship education and classroom climate impact on adolescents' standards for partners/relationships. *Family Relations*, *63*(4), 453-468. http://doi.org/10.1111/fare.12084

Maruish, M. (2012). *User's manual for the SF-12v2 health survey* (3rd ed.). Quality Metric Incorporated.

McGill, J., Adler-Baeder, F., Bradford, A. B., Kerpelman, J., Ketring, S. A., & Sollie, D. (2016). The role of relational instability on individual and partner outcomes following couple relationship education participation. *Family Relations*, *65*(3), 407-423. http://doi.org/10.1111/fare.12201

McGill, J., Adler-Baeder, F., & Garneau, R. C. (2021). An Evaluation of the ELEVATE Program for Couples: Considering Vulnerabilities and Relationship Length. *Family Relations*, *70*(1), 327–351. http://doi.org/10.1111/fare.12502

McGill, J., Ketring, S. A., & Adler-Baeder, F. (2016). *Couples Connecting Mindfully.* Unpublished Facilitator's Manual.

Mihăilă, T. (2015). Perceived stress scale as a predictor of professional behavior and aspects of wellbeing. *Romanian Journal of Cognitive-Behavioral Therapy & Hypnosis*, *2*(2), 1–14. https://doi.org/10.7282/t3-wbv0-ag33

Mitchell, A. M., Owen, J., Adelson, J. L., France, T., Inch, L. J., Bergen, C., & Lindel, A. (2015). The influence of dyadic coping in relationship education for low- income racial and ethnic minority couples. *Journal of Family Therapy*, *37*(4), 492–508. http://doi.org/10.1111/1467-6427.12057

Morrison, S. U., Adler-Baeder, F., Bub, K. L., & Duke, A. (2018, February). Contextualizing relationship education and adolescent attitude toward sexual behavior: Considering class climate. *Child & Youth Care Forum*, *47*(1), 133-150. http://doi.org/10.1007/s10566-017-9423-0

Nastasi, B. K., & Hitchcock, J. (2009). Challenges of evaluating multilevel interventions. *American Journal of Community Psychology*, *43*(3-4), 360-376. http://doi.org/10.1007/s10464-009-9239-7

Norton, R. (1983). Measuring marital quality: A critical look at the dependent variable. *Journal of Marriage & the Family, 45*, 141-151. http://doi.org/10.2307/351302

Owen, J., Antle, B., & Barbee, A. (2013). Alliance and group cohesion in relationship education. *Family Process*, *52*(3), 465-476. http://doi.org/10.1111/famp.12039

Owen, J., Quirk, K., Bergen, C., Inch, L. J., & France, T. (2012). The effectiveness of PREP with lower-income racial/ethnic minority couples. *Journal of Marital and Family Therapy*, *38*, 296-307. http:// doi.org/10.1111/j.1752-0606.2012.00294.x

Owen, J., Rhoades, G. K., & Stanley, S. M. (2013). Sliding versus deciding in relationships: Associations with relationship quality, commitment, and infidelity. *Journal of Couple & Relationship Therapy*, *12*(2), 135-149. http://doi.org/10.1080/15332691.2013.779097

Peugh, J. L. (2010). A practical guide to multilevel modeling. *Journal of School Psychology*, *48*(1), 85-112. http://doi.org/10.1016/j.jsp.2009.09.002

Ponnet, K., Mortelmans, D., Wouters, E., Van Leeuwen, K., Bastaits, K., & Pasteels, I. (2013). Parenting stress and marital relationship as determinants of mothers' and fathers' parenting. *Personal Relationships*, *20*(2), 259-276. http://doi.org/10.1111/j.1475-6811.2012.01404.x

Pope, N., Giger, J., Lee, J., & Ely, G. (2017). Predicting personal self-care in informal caregivers. *Social Work in Health Care*, *56*(9), 822-839. http://doi.org/10.1080/00981389.2017.1344755

Praharso, N. F., Tear, M. J., & Cruwys, T. (2017). Stressful life transitions and wellbeing: A comparison of the stress buffering hypothesis and the social identity model of identity change. *Psychiatry Research*, *247*, 265–275. http://doi.org/ 10.1016/j.psychres.2016.11.039

Quirk, K., Strokoff, J., Owen, J. J., France, T., & Bergen C. (2014). Relationship education in community settings: Effectiveness with distress and non-distressed low-income racial minority couples. *Journal of Marital & Family Therapy, 40*, 1– 12. http://doi.org/10.1111/jmft.12080

Raudenbush, S. W. & Byrk, A. S. (2002). *Hierarchical models: Applications and data analysis Methods, 2nd edition*. Sage.

Randall, A. K., & Bodenmann, G. (2009). The role of stress on close relationships and marital satisfaction. *Clinical Psychology Review*, *29*(2), 105-115. http://doi.org/10.1016/j.cpr.2008.10.004

Randles, J. M. (2014). Partnering and parenting in poverty: A qualitative analysis of a relationship skills program for low-income, unmarried families. *Journal of Policy Analysis and Management*, *33*(2), 385-412. http://doi.org/10.1002/pam.21742

Rathmann, K., Herke, M. G., Hurrelmann, K., & Richter, M. (2018). Perceived class climate and school-aged children's life satisfaction: The role of the learning environment in classrooms. *PLoS ONE*, *13*(2), 1–21. http://doi.org/10.1371/journal.pone.0189335

Rauer, A. J., Adler-Baeder, F., Lucier-Greer, M., Skuban, E., Ketring, S. A., & Smith, T. (2014). Exploring processes of change in couple relationship education: Predictors of change in relationship quality. *Journal of Family Psychology, 28*(1), 65–76. http://doi.org/10.1037/a00355021

Rhoades, G. K. (2015). The effectiveness of the Within Our Reach relationship education program for couples: Findings from a federal randomized trial. *Family Process*, *54*(4), 672–685. http://doi.org/10.1111/famp.12148

Rodriguez, C. M. (2010). Parent–child aggression: Association with child abuse potential and parenting styles. *Violence and Victims*, *25*(6), 728-741. http://doi.org/10.1891/0886-6708.25.6.728

Ross, C. E., Mirowsky, J., & Goldsteen, K. (1990). The impact of the family on health: The decade in review. *Journal of Marriage and the Family*, *52*(4), 1059-1078. http://doi.org/10.2307/353319

Sanri, Ç., Halford, W. K., Rogge, R. D., & von Hippel, W. (2021). The couple flourishing measure. *Family Process*. http://doi.org/10.1111/famp.12632

Simoni, J. M., Franks, J. C., Lehavot, K., & Yard, S. S. (2011). Peer interventions to promote health: Conceptual considerations. *American Journal of Orthopsychiatry*, *81*(3), 351–359. https://doi.org/10.1111/j.1939-0025.2011.01103.x

Singer, J.D. (1998). Using SAS proc mixed to fit multilevel models, hierarchical models, and individual growth models. *Journal of Education and Behavioral Statistics*, *24*, 323-355. http://doi.org/10.2307/1165280

Stanley, S. M., Carlson, R. G., Rhoades, G. K., Markman, H. J., Ritchie, L. L., & Hawkins, A. J. (2020). Best practices in relationship education focused on intimate relationships. *Family Relations*, *69*, 497-519. http://doi.org/10.1111/fare.12419

Stanley, S. M., & Markman, H. J. (1992). Assessing commitment in personal relationships. *Journal of Marriage and the Family*, *54*, 595-608. http://doi.org/10.2307/353245

Stanley, S. M., Markman, H. J., & Whitton, S. W. (2002). Communication, conflict, and commitment: Insights on the foundations of relationship success from a national survey. *Family Process*, *41*(4), 659-675 http://doi.org/10.1111/j.1545-5300.2002.00659.x

Stanley, S. M., Rhoades, G. K., Loew, B. A., Allen, E. S., Carter, S., Osborne, L. J., . . . Markman, H. J. (2014). A randomized controlled trial of relationship education in the U.S. Army: 2-year outcomes. *Family Relations*, *63*, 482–495. https://doi.org/10.1111/fare.12083

Steinberg, L. (2001). We know some things: Parent–adolescent relationships in retrospect and prospect. *Journal of Research on Adolescence*, *11*, 1-19. http://doi.org/10.1111/1532-7795.00001

Strobl, C., Malley, J., & Tutz, G. (2009). An introduction to recursive partitioning: Rationale, application, and characteristics of classification and regression trees, bagging, and random forests. *Psychological Methods*, *14*, 323– 348. https://doi.org/10.1037/a0016973

Thapa, A., Cohen, J., Guffey, S., & Higgins-D'Alessandro, A. (2013). A review of school climate research. *Review of Educational Research*, *83*(3), 357–385. http://doi.org/10.3102/0034654313483907

U.S. Census Bureau, 2008 and 2018 American Community Survey, 1-year Estimates www.census.gov/programs-surveys/acs/

U.S. Department of Health and Human Services, National Institutes of Health, National Institute of Mental Health. (2022). Caring for your mental health. Retrieved from https://www.nimh.nih.gov/health/topics/caring-for-your-mental-health

Valiente, C., Swanson, J., DeLay, D., Fraser, A. M., & Parker, J. H. (2020). Emotion-related socialization in the classroom: Considering the roles of teachers, peers, and the classroom context. *Developmental Psychology*, *56*(3), 578–594. http://doi.org/10.1037/dev0000863

Wang, M.-T., L. Degol, J., Amemiya, J., Parr, A., & Guo, J. (2020). Classroom climate and children's academic and psychological wellbeing: A systematic review and meta-analysis. *Developmental Review*, *57*, 1-21. http://doi.org/10.1016/j.dr.2020.100912

Wang, M. C., Haertal, G. D., & Walberg, H. J. (1990). What influences learning? A content analysis of review literature. *Journal of Educational Research, 84*, 30-43. https://doi.org/10.1080/00220671.1990.10885988

Ware, J. E., & Gandek, B. (1998). Overview of the SF-36 health survey and the international quality of life assessment (IQOLA) project. *Journal of Clinical Epidemiology*, *51*(11), 903- 912. http://doi.org/10.1016/s0895-4356(98)00081-x

Ware, J., Kosinski, M., & Keller, S. (1996). A 12-Item Short-Form Health Survey: Construction of Scales and Preliminary Tests of Reliability and Validity. *Medical Care*, *34*(3), 220-233. http://doi.org/10.1097/00005650-199603000-00003

Wei, H.-S., Williams, J. H., Chen, J.-K., & Chang, H.-Y. (2010). The effects of individual characteristics, teacher practice, and school organizational factors on students' bullying: A multilevel analysis of public middle schools in Taiwan. *Children and Youth Services Review*, *32*(1), 137–143. http://doi.org/10.1016/j.childyouth.2009.08.004

Wheeler, N. J., Barden, S. M., & Daire, A. P. (2019). Mediation of childhood adversity and health by relationship quality in diverse couples. *Family Process*, 1-18. http://doi.org/10.1111/famp.12467

Wheeler, N. J., Harris, S., & Young, M. E. (2018). Relationship educator experiences of couple improvement and group dynamics in relationship education with low-income couples. *The Family Journal*, *26*(2), 174-184. http://doi.org/10.1177/1066480718793651

Whiteneck, G. G. (2010). Issues Affecting the Selection of Participation Measurement in Outcomes Research and Clinical Trials. *Archives of Physical Medicine & Rehabilitation, 91*(9), S54–S59. http://doi.org/10.1016/j.apmr.2009.08.154

Williamson, H. C., Altman, N., Hsueh, J., & Bradbury, T. N. (2016). Effects of relationship education on couple communication and satisfaction: A randomized controlled trial with low-income couples. *Journal of Consulting and Clinical Psychology, 84*(2), 156–166. http://doi.org/10.1037/ccp0000056

Williamson, H. C., Rogge, R. D., Cobb, R. J., Johnson, M. D., Lawrence, E., & Bradbury, T. N. (2015). Risk moderates the outcome of relationship education: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 83*(3), 617–629. https://doi.org/10.1037/a0038621

Wiltsey Stirman, S., & Beidas, R. S. (2020). Expanding the reach of psychological science through implementation science: Introduction to the special issue. *American Psychologist*, *75*(8), 1033–1037. https://doi.org/10.1037/amp0000774

Wojnar, L., & Uden, L. (2005). Group process & trust in group discussion. *International Journal of Information and Communication Technology Education*, *1*(1), 55–68. https://doi.org/10.4018/jicte.2005010106

Whisman, M. A., & Baucom, D. H. (2012). Intimate relationships and psychopathology. *Clinical Child and Family Psychology Review*, *15*(1), 4-13. http://doi.org/10.1007/s10567-011-0107-2

Wilhelmson, L., Åberg, M. M., Backström, T., & Olsson, B. K. (2015). Enabling transformative learning in the workplace: An educative research intervention. *Journal of Transformative Education*, *13*(3), 219-238. http://doi.org/10.1177/1541344615574599

Wood, R. G., Goesling, B., & Avellar, S. (2007). *The effects of marriage on health: A synthesis of recent research evidence*. New York, NY: Nova Science

Woods, S. B., Priest, J. B., Signs, T. L., & Maier, C. A. (2019). In sickness and in health: The longitudinal associations between marital dissatisfaction, depression and spousal health. *Journal of Family Therapy*, *41*(1), 102–125. https://doi.org/10.1111/1467-6427.12207

Figure 1. Class-Level Income from a Random Selection of Ten Classes

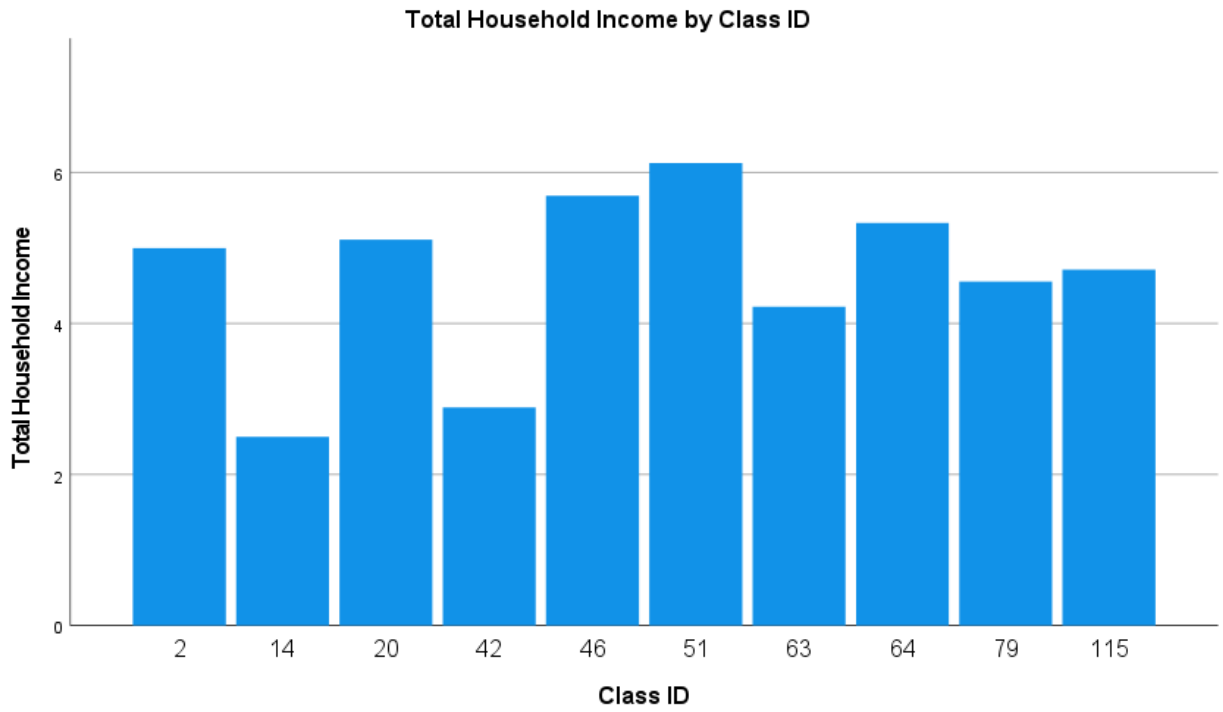

Figure 2. Class-Level Perceived Stress from a Random Selection of Ten Classes

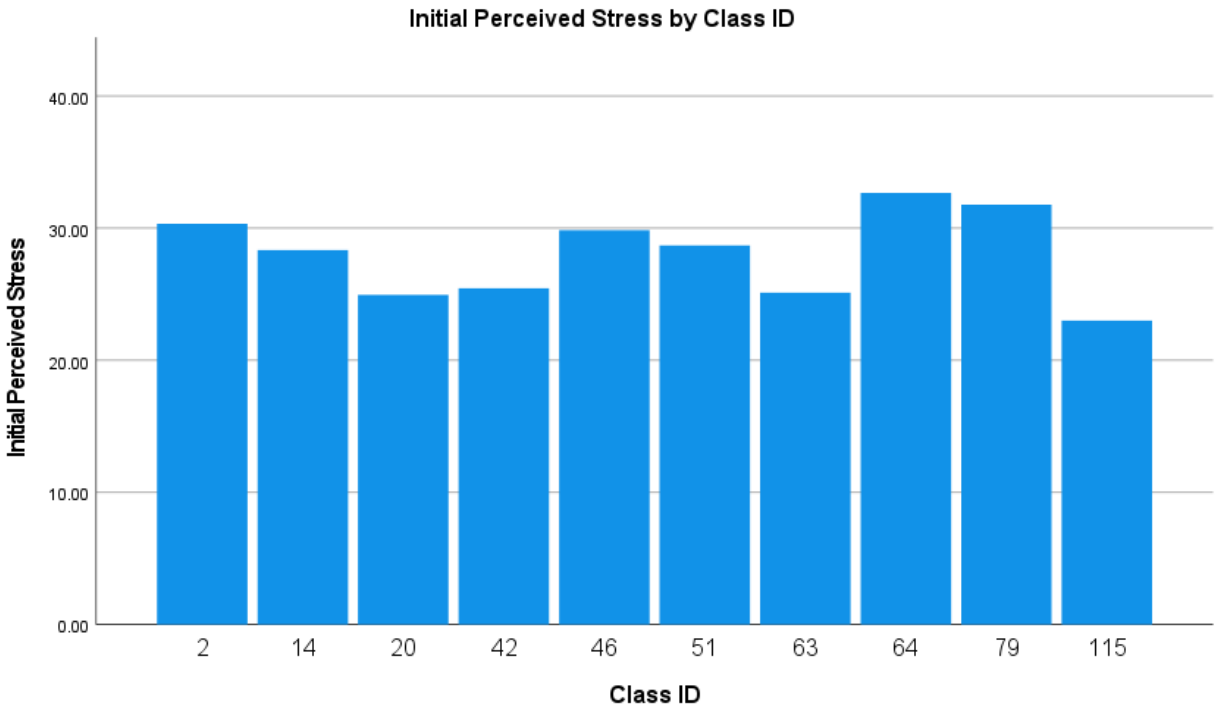

Figure 3. Class-Level Relationship Quality from a Random Selection of Ten Classes

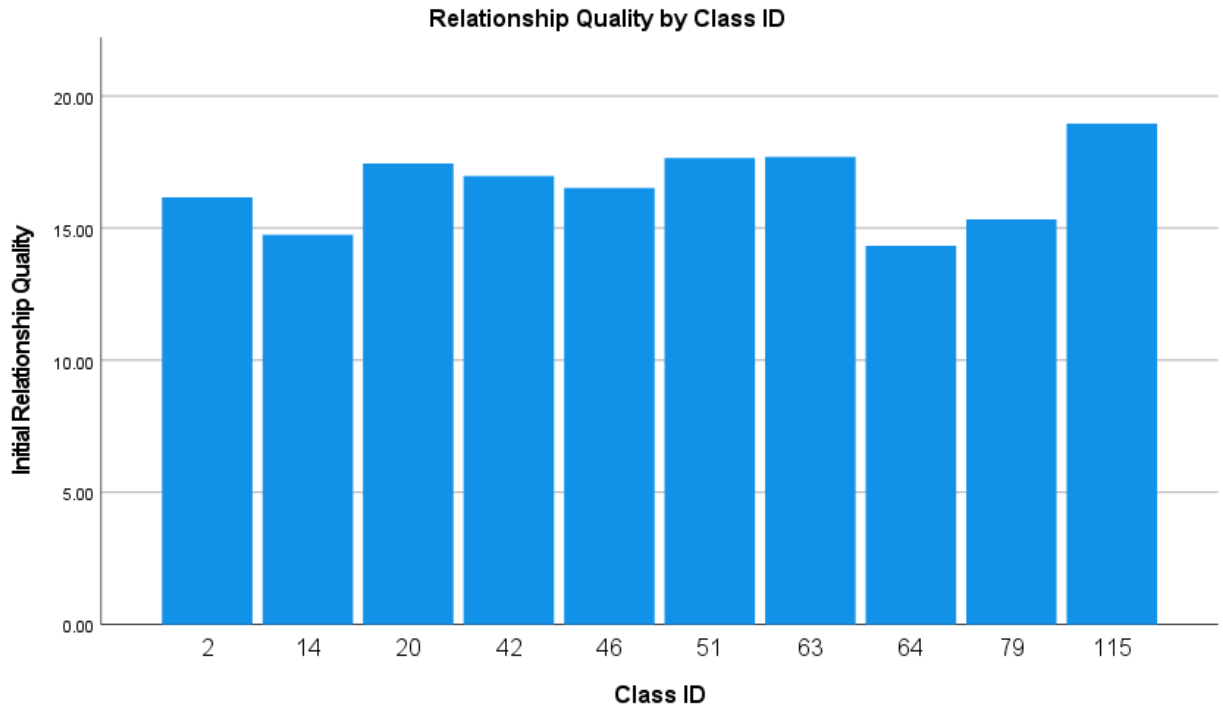

Figure 4. Change in Self-Care from a Random Sample of Ten Classes

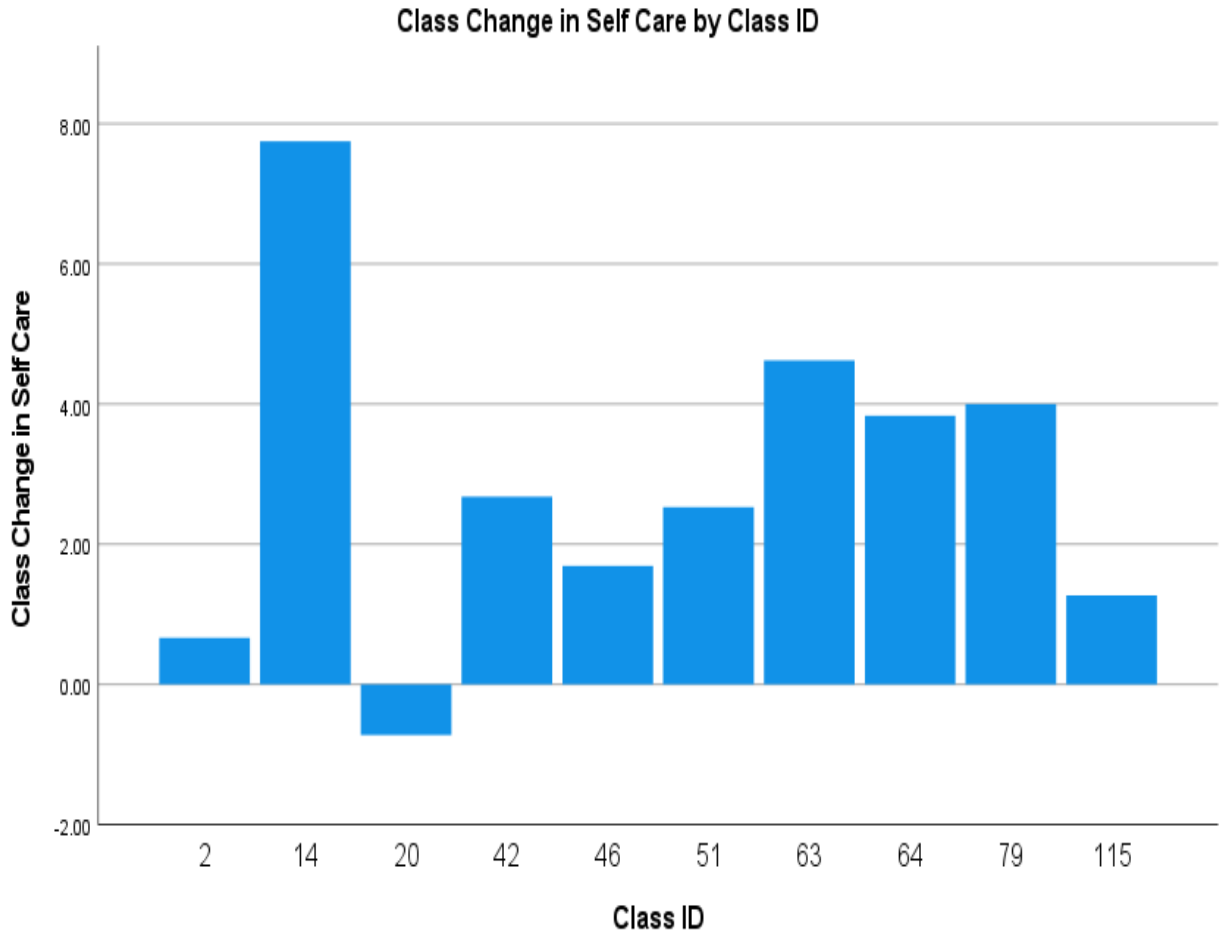

Figure 5. Change in Conflict Management from a Random Sample of Ten Classes

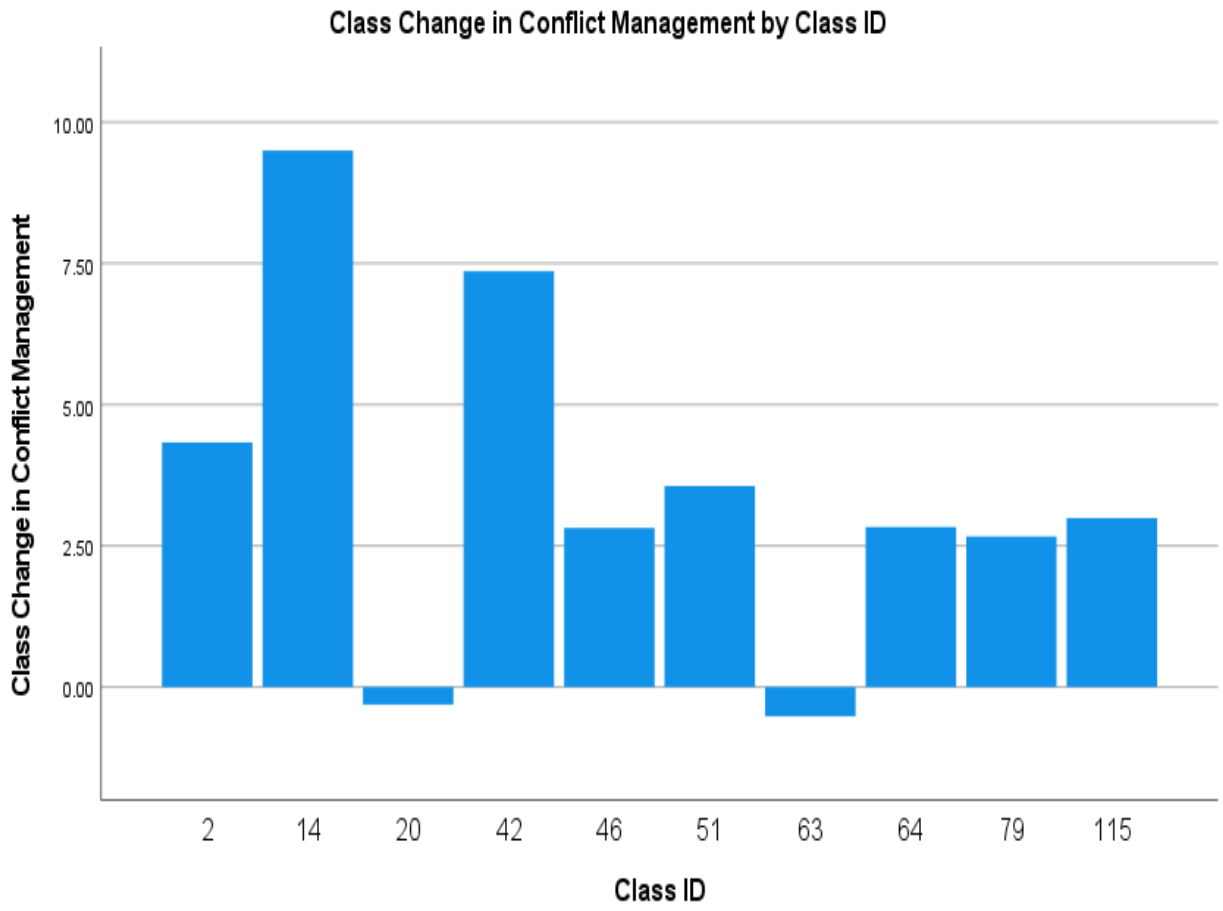

Figure 6. Change in Mental Health from a Random Sample of Ten Classes

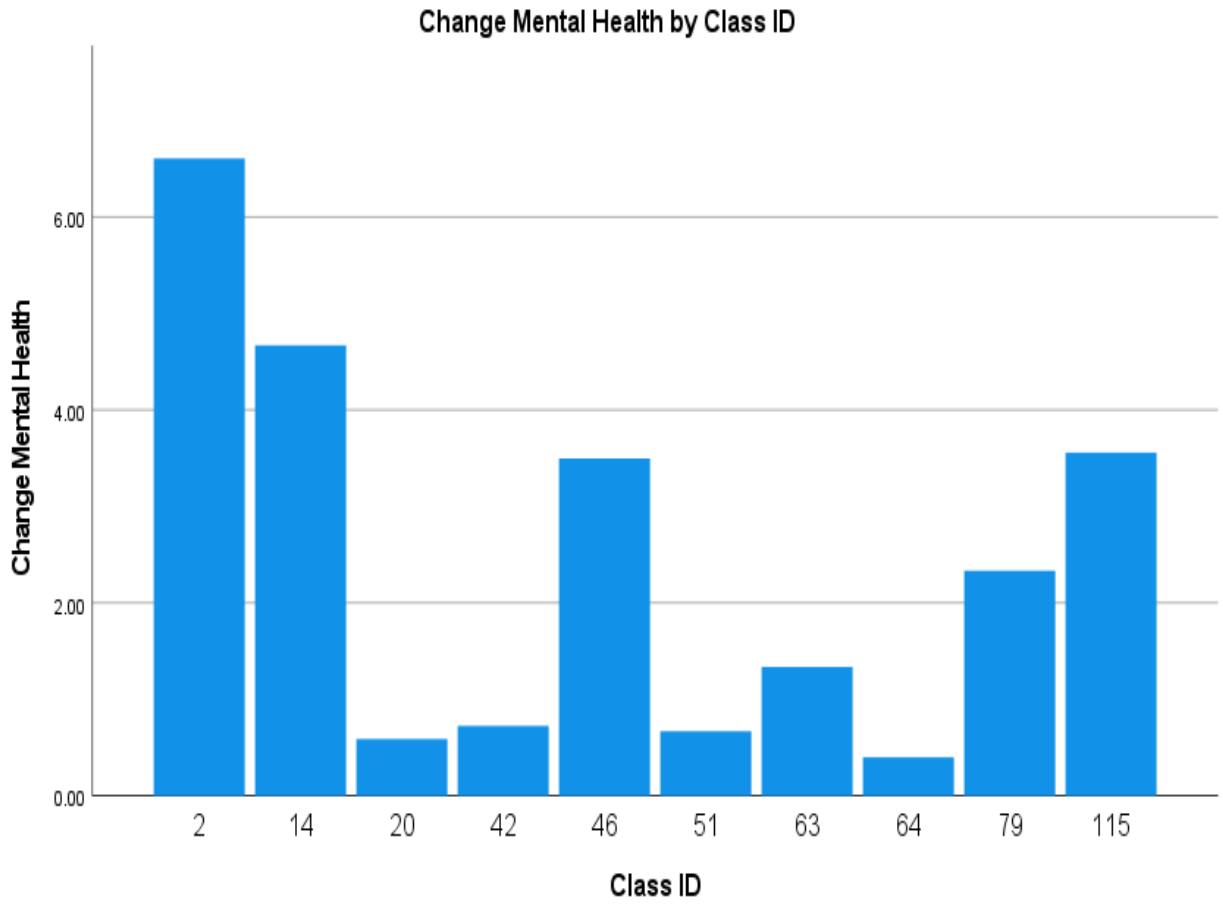

Figure 7. Change in Relationship Quality from a Random Sample of Ten Classes

Figure 8. Change in Family Harmony from a Random Sample of Ten Classes

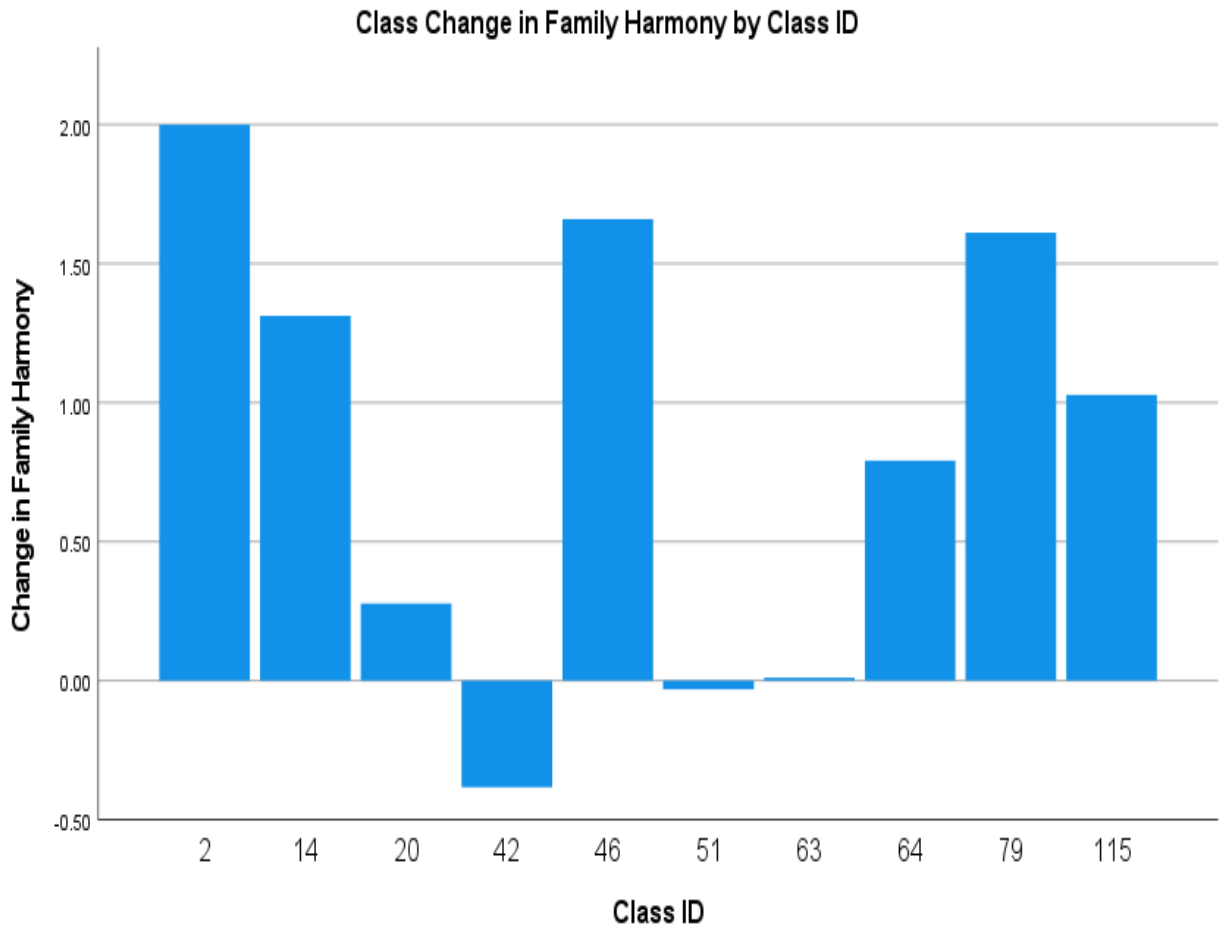

Figure 9. Prototypical Plot of the Interaction of Individual and Class Perceived Stress on Change in Self-Care.

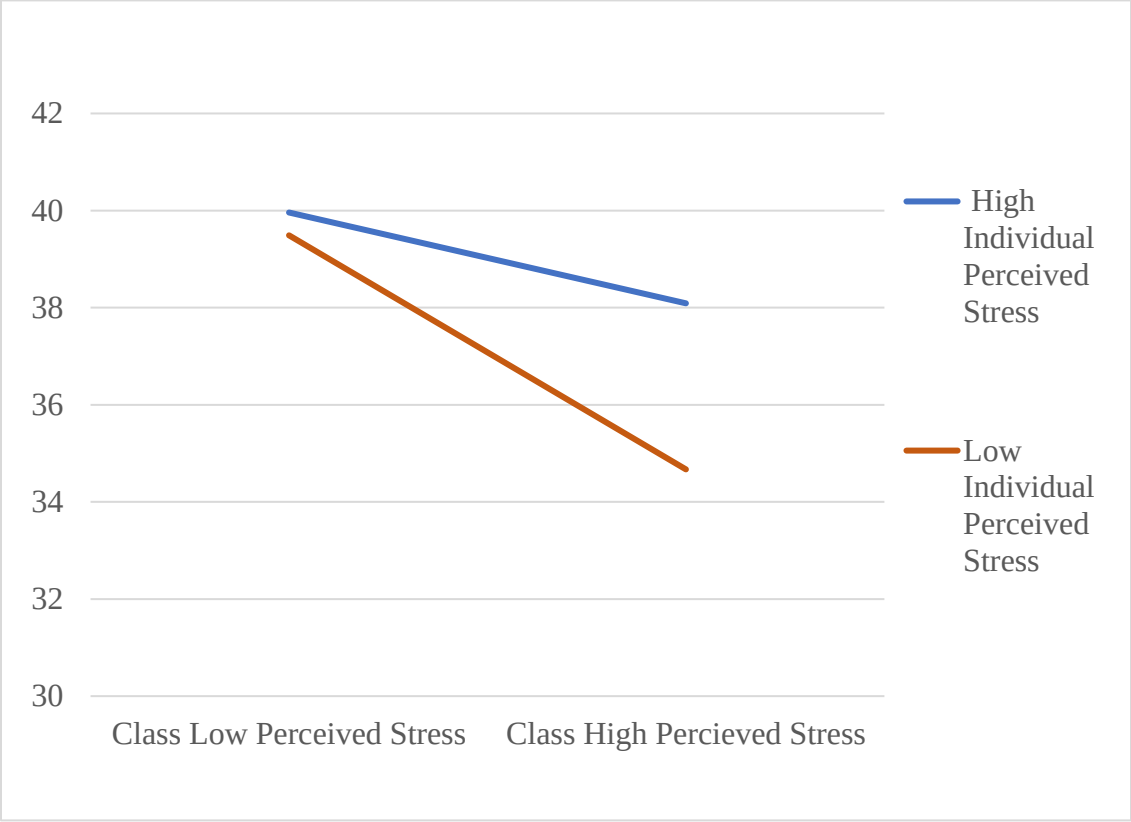

Figure 10. Prototypical Plot of Interaction of Individual and Class Perceived Stress on Change in Conflict Management.