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# Physical Health as a Predictor of Change in Self-Reported Presenting Problems in Couple Therapy, as Mediated by Emotional Regulation

Janette J. Driscoll  
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Physical Health as a Predictor of Change in Self-Reported Presenting Problems  
in Couple Therapy, as Mediated by Emotional Regulation

Janette J. Driscoll

A thesis submitted to the faculty of  
Brigham Young University  
in partial fulfillment of the requirements for the degree of

Master of Science

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## ABSTRACT

### **Physical Health as a Predictor of Change in Self-Reported Presenting Problems in Couple Therapy, as Mediated by Emotional Regulation**

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Recent literature in couple therapy has demonstrated the effects of physical health on some common presenting problems; however, few studies have considered progress as a construct on its own, irrespective of client-identified presenting problem. The current study used an Actor-Partner Interdependence Mediated Model to determine the connection between each partner's physical health and their own and their partner's self-reported progress in couple therapy, mediated by each partner's emotional regulation. Physical health was measured every four sessions using the Health-Related Quality of Life scale, and progress was measured by the Presenting Problem Progress Questionnaire given each time a couple attended therapy. Emotional regulation was measured by the Difficulties in Emotion Regulation scale. The research questions asked whether healthier people and/or their partners would be more emotionally regulated and therefore experience more progress. Results indicated a significant predictive relationship between individual health and presenting problem progress for males and females; however, neither association was mediated by emotional regulation. Additional results suggested that health may predict emotional regulation for both male and female clients, with female health also predicting variation in male emotional regulation. Clinicians are encouraged to consider client health as a predictor of emotional regulation and create treatment goals that facilitate improvements to client health.

Keywords: actor-partner interdependence mediated model, couple therapy, emotional regulation, physical health, progress

## **ACKNOWLEDGEMENTS**

As the saying goes, “it takes a village to raise a child.” I joke that my master’s degree was my first child and that my “second” child was born during the first year of my program. To the enormous village that has helped me both produce this thesis and raise my son, I extend heartfelt gratitude. In particular, I thank my parents, siblings, and in-laws for taking a genuine interest in this program and all of my educational endeavors, despite any shrouded misgivings about having a therapist in the family. I thank my graduate cohort for their constant emotional support, good nature, and lasting friendship. Many, many thanks to my graduate advisor, Dr. Lee Johnson, for his mentorship, authenticity, and matchless patience. Finally and most significantly, I thank my husband, Steven, for insisting I chase after my passions and being a true partner in every way.

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## **Physical Health as a Predictor of Change in Self-Reported Presenting Problems In Couple Therapy, as Mediated by Emotional Regulation**

Couple therapy has evolved since the mid-20<sup>th</sup> century as a way to enhance marital quality through interventions to target communication patterns, behavioral interactions, mutual acceptance, and other elements of relationships (Halford & Pepping, 2019; Sevier et al., 2015). We know that marriage quality is positively associated with physical health and that happier marriages predict healthier spouses, both in terms of daily functioning and biological factors such as blood pressure (Robles, 2014). However, there is no research that looks at the role physical health plays in the progress or change couples experience in therapy. To better demonstrate the importance of this study, we have provided information on the role of physical health in relationships and how lower physical health may hinder clients' ability to regulate their emotions and subsequently, to make changes in self-reported presenting problems. We also addressed the value of using progress in presenting problems as an outcome.

### **Literature Review**

#### **The Impact of Physical Health on Couple Relationships**

Physical health factors into most every aspect of life, "encompass[ing] the overall condition of a person's physical body, including soundness (healthiness) and/or lack of health" (McCloughen et al., 2012, p. 275) and can predict higher levels of social support (Hale et al., 2005; Uchino, 2009). The connection between health and social support is especially evident within the context of marriage. Several studies have established a positive correlation between physical health and marriage quality (Miller et al., 2013; Robles et al., 2014). A 2014 meta-analysis on marital quality and health revealed that lower cardiovascular reactivity and taking responsibility for one's own health can predict higher marital quality (Robles et al., 2014). Some

impediments to marital quality include poor overall health, metabolic syndrome and decreased functioning as a result of chronic pain (Robles et al., 2014).

The connection between physical health and relationship satisfaction can have implications for couple therapy outcomes. For example, poorer physical health of women has been linked to increased emotional distancing within couple relationships, and worse physical health in men is connected to conflict in couple interactions (Fisher et al., 1992). The direction of these findings is opposite the research question in this study, however, placing emotional distancing and conflict as predictors of spouses' respective health. To better describe the relationship between health, emotional regulation, and progress in therapy we used the concept of Window of Tolerance (Siegel, 1999).

### **Window of Tolerance**

The window of tolerance is the zone of neurological arousal in which people are able to optimally manage daily life (Siegel, 1999). The upper limit of the window of tolerance is sympathetic hyperarousal, which is characterized by flooding, impulsive behaviors, fear, and anger (Corrigan et al., 2011). The lower limit is parasympathetic hypo-arousal and is evidenced by feelings of helplessness, inability to process events, numbness, and disconnection (Corrigan et al., 2011). Ideally, a person can stay within the window where they can regulate their emotions, receive feedback, and accurately interpret signals from others (Corrigan et al., 2011), and by extension be better able to implement changes in their lives. Since everyone's window of tolerance is different, one event can elicit different reactions for different individuals. This is especially important within the context of relationships. Spouses will most often have different windows of tolerance and therefore emotional regulation, interactions with each other, and

responses to various contexts, including health circumstances. These differences also affect each partner's experience in therapy and their potential for progress and eventual change.

The width of each person's window of tolerance can vary depending on their context. What bothers someone on one day or at a particular moment may not be an issue at some future point. Even among people who have experienced the same situation, physiological responses can vary significantly depending on the day or context (Siegel, 1999). Therefore, maintaining a wider window of tolerance is important, to better regulate our emotions within relationships and to facilitate improvement.

Maintaining good physical health is one fundamental part of maintaining a wide window of tolerance (Siegel, 1999). Physical health can be improved with regular exercise, adequate sleep, balanced nutrition, and positive social interactions (Briguglio et al., 2020). Conversely, physical health problems can lead to a narrower window of tolerance, which theoretically increases the threat perceived by new stimuli (Siegel, 1999) and contributes to feelings of unsafety (Corrigan et al., 2011). The heightened state this describes is colloquially known as "fight-or-flight." In contrast, when people are within their window of tolerance, their body is able to more accurately identify threats and respond appropriately (Siegel, 1999). In order to enact change, it is essential for individuals to feel safe (Maslow, 1943). Thus, the window of tolerance conceptualization illustrates the effect of health on personal emotional regulation, which may in turn influence the change process.

### **Physical Health, Emotional Regulation, and the Process of Change**

Physical health as a barrier to change is a less-often considered factor in the therapeutic process. Related research shows that people with moderate to severe health problems experience slower improvement in symptoms of their depression than people without health problems (Cui

et al., 2015). This shows that health conditions can predict limitations clients may face in their efforts towards improving their conditions. Additionally, the window of tolerance theory states that physiological functioning, including health, at any given time, can impact our ability to regulate our emotions (Siegel, 1999).

Physical health problems have been shown to hinder treatment progress for various mental health diagnoses (Koch et al., 2015). Research on the correlation between physical symptom count and outcomes in people being treated for major depressive disorder shows a direct link between the participants' physical health and treatment effectiveness. Controlling for chronic illness, the study concluded that the presence of more physical health symptoms predicts less effective treatment for major depressive disorder (Huijbregts et al., 2013). With one major symptom of depression being poor sleep, it is worth noting that sleep is another health-related predictor of emotional regulation abilities (Mauss et al., 2013). The finding that worse physical health predicted less effective treatment for depression is important because it shows that in at least the case of depression, physical health may be linked to progress in presenting problem.

### **The Value of Presenting Problems as an Outcome**

Couples seek therapy with a variety of presenting problems (Halford & Pepping, 2019). For this study, we define presenting problems as client reported mental health issues and relational patterns that create dysfunction within a couple system and have led the couple to pursue therapy (Wu et al., 2020). Research shows that forty-three percent of couples present for relational problems, such as communication, sexual intimacy, or conflict resolution. Further, couples often present with mental health concerns, such as depression or anxiety, in at least one partner (Heafner et al., 2016). With all presenting problems, the therapist and couple identify

goals to direct the course of treatment. These goals, which are usually related to each partner's presenting problems, are most often the standard against which progress is measured.

There is little research addressing progress in presenting problems as an independent construct; instead, most studies focus on one specific presenting problem, which is usually a diagnosis. Each couple case has its own set of presenting problems which makes it difficult to generalize the overall level of progress experienced from case to case. To provide general information to therapists, this study attempts to show the association between health and the general therapy process by using presenting problem progress as an outcome variable.

### **Research Questions**

1. What is the influence of male health at intake on male presenting problem progress at session 4?
2. What is the influence of female health at intake on female presenting problem progress at session 4?
3. What is the influence of male health at intake on female presenting problem progress at session 4?
4. What is the influence of female health at intake on male presenting problem progress at session 4?
5. Does male emotional regulation at intake mediate the relationship between male health and male presenting problem progress?
6. Does female emotional regulation at intake mediate the relationship between female health and female presenting problem progress?
7. Does male emotional regulation at intake mediate the relationship between male health and female presenting problem progress?

8. Does male emotional regulation at intake mediate the relationship between female health and male presenting problem progress?
9. Does female emotional regulation at intake mediate the relationship between female health and male presenting problem progress?
10. Does female emotional regulation at intake mediate the relationship between male health and female presenting problem progress?

## **Method**

### **Participants**

There were 307 participants in this study (154 female), each reported being in a committed relationship, ranging in age from 18 to 70 years old. The mean age for males was 29.5 years ( $SD = 9.12$ ), while the mean age for females was 28.3 years ( $SD = 9.57$ ). Over 80% of the participants were White ( $n = 258$ ), and there was more racial variability in female participants. The majority of the participants had a two-year degree or higher (70.6% of males and 80% of females). Income levels ranged from under \$10,000 to over \$100,000, with the modal category for reported income being \$10,000 to \$19,999 ( $n = 69$ ). Most participants reported cohabitating with their significant other (84% of males and 81% of females), with 99% of males ( $n = 126$ ) and 96% of females ( $n = 124$ ) reporting being married. Couples reported being together for an average of 5.7 years, with a range of 0 to 44 years.

### **Procedures for Data Collection**

Data for these analyses were collected through the Marriage and Family Therapy Practice Research Network (“MFT-PRN”) and deidentified before use (Johnson et al., 2017). The MFT-PRN is used by a variety of clinics to inform both therapeutic treatment and research. Each clinic selects which assessments their clients take, which creates some variability between clinics in

what data is available. Since one of the measures used in this study is only used at a clinic in the Western United States, only data from that clinic were used.

## **Measures**

### ***Dependent Variable***

Prior to their first session, clients selected up to three presenting problems from a dropdown list. The list of options was created from a review of literature on common presenting problems (Doss, 2004; Whisman et al., 1997) as well as a seven-year-long thematic analysis of presenting problems at a university training clinic (Heafner et al., 2016). Before each subsequent session, clients were asked to rate their progress on each presenting problem through the “Presenting Problem Progress Questionnaire” (PPPQ) via the MFT-PRN. The PPPQ is an ideographic assessment, meaning that the items have been individually tailored to each client’s circumstances (Haynes et al., 2009). Many assessments given in psychotherapy are nomothetic, meaning that the items are standardized across clients and are more easily interpreted as a result (Haynes et al., 2009). Validation of the PPPQ is ongoing, and no alpha was run on this measure because it would not be an appropriate way to test the reliability of an idiographic measure such as this (Haynes et al., 2009).

The measure asked participants to rate their progress in their one to three self-identified problems for which they are attending therapy. Clients were asked to “Choose the option that best describes your progress on resolving \_\_\_\_\_.” The options were an anchored Likert Scale from -3 to 3 with the following anchors: problem is a lot worse, problem is somewhat worse, problem is a little worse, problem stayed the same, problem is a little better, problem is somewhat better, or problem is solved. For this analysis, participants’ self-reported progress

across all three presenting problems was averaged at session 4. Higher scores reflect more progress in resolving each presenting problem.

Averaging self-reported progress scores across three presenting problems led to some challenges representing the progress clients experienced. First, it is highly unlikely that all three presenting problems changed over the first four sessions at exactly the same rate. Therefore, while one problem could be marked “solved” with a score of 3, another problem could have been marked “somewhat worse” with a score of -2, and the third problem marked “no change” with a score of 0. This would average to a change score of 0.33, which is not reflective of the strides the client has made in at least one area since beginning therapy. An alternative to averaging the three scores would be calculating a change score for the reported “most important” of the three problems the client listed. However, it is impossible to know whether that problem was the focus of treatment during the first four sessions and whether it was reasonable to expect to see a report of positive or negative progress. It is also important to note that presenting problems vary in degrees of severity; for example, ongoing abuse, conflict with a child, and just wanting to talk to someone will all change on different timetables. These challenges are not unique to the PPPQ; rather, they highlight some of the difficulties with taking a general measure of change.

This questionnaire has content validity because the operationalization of the presenting problem was based on the participant’s own ideas of why they are coming to therapy and research on common presenting problems in couple therapy. Further improving content validity, the items were derived from existing research. There is also no gap in understanding as to what is being asked because it is fully the client’s opinion of why they are coming to therapy. Overall, the face validity of this measure is also considered high because individuals reported on their own presenting problem.



### ***Independent Variable***

Physical health was operationalized by the Health-Related Quality of Life Measure (“HRQOL-4”), which is a functional health assessment developed by the Center for Disease Control and Prevention (“CDC;” *Health-Related Quality-of-Life Measures United States, 1993*, n.d.). The HRQOL-4 uses participants’ reports of their own experience to measure their health. Measuring physical health by self-report provides a more holistic picture than measures such as Body Mass Index (“BMI”), which is commonly used to categorize individuals by their height and weight (Doll et al., 2000).

The HRQOL-4 was given every four sessions. The CDC’s “Healthy Days” measure is the umbrella assessment, composed of the HRQOL-4 plus ten supplementary items (Barile et al., 2016). The HRQOL-4 includes self-reported overall health on a Likert scale of 1 (“Excellent”) to 5 (“Poor”) and how much of a limitation physical and mental health put on the person’s ability to conduct daily activities, measured by number of “not good” days per month (*Healthy Days Core Module, 2018*). Because items in the HRQOL-4 are scored differently, recent research notes that it is difficult to create a standardized, easily interpreted score (Dumas et al., 2020). To minimize this complication, only the questions measuring unhealthy days will be used in this study. One item measures the number of days over the past month in which the client felt limited in their daily activities due to physical health; the other measures the number of days limited by mental health (*Healthy Days Core Module, 2018*). The sum of the scores reported for these two questions creates a total number of unhealthy days in that month. The model was run using only the physical health item, only the mental health item, and both physical and mental health items combined. There was no significant difference in results between the three variations of the model. When individuals feel physically ill, mental health can often take a toll. Conversely, poor

mental health days can be accompanied by physical symptoms. For thoroughness, the model combining physical and mental health days was used for this analysis.

Official scoring guidelines state that possible values range from zero to 30 instead of zero to 60. In other words, whether a client marks 30 physically unhealthy and 30 mentally unhealthy days or 15 of each type of day, they receive the maximum score of 30. On the HRQOL-4 Unhealthy Days subscale, scores may range from 0 to 30, with higher scores reflecting more health-related limitations on daily functioning (*Healthy Days Core Module*, 2018).

The HRQOL-4 has established reliability and validity. Test-retest reliability was rated “moderate to excellent,” decreasing in the case of long periods between assessments or participants of more advanced age. The self-reported health item showed excellent retest reliability at 0.75 (Andresen et al., 2003). Internal reliability is another strength of the full questionnaire (Kobau et al., 2004).

Since its introduction in the 1990s, several studies have deemed the content and construct validity of the Healthy Days measure, which includes the HRQOL-4, to be good (Hennessy et al., 1994). Based on the reliability and validity studied over two decades, the HRQOL-4 has proven to be an appropriate measure for the purposes of this study.

### ***Mediating Variable***

Emotional regulation was assessed using the 18-item Difficulties in Emotion Regulation Scale – Short Form (DERS-SF; Kaufman et al., 2016). The measure includes six subscales, each with three items related to a unique aspect of emotional regulation. Participants report the frequency at which they experience each item on a Likert-type Scale from 1 (almost never) to 5 (almost always). Higher scores reflect increased difficulty with emotional regulation. The DERS-SF has high reliability and validity, both in comparison to the longer 36-item version and as an

independent measure of emotional regulation (Kaufman et al., 2016). For this article, the total score, rather than subscales, was used, and Cronbach's alpha for the DERS-SF overall score was .86 (Kaufman et al., 2016). Total scores on the DERS-SF can range from 18 to 90, with higher scores indicating greater difficulty with emotional regulation.

### **Analysis**

The analyses were conducted using Stata/SE 16.0 statistical analysis software. An Actor Partner Interdependence Model (APIM) was fit to the data to address the first 4 research questions. For the research questions testing mediation, a mediator was added to the APIM (Ledermann et al., 2011).

An attrition analysis was conducted prior to answering the research questions to determine any patterns in missing data. First, we tested to see if there was an attrition bias for demographic variables of race and income level. The results showed no significant relationship between length of time in therapy and reported race or income. Next, we tested to see if there was an attrition bias for health, the independent variable. There was no significant relationship between health and emotional regulation or presenting problem progress and length of time in therapy. Based on the attrition analysis, data are missing at random. For data missing at random, full information maximum likelihood is the preferred method of estimation (Schafer & Graham, 2002).

### **Results**

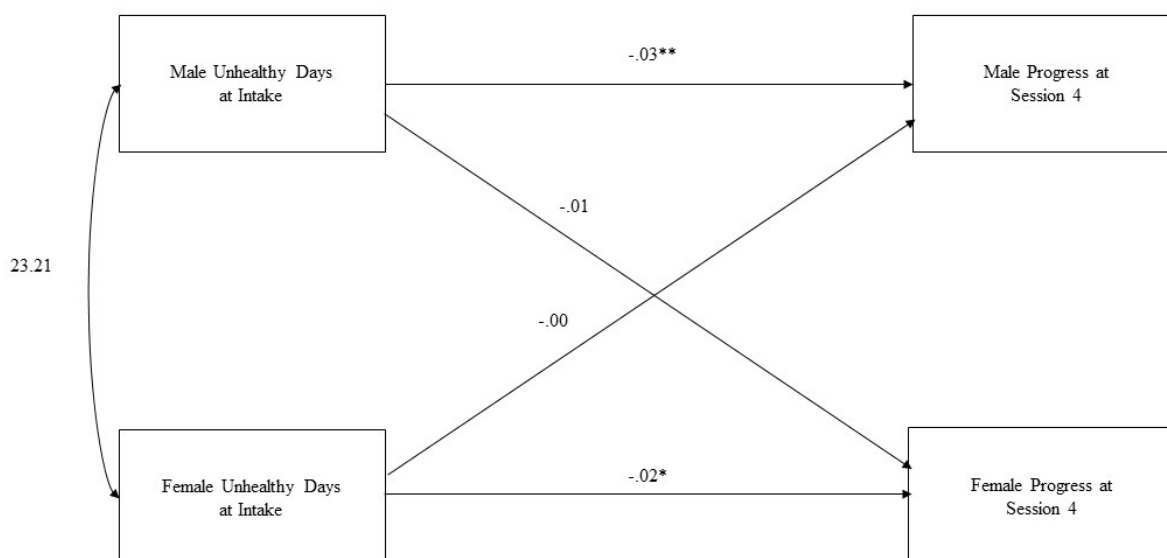
On average, males reported fewer unhealthy days on the HRQOL-4 ( $M = 11.7$ ,  $SD = 10.4$ ) than females ( $M = 15.3$ ,  $SD = 10.5$ ). The DERS-SF showed minimal differences by gender in emotional regulation ( $M_{male} = 40.5$ ;  $M_{female} = 40.9$ ). In terms of the PPPQ, the average scores at session 4 were also very similar ( $M_{male} = .83$ ;  $M_{female} = .85$ ), indicating some improvement for

all clients, but the male participants' scores were more variable than the females' scores ( $SD_{male} = 1.03$ ;  $SD_{female} = .85$ ).

The results of the base model with no mediator are shown in Table 1 and answer research questions 1 through 4. For a view of the base model with beta coefficients, see Figure 1.

Figure 1

*Base Model of Research Questions 1-4 with the Beta Coefficient for Each Regression*



Note: \* $p \leq .05$ ; \*\* $p = .01$

### Research Question 1

Research question 1 asked about the influence of male health at intake on male presenting problem progress at session 4. Results show that health is significantly related to presenting problem progress for males, when controlling for the influence of their female partners ( $b = -.03$ ,  $p = .01$ ). While significant, this is not a large effect. For every additional unhealthy day reported by males, progress declines by only .03 units. With an effect of this size, in order to see one full

point of improvement in presenting problem progress, the male client would need to report 34 fewer unhealthy days than they did at intake.

### **Research Question 2**

Research question 2 asked about the influence of female health at intake on female presenting problem progress at session 4. The results indicate that health is significantly related to presenting problem progress for females, when controlling for the influence of their male partners ( $b = -.02, p = .02$ ). Again, this is a significant but small effect. For every additional unhealthy day reported by females, progress declines by only .02 units. With an effect of this size, in order to see one full point of improvement in presenting problem progress, the female client would need to report 50 fewer unhealthy days than they did at intake.

### **Research Question 3**

Research question 3 asked about the influence of male health at intake on female presenting problem progress at session 4. No significant relationship was found between male health and female progress ( $b = -.01, p = .31$ ).

### **Research Question 4**

Research question 4 asked about the influence of female health at intake on male presenting problem progress at session 4. No significant relationship was found between female health and male progress ( $b = -.00, p = .76$ ).

Table 1

*Unhealthy Days at Intake Predicting Presenting Problem Progress at Session 4*

	<i>b</i>	SE	<i>z</i>	<i>p</i> > $ z $
<b>Male Presenting Problem Progress</b>				
Male Unhealthy Days	-.03	.01	-2.55	.01**
Female Unhealthy Days	-.00	.01	-.31	.76
Constant	1.19	.20	6.04	.00**
<b>Female Presenting Problem Progress</b>				
Male Unhealthy Days	-.01	.01	-1.02	.31
Female Unhealthy Days	-.02	.01	-2.34	.02*
Constant	1.26	.16	7.87	.00**

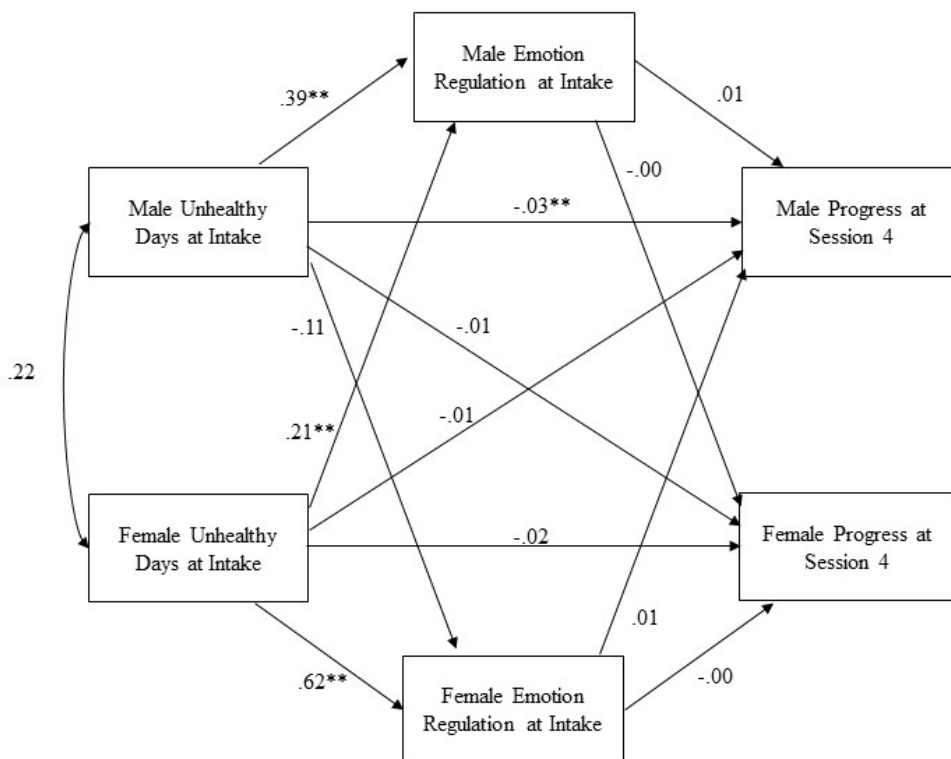
Note: \* $p \leq .05$ ; \*\* $p = .01$

Thus, the APIM shows significant and small actor effects with no significant partner effects. Next, a mediated APIM was fit to the data to address research questions 5 through 10. The mediated model assessed for indirect effects of emotional regulation on changes in presenting problem progress; no significant indirect or total effects were found. However, there were some interesting direct effects involving emotional regulation.

The results of the mediated model are shown in Table 2 and answer research questions 5 through 10. For a view of the mediated model with beta coefficients, see Figure 2.

Figure 2

*Mediated Model Showing Research Questions 1-10 with the Beta Coefficient for Each Regression*



Note:  $*p \leq .05$ ;  $**p = .01$

### Research Question 5

Research question 5 asked about the mediating influence of male emotional regulation on the relationship between male health at intake and male presenting problem progress at session 4. Results showed no total effect; in other words, there is not a mediating relationship here. However, a direct effect was found between male health and emotional regulation. For every

additional unhealthy day reported by males, their own emotional regulation decreased by .39 units ( $p < .01$ ). This finding indicates that health is significantly related to emotional regulation for males, when controlling for the influence of their female partners ( $b = .39, p < .01$ ). This is a larger effect than what was seen between any two variables in the base model (see Table 1). With an effect of this size, in order to see one point of improvement in emotional regulation, the client would need to report only 3 fewer unhealthy days than they did at intake.

### **Research Question 6**

Research question 6 asked about the mediating influence of female emotional regulation on the relationship between female health at intake and female presenting problem progress at session 4. No total effects were found for this research question. However, there was a direct effect between female health and female emotional regulation. For every additional unhealthy day reported by females, their own emotional regulation worsened by .62 units ( $p < .01$ ). This is the largest effect seen thus far. For every two days removed from the Unhealthy Days score for females, their own emotional regulation improves by over one point (1.24 points).

### **Research Question 7**

Research question 7 asked about the mediating influence of male emotional regulation on the relationship between male health at intake and female presenting problem progress at session 4. Results showed no total effect, or no indirect relationship. There were also no additional direct effects.

### **Research Question 8**

Research question 8 asked about the mediating influence of male emotional regulation on the relationship between female health at intake and male presenting problem progress at session 4. No total effects were found. There was a direct effect between female health and male



emotional regulation ( $b = .21, p = .01$ ). For every additional unhealthy day reported by females, male emotional regulation decreased by .21 units. The effect size suggests that male emotional regulation will improve by 1 point for every 5 fewer unhealthy days the female partner reports.

### Research Question 9

Research question 9 asked about the mediating influence of female emotional regulation on the relationship between female health at intake and male presenting problem progress at session 4. Results showed no total effect, or no mediating relationship. There were also no direct effects that have not already been described.

### Research Question 10

Research question ten asked about the mediating influence of female emotional regulation on the relationship between male health at intake and female presenting problem progress at session 4. Results showed no total effect, or no mediating relationship. There were also no direct effects.

Table 2

*Health at Intake Predicting Presenting Problem Progress at Session 4, Mediated by Emotional Regulation at Intake*

	$b$	SE	$z$	$p >  z $
<b>Male Emotional Regulation</b>				
Male Unhealthy Days	.39	.09	4.55	.00**
Female Unhealthy Days	.21	.08	2.56	.01**
Constant	32.62	1.70	19.18	.00**

Male Presenting Problem Progress

Male Emotional Regulation	.01	.01	.77	.44
Female Emotional Regulation	.01	.01	.69	.49
Male Unhealthy Days	-.03	.01	-2.48	.01**
Female Unhealthy Days	-.01	.01	-.78	.44
Constant	.72	.41	1.76	.08
Female Emotional Regulation				
Male Unhealthy Days	-.11	.08	-1.29	.20
Female Unhealthy Days	.62	.09	6.95	.00**
Constant	32.62	1.38	23.61	.00**
Female Presenting Problem Progress				
Male Emotional Regulation	-.00	.01	-.40	.69
Female Emotional Regulation	-.00	.01	-.31	.76
Male Unhealthy Days	-.01	.01	-.85	.40
Female Unhealthy Days	-.02	.01	-1.85	.06
Constant	1.45	.35	4.10	.00**

---

Note: \* $p \leq .05$ ; \*\* $p = .01$

### Discussion

This study demonstrated that the number of unhealthy days a couple therapy client experiences in one month is associated with the progress they report in their presenting problems within the study sample. In other words, healthier people in couple therapy may report higher levels of progress in their self-reported presenting problems at session four than those who are less healthy. While this finding was present for both male and female clients, the effects were

very small. Further, health was shown only to predict an individual's own progress, with no significant effect on their partner's progress. The connection between actors but a lack of connection between partners' health and self-reported progress was unexpected. The Window of Tolerance theory states that an individual's window of tolerance, which is shaped by their health behaviors, is the area in which they can function optimally by giving and receiving feedback and enacting change (Corrigan et al., 2011; Siegel, 1999). Notwithstanding, Siegel has also stated, that in relationships, one's window of tolerance may influence that of others. Thus, one of the research questions in this study was whether partners' windows of tolerance would interact, thereby influencing each other's experience of change in therapy. There was no evidence of such an interaction in this study. The resulting incongruence with the Window of Tolerance framework suggests that the theory may not always be predictive. The results could also be due to issues with the construct validity of the PPPQ, which will be discussed later.

The addition of emotional regulation as a mediator allowed for the exploration of indirect effects related to improving presenting problem progress and for a fuller representation of the idea of window of tolerance. No evidence was found to suggest that emotional regulation mediates the relationship between client health and self-reported presenting problem progress. The theory behind the research questions is that healthier people are likely to be more adept at regulating their emotions, and this should expand their window of tolerance to promote increased change in therapy; further, window of tolerances interact in intimate relationships (Briguglio et al., 2020; Corrigan et al., 2011; Siegel, 1999). While the results partially supported these concepts; health and emotional regulation were significantly related, the model did not support a relationship between emotional regulation and progress in presenting problem.

A possible reason for the lack of significant findings may be the broad nature of the presenting problem progress variable. The list of presenting problems from which clients could choose ranged from “just wanted to talk to someone” to “abuse or trauma” to “depression/mood,” all of which may be differentially related to health and different levels of emotional regulation. Further, conventional therapeutic knowledge is that change in some problems, like abuse or trauma can take much longer and show slower progress. Additionally, the scoring of the PPPQ may also have impacted the results. While an average score across three presenting problems provides a summary of progress, it relies upon the assumption that all three problems are equal in magnitude and potential for improvement over the first four weeks of therapy.

For some presenting problems, emotional regulation is more important in treatment than others. For example, emotional regulation has been shown to be particularly challenging for patients with posttraumatic stress disorder (PTSD) and all the more crucial to improve over the course of treatment (Frewen & Lanius, 2006; Karatzias et al., 2018). Emotional regulation may be a mediator between client health and progress in cases of PTSD, for example, but not a mediator for other presenting problems.

Finally, this study showed, to a larger extent, that a person’s health is significantly associated with their own emotional regulation. In other words, people in this sample who were more physically and mentally healthy were able to regulate their emotions more effectively. This finding highlights the importance of both physical and mental health in the treatment of various presenting problems in therapy. Since health appears to have a direct relationship with emotional regulation and presenting problem progress, we need to better understand the relationship

between emotional regulation and presenting problem progress or other couple therapy outcomes.

### **Clinical Implications**

The results showed that clients needed to reduce their number of unhealthy days by anywhere from 34 to 50 days in order to see one point of improvement in presenting problem progress. Not only is this unlikely to happen before other factors elicits a change, but it is also outside the range of the health measure used in this study. Within the parameters of the HRQOL Unhealthy Days measure, with scores ranging from zero to 30, and its official scoring guidelines, it is not possible for health to change enough to predict one whole point of difference in presenting problem progress. We conclude that although health was significantly related to presenting problem progress, the effect size from this study is so small that other factors with a larger effect size are likely to be more predictive of each client's progress. Future research could integrate different measures of health into this model and compare the degrees to which health may predict progress in therapy.

Clinicians should, depending on their intervention model, pay attention to the relationship between health and emotional regulation. In many therapy models, client health is an important element of treatment. For example, polyvagal theory holds that “physiological state limits the range of behavior and psychological experience,” including emotional expression (Porges, 2009, p. 90). In addition, collaborative care providers treating mental health disorders and physical comorbidities see more improvement when both mental and physical health are addressed (Ee et al., 2020). Treatment approaches such as cognitive behavioral therapy can help restructure individuals' biases and beliefs, empowering them to take more control of and improve their health to thereby also improve their emotional regulation (Diamond & Waite, 2021).

Becoming able to regulate one's emotions may yet be important to therapeutic progress. Based on the findings of this study, clients who are less healthy may experience more difficulty regulating their emotions and, ostensibly, improving their quality of life through therapy. The significant relationship between female health and male emotional regulation is important here because it is evidence that an individual's health can also affect aspects of their partner's well-being. Based on these findings, therapists are encouraged to promote health within one of the main treatment goals for individuals and couples. Therapists should specifically encourage their clients to improve their physical health to help improve their ability to emotionally regulate, through means such as mindful eating, regular exercise, improving sleep, and taking medications as prescribed by a medical professional.

### **Limitations**

This study is limited by the sample characteristics, particularly age, race, and income level, which were not distributed in a way that reflects the population of the United States. People of different ages, income levels, and ethnic backgrounds, may respond to health limitations differently, especially due to discrepancies in access to healthcare and differences in overall health that can be predicted by minority status (Brown et al., 2000). In addition, this was a clinical sample, meaning that all of the participants were in therapy. By using a clinical sample, this study excluded people without access to or interest in receiving therapy. Since the dependent variable was specific to progress as a result of therapy, there was no way to avoid this limitation to the study's external validity. A more diverse sample could have provided more representative results to generalize to the clinical population. This study is limited by the broad and idiographic nature of the dependent variable, as well as the measure not having more-established validity and reliability. Although some significant effects were found, the findings were relatively small

which may be attributed in part to using presenting problem progress as the outcome. This study also used a self-report measure of health which included both physical and mental health. Within our dataset, there was no significant difference between the results when measuring only the physical health item versus physical and mental health combined. However, adding a more objective health measure such as blood pressure or body mass index may have yielded different results. The theory behind this study is supportive of emotional regulation as a mediator between health and progress in therapy. However, no mediating relationship was found in the analysis. The idiographic nature and low reliability of the variable for progress in therapy may help explain an undetected mediating relationship in this study, or the absence of one altogether.

### **Future Research**

The results of this study open doors to a large body of future research, ideally of a sample with more diversity in age, race, and income level. Different levels of healthcare utilization, including access to health insurance, which research suggests will vary by age, race, and income level, may shed light on differences in emotional regulation, according to this model. Additionally, these variables may moderate the relationship between health and progress in therapy at various levels and allow for a more nuanced understanding of the direct effects found in this study.

More research could be done on the relationship between health and emotional regulation, such as the magnitude of the effect of physical health on emotional regulation. The window of tolerance concept supports this idea, stating that physical health contributes to each person's ability to regulate and function in daily life (Siegel, 1999). We also suggest further exploration of emotional regulation as a mediating variable between health and progress in specific presenting problems such as posttraumatic stress disorder, in which it has been

established that emotional regulation is a significant factor in treatment. For presenting problems such as PTSD, we would expect emotional regulation to be more strongly associated with progress because of the close associations between trauma and emotion.

Additional refinement to increase validity and reliability of the PPPQ would enable more research on progress as a construct, using idiographic data. This research could address both individual and relational questions and provide insight into which variables are more closely related to progress in therapy. More research could also be done with change in presenting problem progress as a whole or using a subgroup of presenting problems such as “my own problem” or “problem with my relationship” as an outcome in and of itself.

### **Conclusion**

The purpose of this study was to determine if and how emotional regulation mediates the relationship between physical health and overall progress in couple therapy. Although no mediating relationships were found, there was evidence that healthier people may experience slightly more overall change in couple therapy. There were also some moderately strong associations between health and emotional regulation for males and females, and female health was found to predict male emotional regulation. This study affirms the importance of improving physical health alongside treatment in therapy. Future research measuring progress as an overall outcome and the magnitude of the relationship between health and emotional regulation is recommended.



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