

Forgiveness in Mental and Physical Health



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Heart, Brain And Spirit - A Holistic Approach To Modern Healthcare

Challenges to our Spirituality



States, & Nations



Ukraine



Gaza



Iran

Community Environments

❧ Conflict is present in our homes, schools, workplaces, and religious institutions and we sometimes hurt others and ourselves



Spiritual

✓
A Response



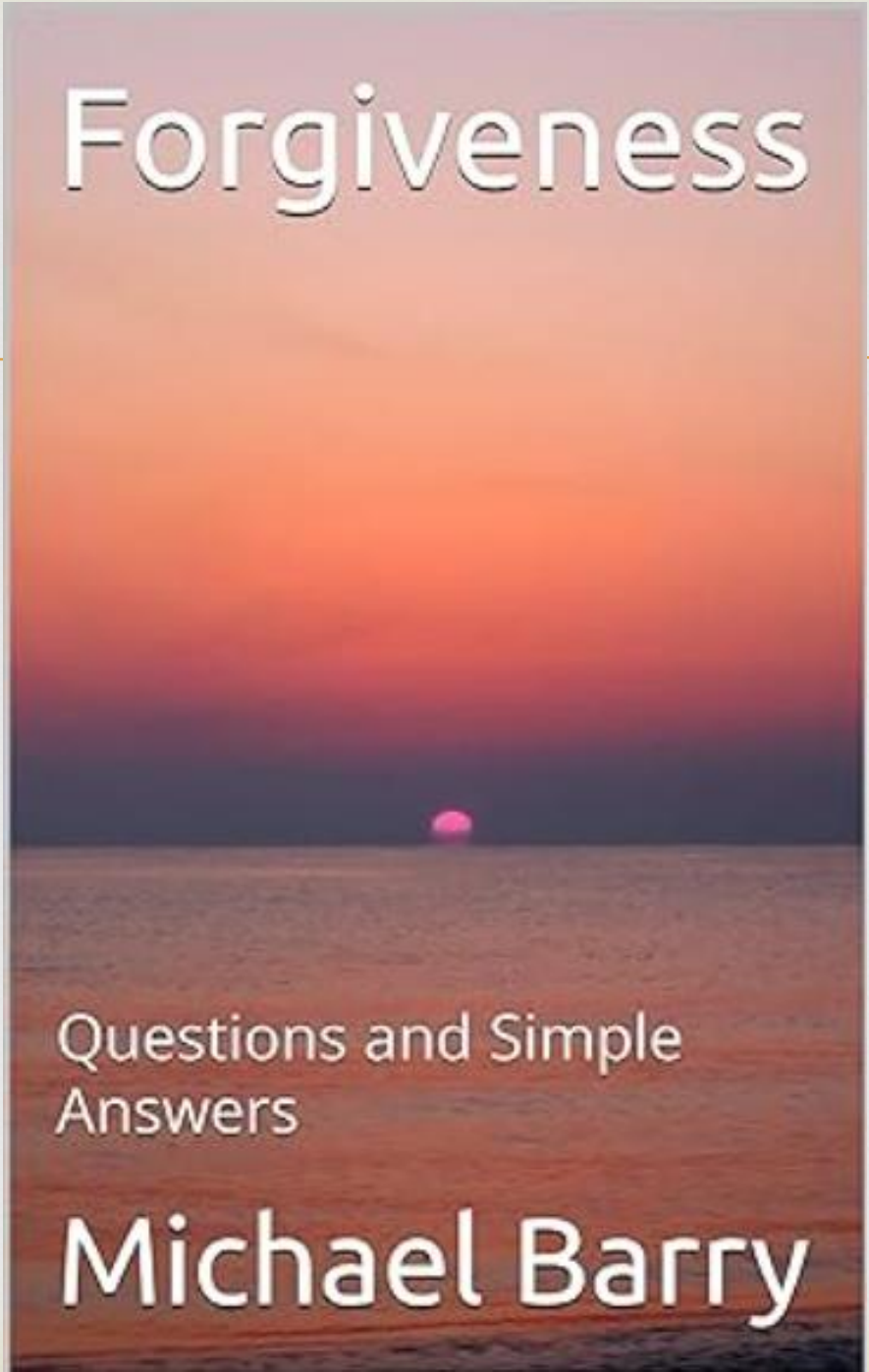
Forgiveness

Spirituality and Forgiveness



- ❧ Forgiveness as an example of lived religious and spiritual teaching shared across all major world and spiritual traditions.
- ❧ Forgiveness as an expression of one's inner spiritual life and values.

Forgiveness



Questions and Simple
Answers

Michael Barry

Defining Forgiveness

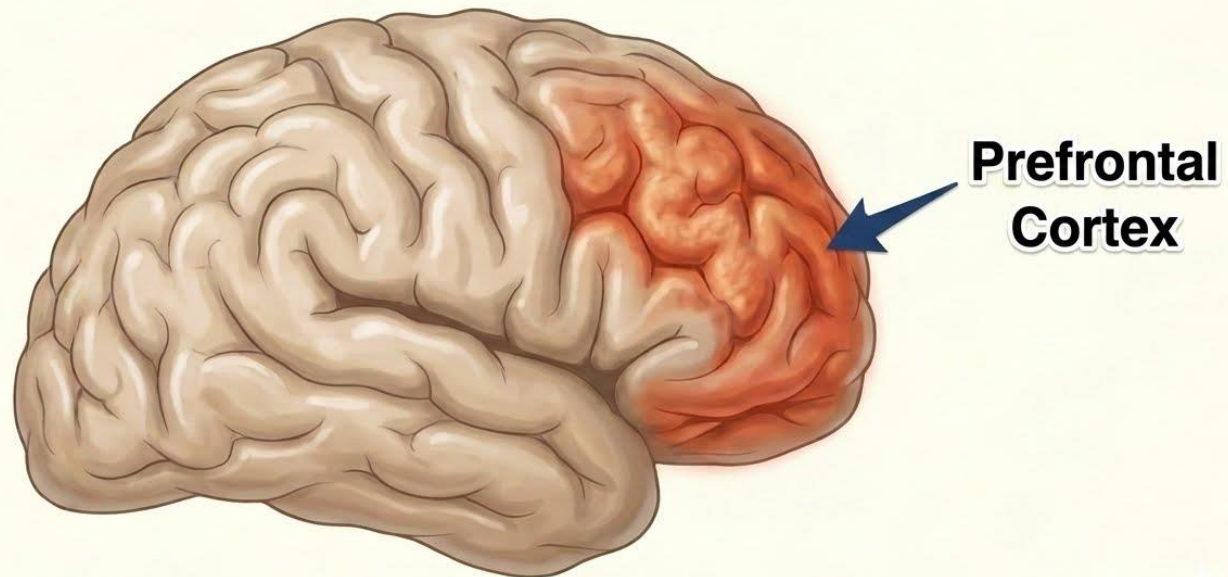


- ❧ Releasing or letting go of negative affect, beliefs, or behaviors toward an offender
- ❧ Development of positive affect, beliefs, or behaviors toward an offender
- ❧ Forgiving others versus forgiving self
- ❧ Trait versus state forgiveness
- ❧ Decisional versus emotional

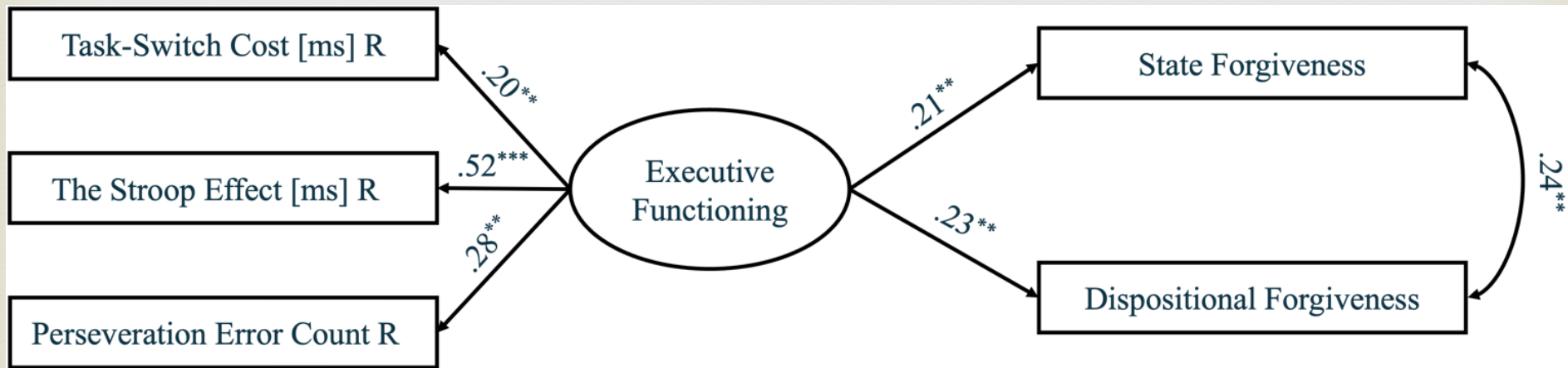
Brain



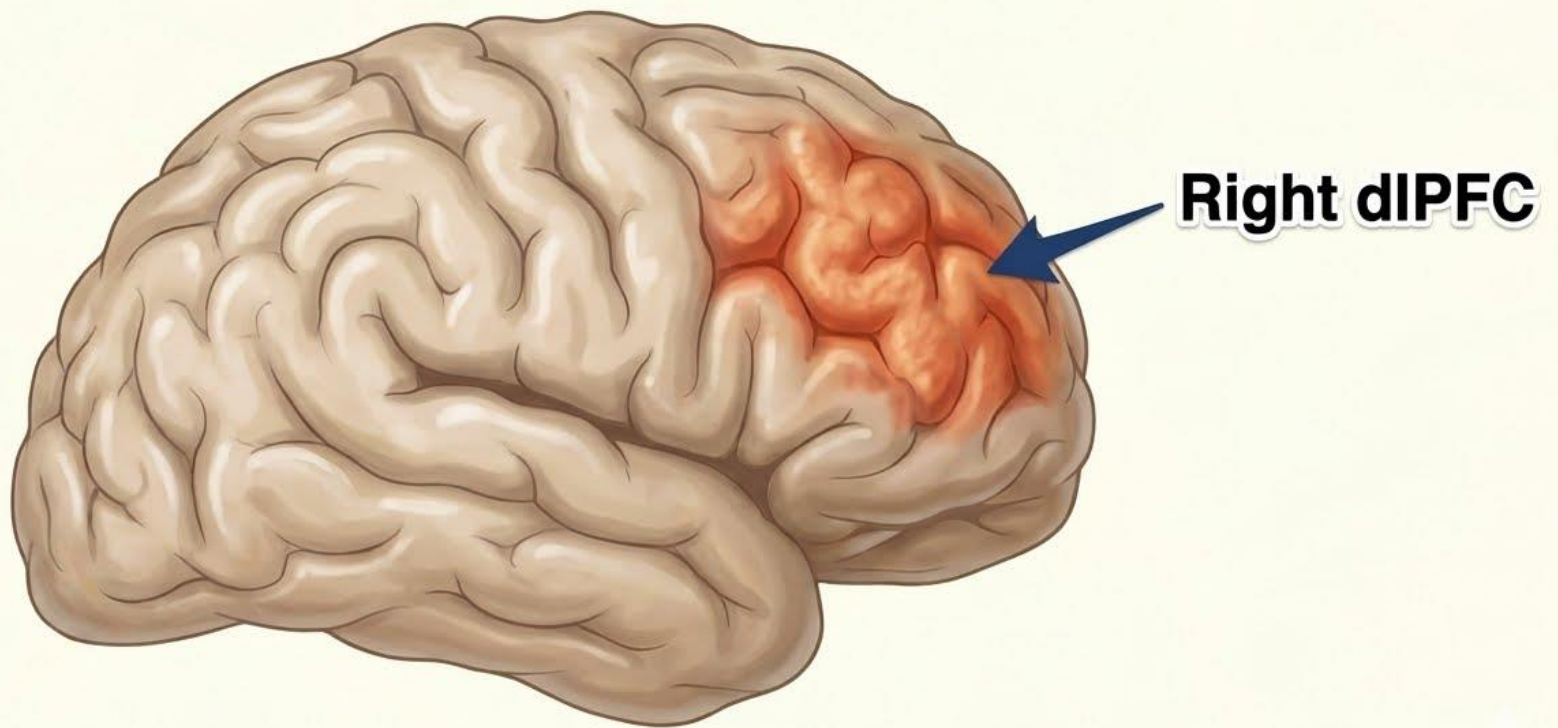
How is the spirituality and
psychology of forgiveness
embedded in our brain?



❧ Forgiveness and its origins in spirituality and high-level psychological functioning is a sophisticated process and experience making the PFC, where other sophisticated human functions are localized, a logical place to investigate



- Examining prefrontal cortex functioning and its association with forgiveness



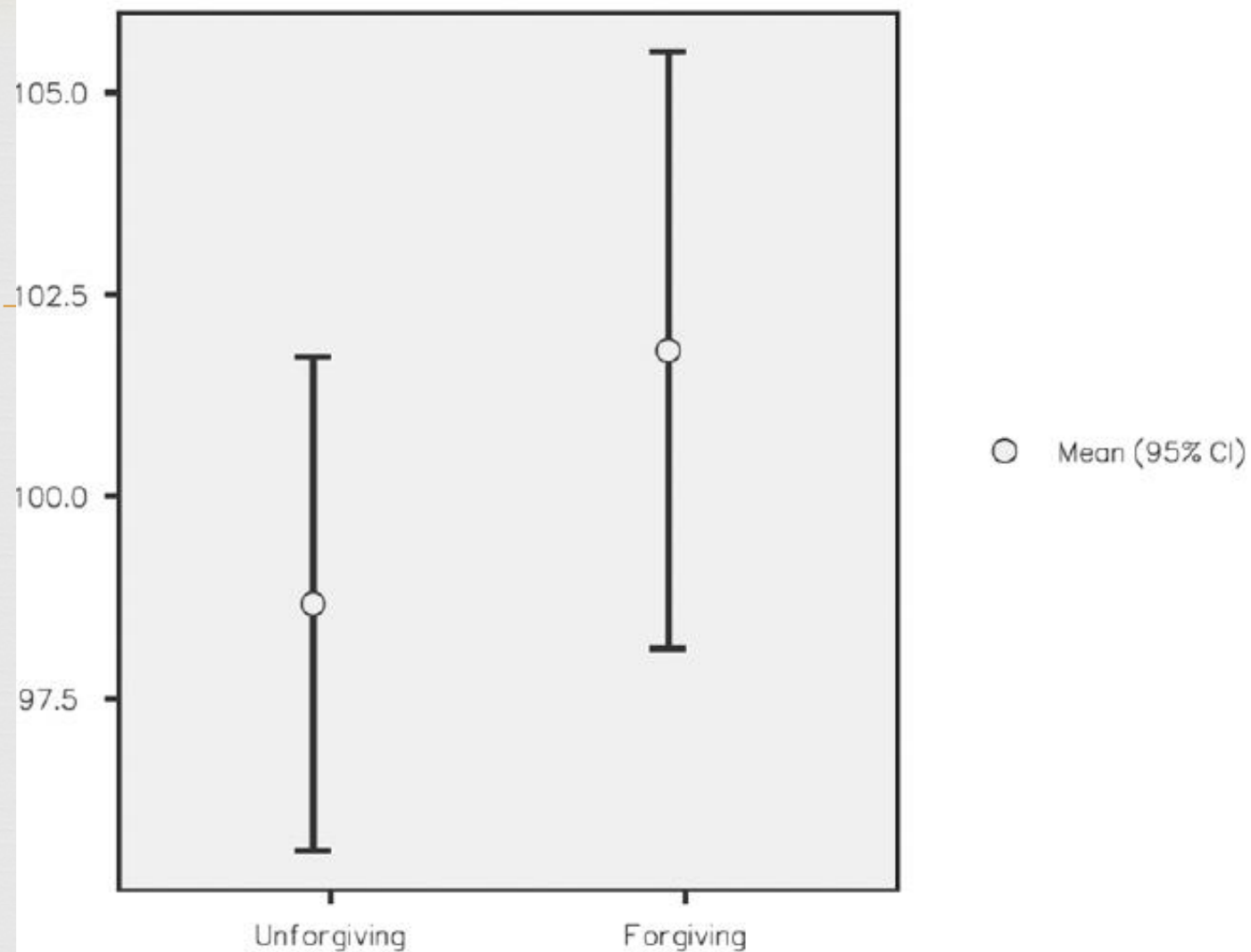
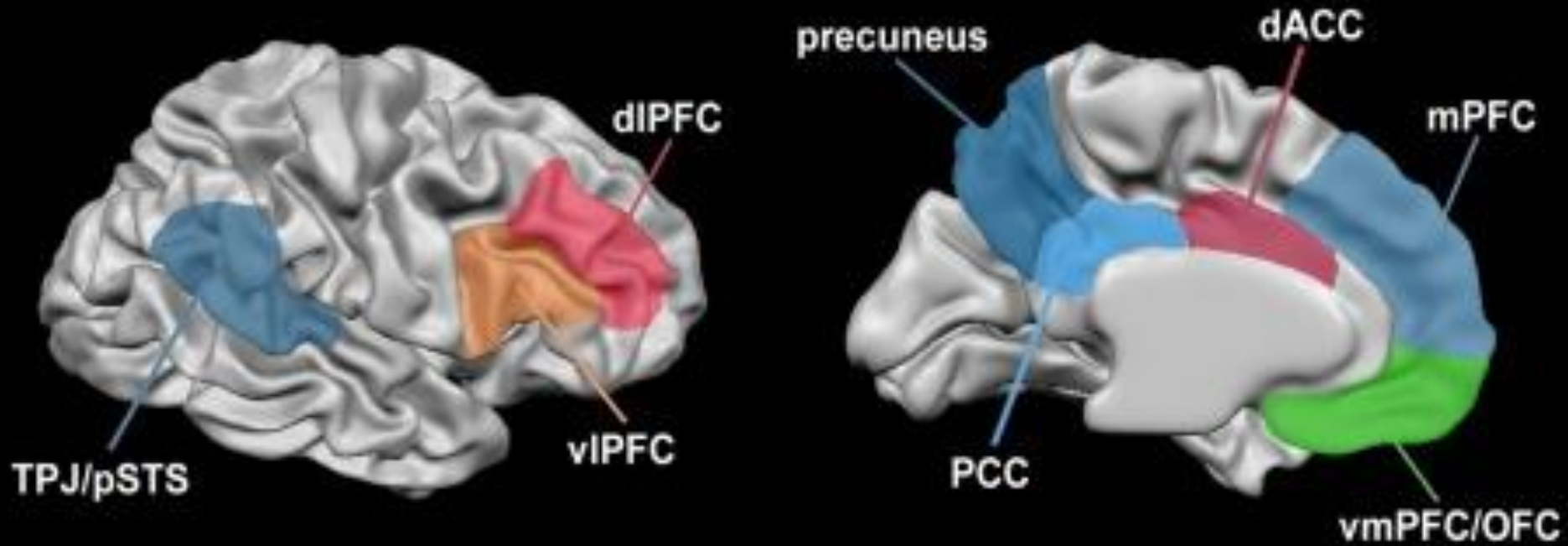


FIGURE 2.

Mean HEG Ratio in Fp2 During Forgiveness-Related Decisions in the Dictator Game

Forgiveness: **cognitive control** + perspective taking + **social valuation**

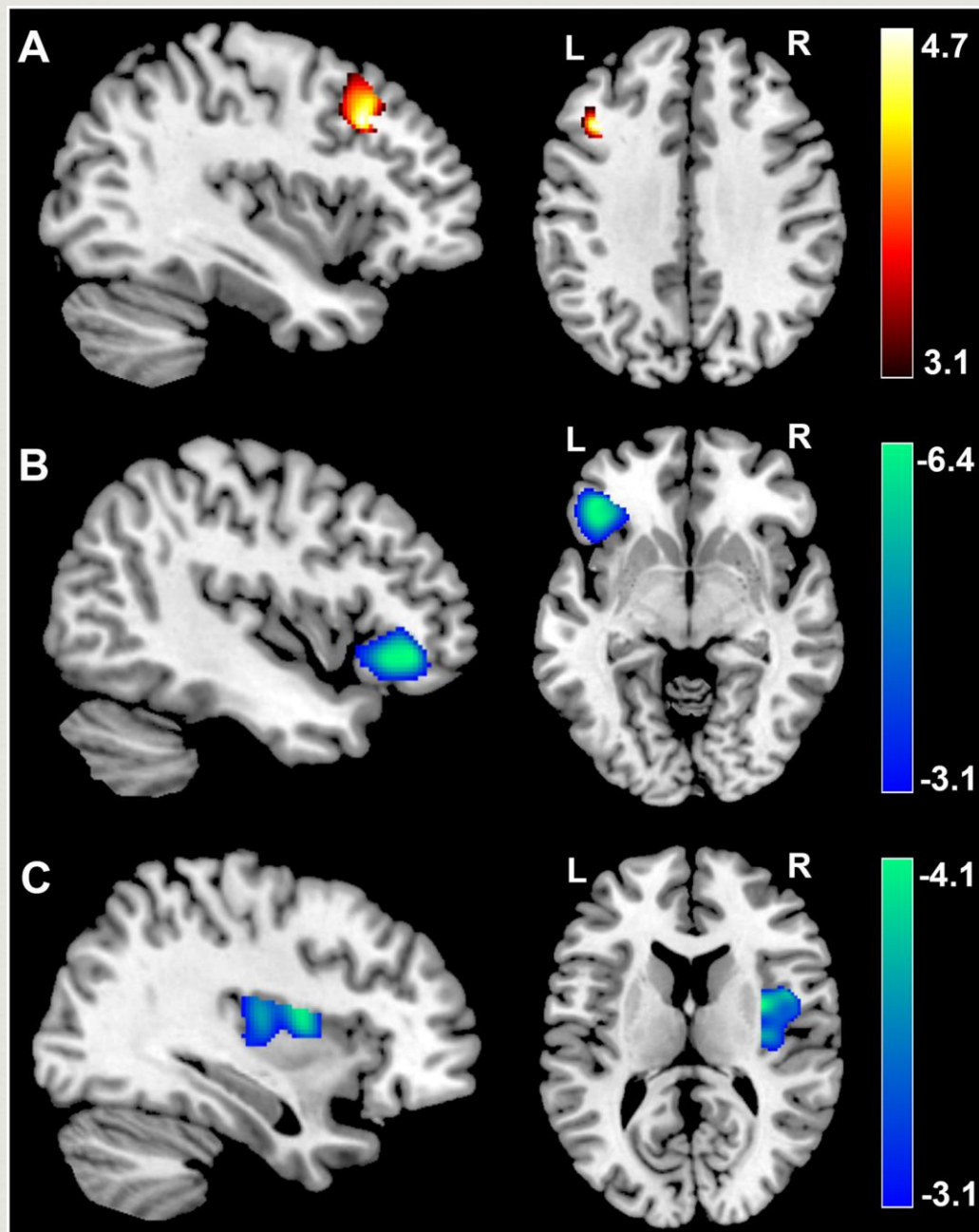


Parsing the components of forgiveness: Psychological and neural mechanisms
(Fourie, Hortensius, & Decety, 2020)

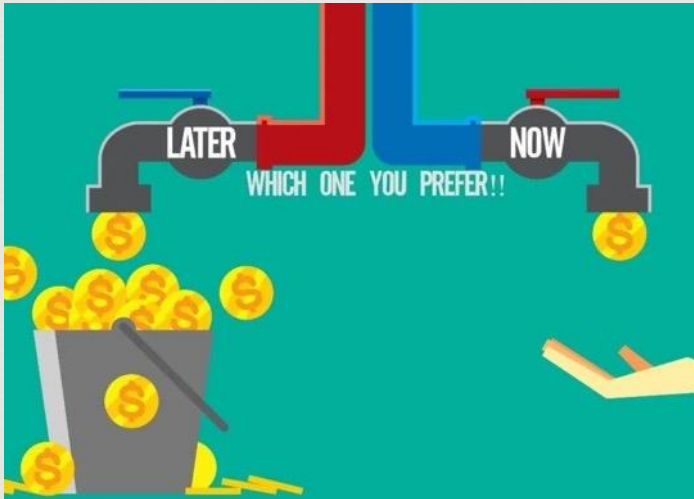
Table 1**Forgiveness Component Processes.**

Psychological Macro-Process	Description	Key Brain Areas
Cognitive control	Emotion regulation Cognitive conflict Countering response tendencies Reappraisal processes	dlPFC, vlPFC, dACC
Perspective taking	Mentalizing Cognitive empathy Mindreading Third-person perspective	TPJ, mPFC, precuneus, PCC
Social valuation	Social decision making Cost/benefit analysis Relational and socio-moral constraints Value computations	vmPFC/OFC

Dorsal anterior cingulate cortex (dACC), dorsolateral prefrontal cortex (dlPFC), medial prefrontal cortex (mPFC), orbitofrontal cortex (OFC), posterior cingulate cortex (PCC), temporoparietal junction (TPJ), ventrolateral prefrontal cortex (vlPFC), ventromedial prefrontal cortex (vmPFC).

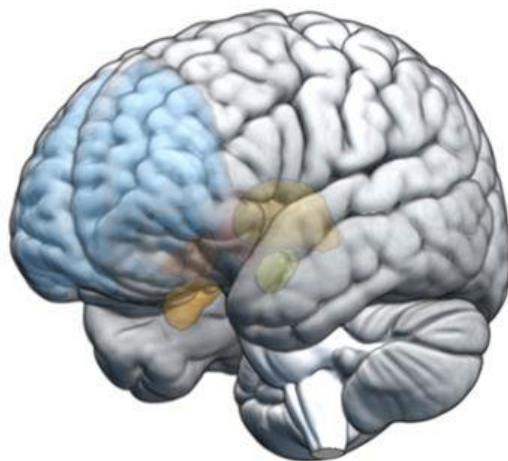


Brain Structural Bases of
Tendency to Forgive: evidence
from a young adults sample
using voxel-based
morphometry
(Li, Chen, Lu & Qiu, 2017)



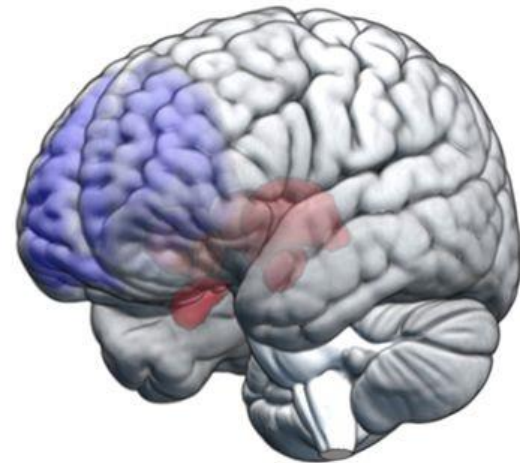
Baseline (e.g., “View”)

Here, the PFC is not especially engaged in regulating emotion and activity in affect-generating brain regions is neither enhanced nor suppressed



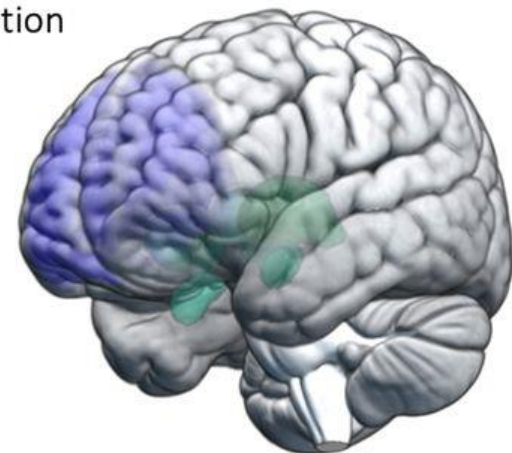
Up-regulation

PFC increases activity in brain regions involved in emotion experience

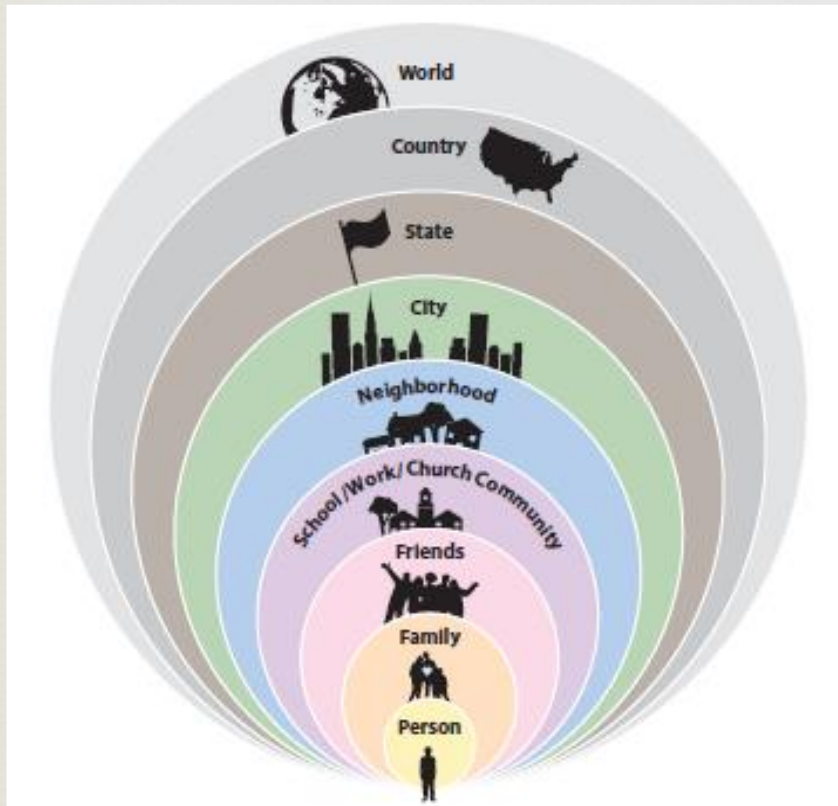


Down-regulation

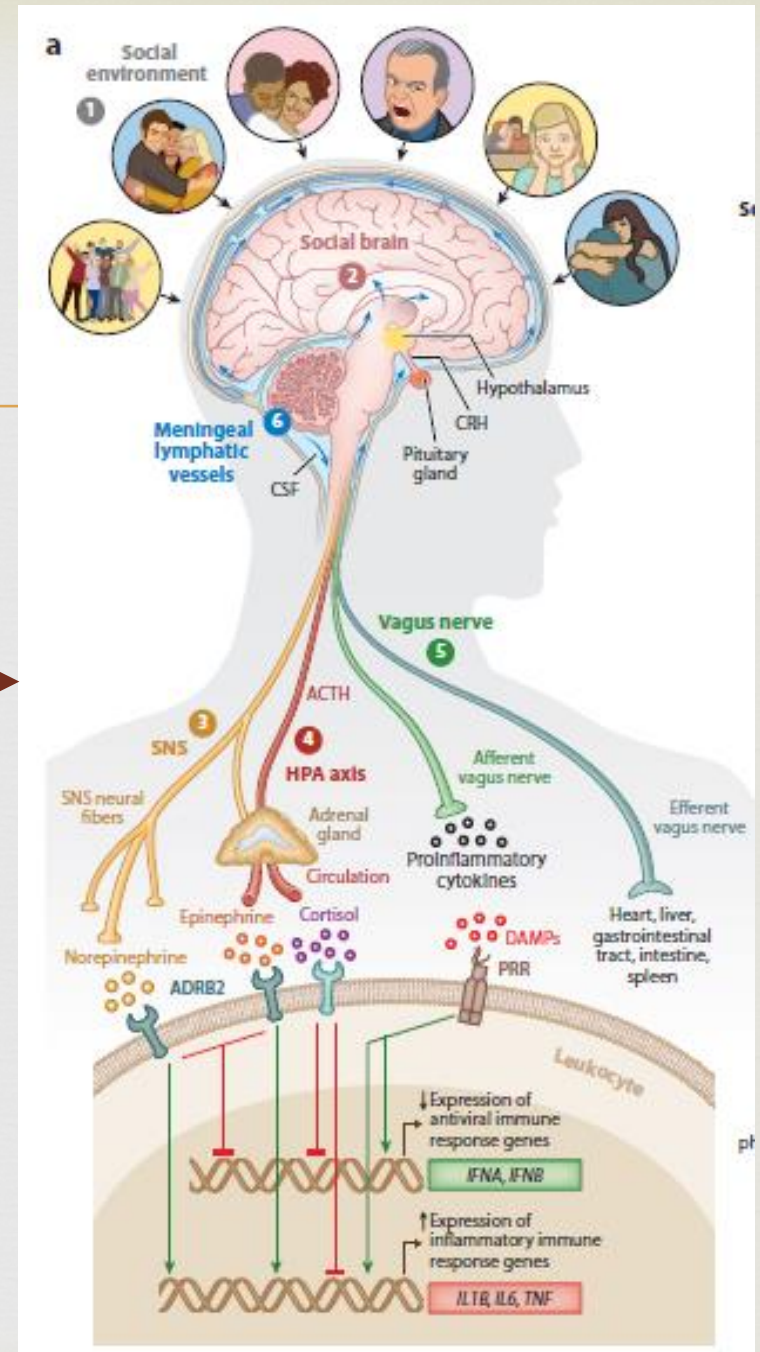
PFC decreases activity in brain regions involved in emotion experience



Social safety – developing and maintaining friendly social bonds is a fundamental organizing principle of human behavior.



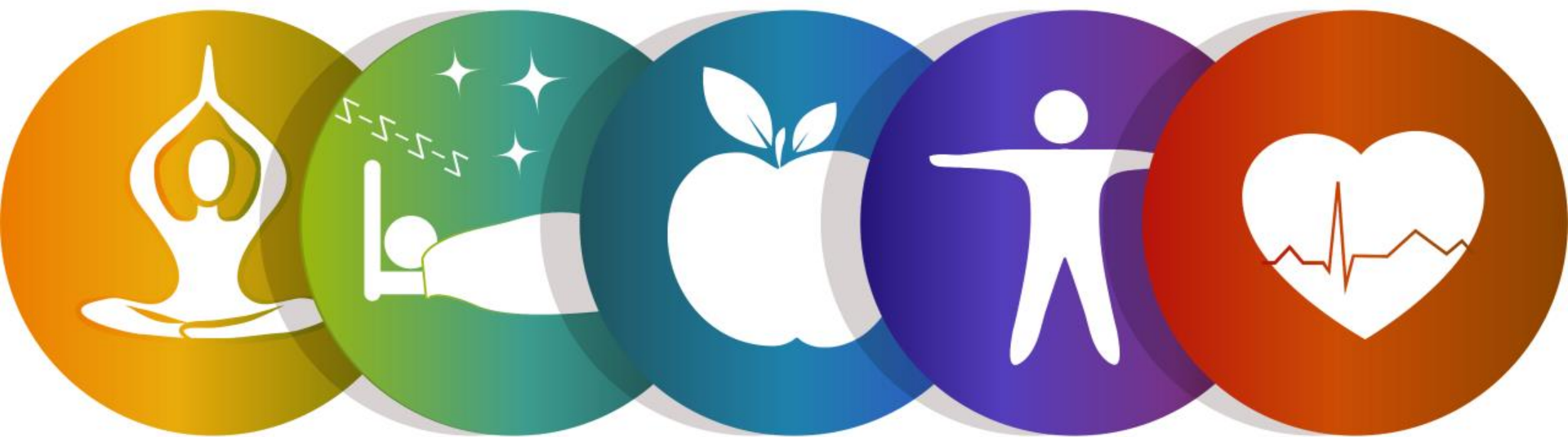
*Forgiveness can promote social safety and reduce social threat



Heart



How does the spirituality and psychology of forgiveness that is embedded in the substrates of the brain ultimately impact my heart?



Immediate Impact on HR & BP!

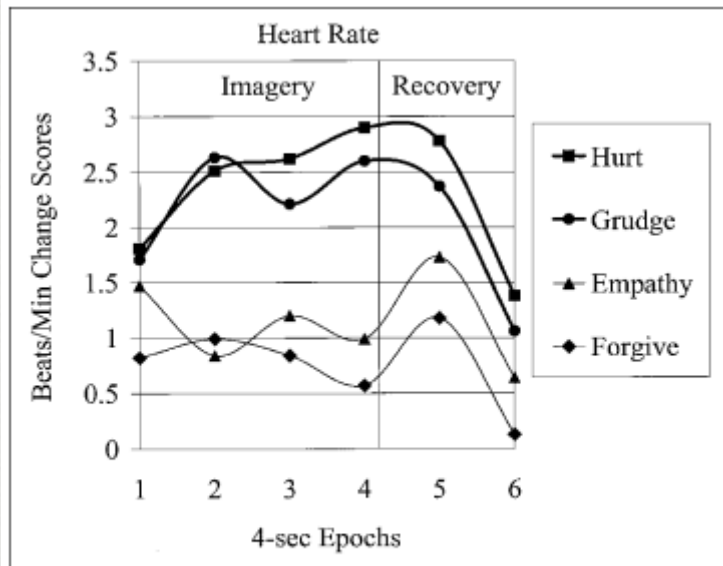


Fig. 3. Change from baseline for heart rate during the 16-s imagery and 8-s recovery periods.

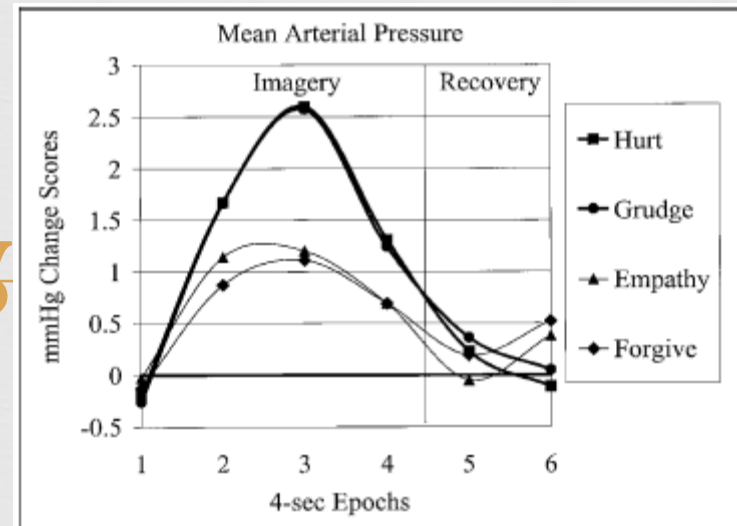


Fig. 4. Change from baseline for mean arterial pressure during the 16-s imagery and 8-s recovery periods.

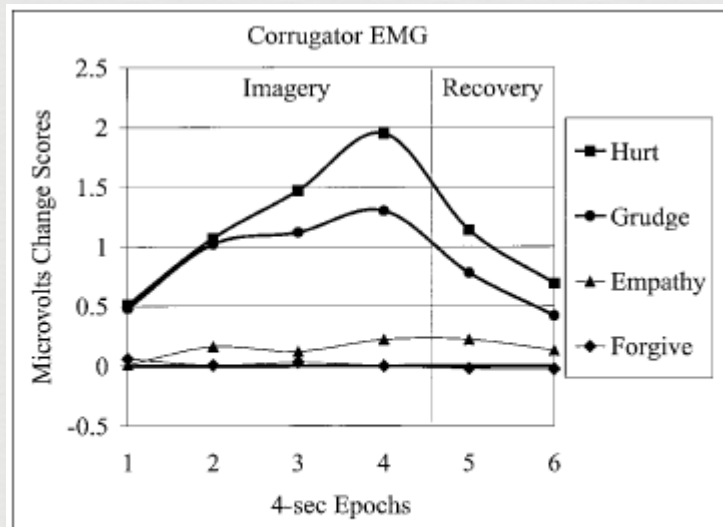


Fig. 1. Change from baseline for *corrugator* electromyograms (EMGs) during the 16-s imagery and 8-s recovery periods.

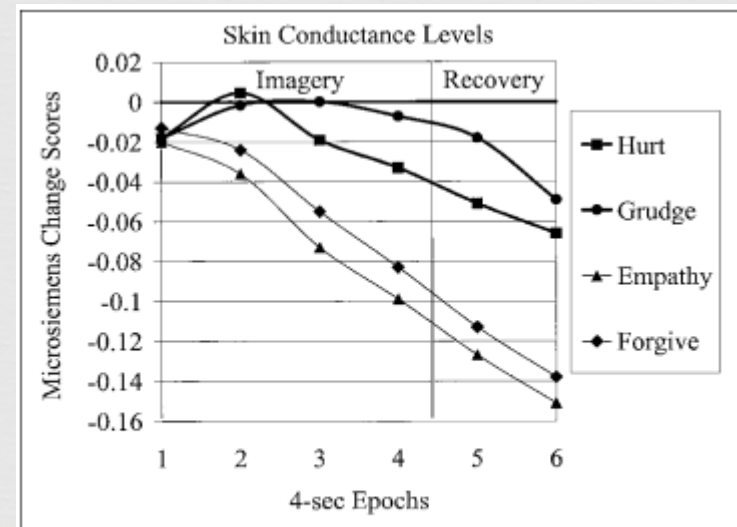
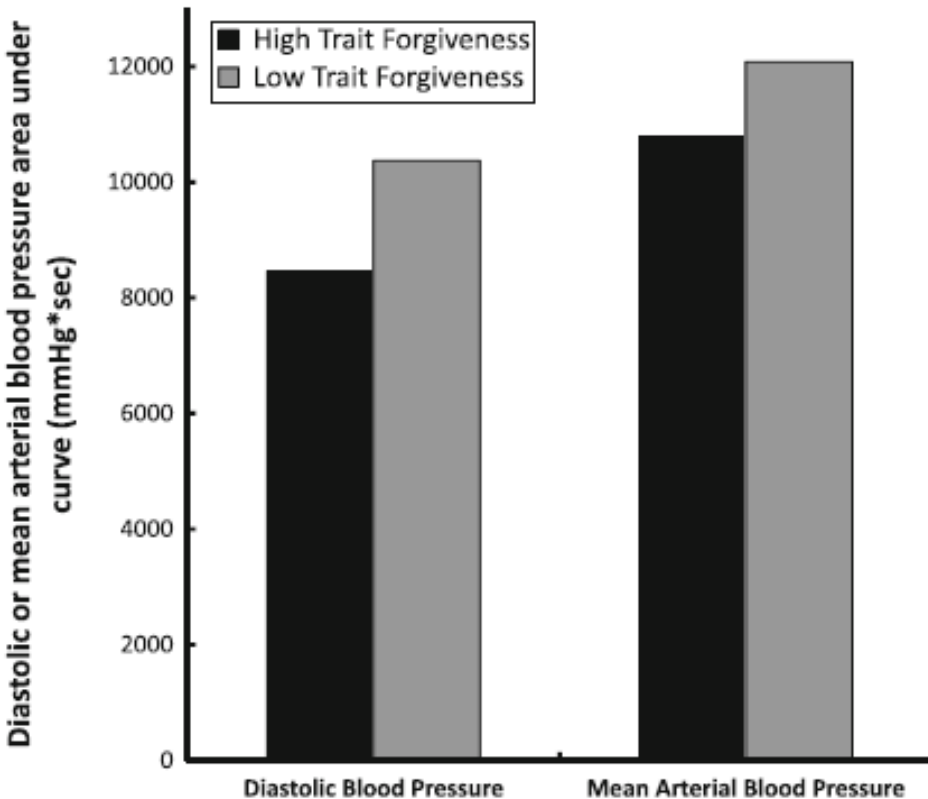


Fig. 2. Change from baseline for skin conductance level during the 16-s imagery and 8-s recovery periods.

BP Responds to Real and Imagined Offense



Significant difference between adjacent bars, at least $p < .05$

Fig. 1 Effect of forgiveness level on diastolic blood pressure and mean arterial blood pressure recovery

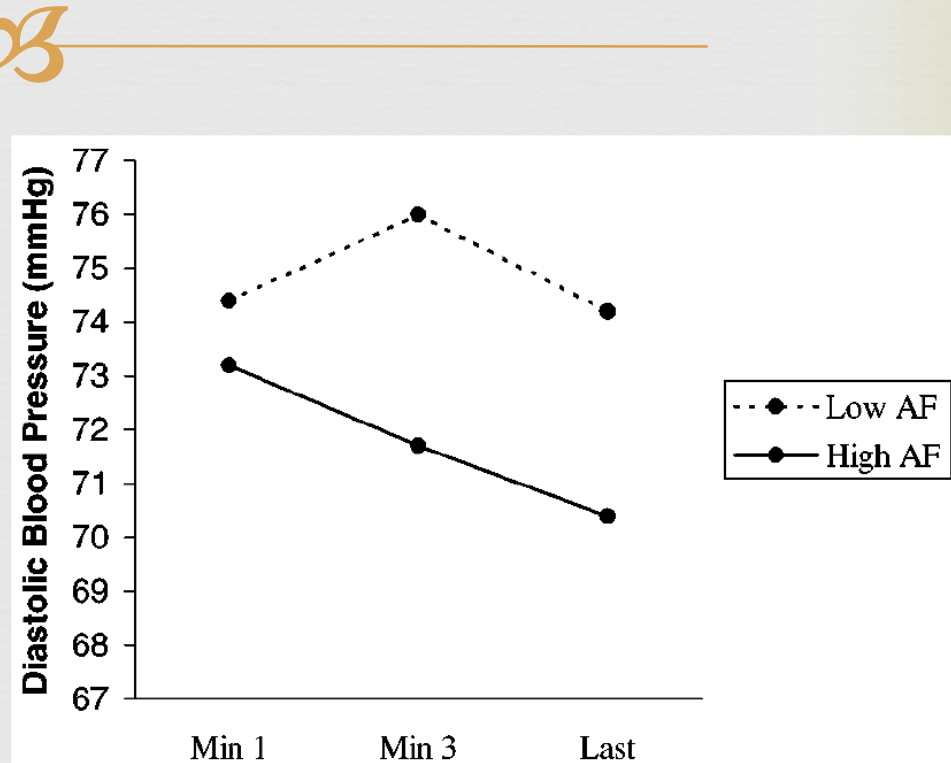


Fig. 1. Diastolic blood pressure reactivity during the parent interview.

Parent Betrayal Recall Interview

Harassment Experiment

HRV Responds to Self-Forgiveness Intervention

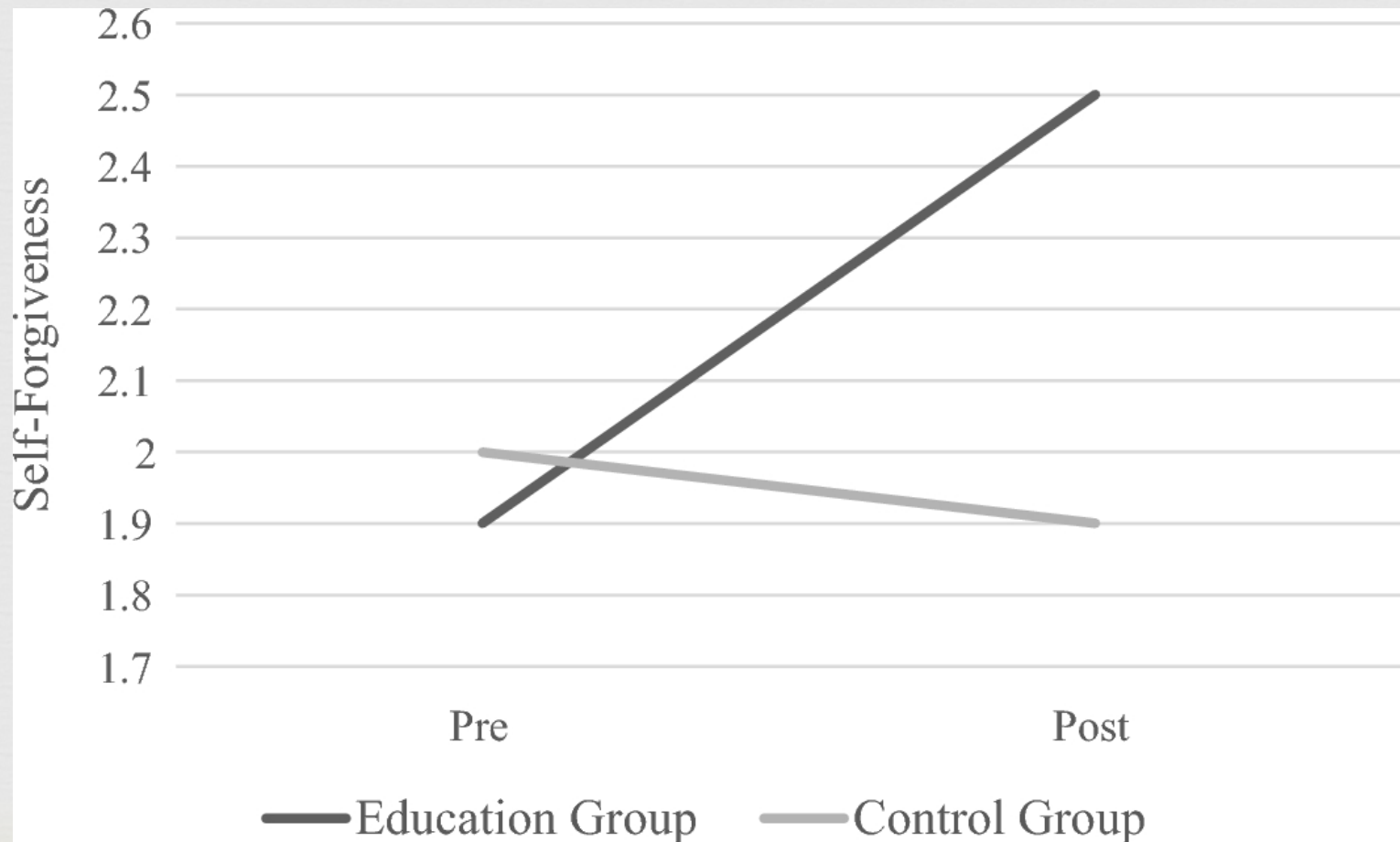


Table 2 Mean scores by time and group

Outcome	Group	Pre <i>M</i> (<i>SD</i>)	Post <i>M</i> (<i>SD</i>)	Within-subject comparison	Between-group comparison
Self-forgiveness	Intervention	1.9 (1.0)	2.5 (1.3)	Pre < post***	Pre: ns
	Control	2.0 (0.9)	1.9 (0.6)	ns	Post: education > control*
Spirituality	Intervention	1.9 (0.9)	2.3 (0.8)	Pre < post*	Pre: ns
	Control	1.8 (0.5)	1.8 (0.7)	ns	Post: education > control**
HIV status acceptance	Intervention	2.7 (1.5)	3.4 (1.3)	Pre < post**	Pre: ns
	Control	2.8 (1.5)	2.7 (1.4)	ns	Post: education > control*
Mental Well-being	Intervention	3.1 (1.8)	4.1 (1.7)	Pre < post**	Pre: ns
	Control	3.3 (1.9)	3.1 (1.6)	ns	Post: education > control*
Life satisfaction	Intervention	2.5 (1.4)	3.1 (1.4)	Pre < post***	Pre: ns
	Control	2.6 (1.3)	2.4 (1.4)	ns	Post: education > control*
Depressiveness	Intervention	1.6 (1.1)	1.1 (1.0)	Pre > post***	Pre: ns
	Control	1.7 (1.1)	1.6 (1.0)	ns	Post: education < control*
Death anxiety	Intervention	3.9 (0.9)	3.6 (0.8)	Pre > post*	Pre: ns
	Control	3.9 (1.0)	3.9 (0.9)	ns	Post: education < control*
HRV (SDNN)	Intervention	42.9 (13.3)	47.6 (13.1)	Pre < post*	Pre: ns
	Control	41.7 (13.9)	43.1 (14.1)	ns	Post: education > control*

HRV heart rate variability, *SDNN* standard deviation of the normal-to-normal intervals, *SD* standard deviation. Statistical significance: * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$; ns indicates not significant

Indictors of Unforgiveness



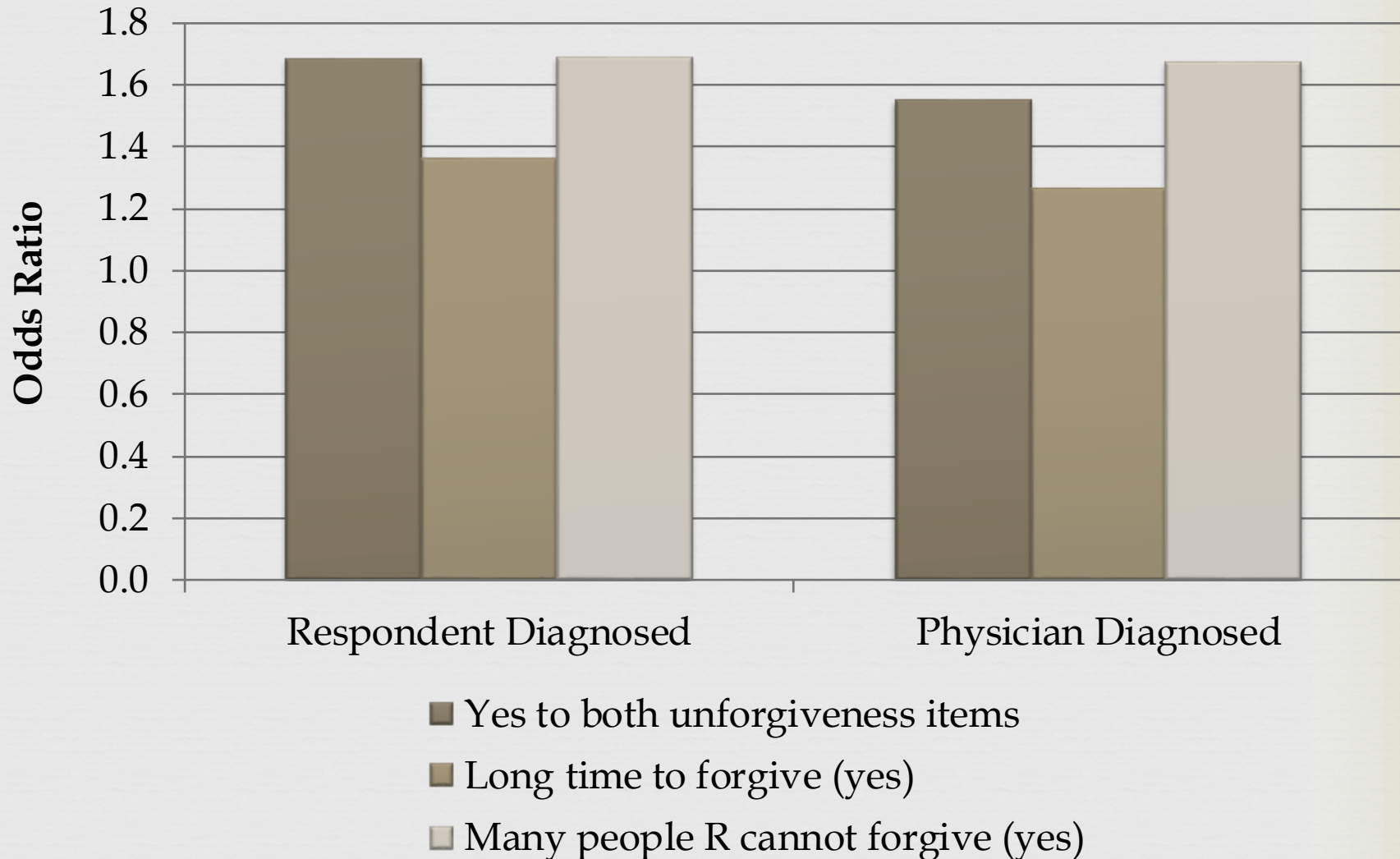
❧ It takes me a long time to forgive

❧ Yes or No

❧ There are many people that I cannot forgive

❧ Yes or No

Unforgiveness and Heart Disease

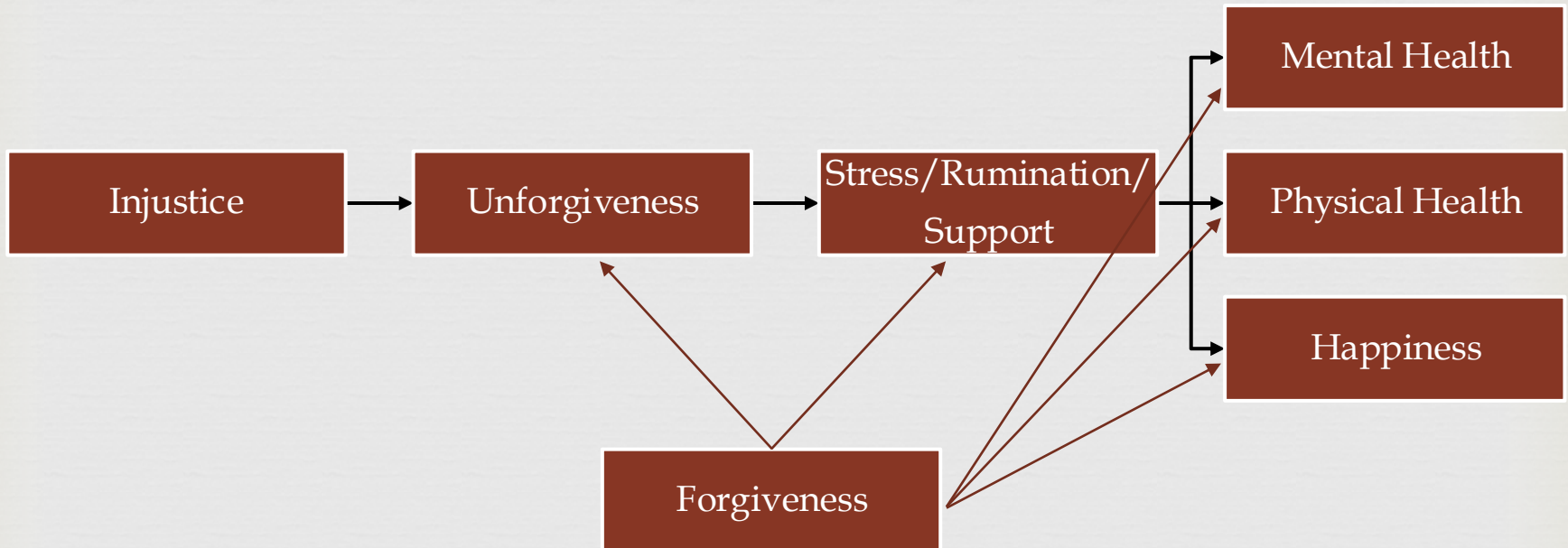


Net of sex, age, marital status, education, income, race, anger, & depression

How Does Forgiveness Connect the Heart, Brain, and Spirit



A General Model

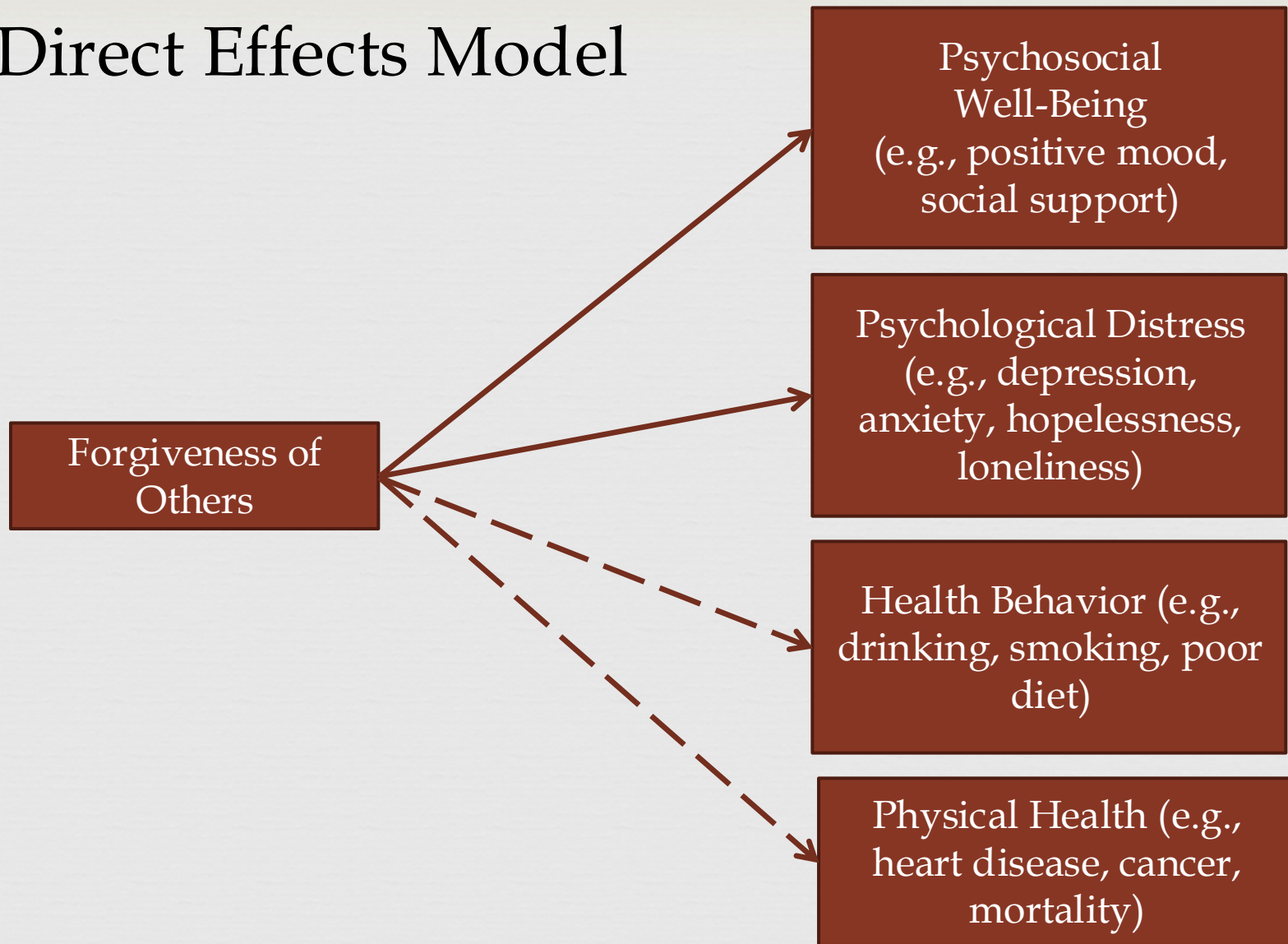


Four Specific Models



1. Direct Effects Model
2. Rumination Model
- 3a. Stress-and-Coping Mechanisms Model
- 3b. Stress-and-Coping Buffering Model
4. Self & Social Systems Model

1. Direct Effects Model



Long, K. N., Worthington, E. L., VanderWeele, T. J., & Chen, Y. (2020). Forgiveness of others and subsequent health and well-being in mid-life: A longitudinal study on female nurses. *BMC Psychology*, 8, 1-11.
<https://doi.org/10.1186/s40359-020-00470-w>

$\mathcal{R}^2 = .14, p < .001$

Lee, Y. R., & Enright, R. D. (2019). A meta-analysis of the association between forgiveness of others and physical health. *Psychology & Health*, 34(5), 626-643.
<https://doi.org/10.1080/08870446.2018.1554185>

Table 2. Associations with specific aspects of physical and psychological health.

	<i>k</i>	<i>N</i>	<i>ρ</i>	95% Confidence Intervals	<i>Q_w</i>	<i>P</i>
Physical health						
Somatization	12	3232	.17	.12, .21	18.77	.07
Blood pressure	3	210	.26	.08, .43	5.62	.06
Heart rate/problems	4	270	.24	.11, .38	6.03	.11
Cortisol	4	530	[−.003	[−.10, .10	5.65	.13
General physical symptoms	26	7888	.09	.05, .13	81.8	<.001
Doctor's visits	2	748	.06	.04, .08	0.19	.66
Alcohol/drug use	5	948	.03	[−.08, .13	12.29	.02
Bodily pain	5	1754	−.006	[−.11, .09	22.11	<.001
Infections	3	1036	.08	[−.01, .18	6.21	.04
Psychological health						
Depression	40	8811	.24	.20, .27	107.5	<.001
PTSD	7	1901	.005	−.21, .21	145.39	<.001
Anxiety	18	3267	.21	.16, .25	54.15	<.001
Subjective well-being	18	2724	.32	.26, .39	54.15	<.001
Anger	18	5913	.2	.13, .28	152.41	<.001
Negative affect	21	6122	.22	.16, .28	140.58	<.001
Rumination	9	3386	.20	.04, .36	212.6	<.001
Stress	12	3367	.23	.19, .34	30.1	<.001
Social functioning	13	3737	.18	.15, .20	9.7	.64
In-role functioning	5	1754	.12	.08, .16	3.35	.50

Note: Associations with negative symptomatology (e.g. depression, anxiety, PTSD, anger and negative affect) have had their signs reversed, such that a positive correlation indicates that greater forgiveness is associated with lower levels of adverse symptoms.



❧ Meta-analysis of forgiveness of others and mental and physical health

❧ 103 Studies

❧ $N = 26,043$

❧ $r = .19$, 95% CI = .17 - .22

❧ Mental health $r = .22$, 95% CI = .19 - .26

❧ Physical health $r = .11$, 95% CI = .07 - .14

Meta-analysis of forgiveness of others and happiness

83 studies

N = 39,104

Effect sizes below (no aggregate r)



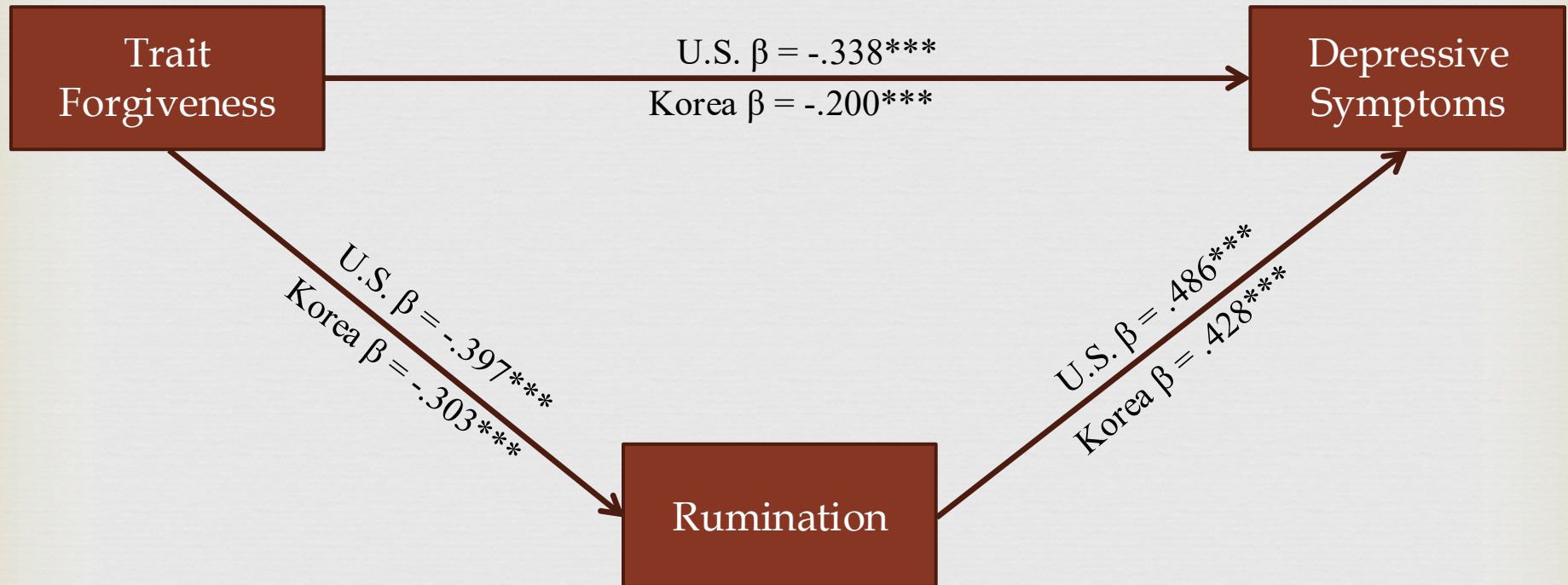
Table 1
Meta-analysis of forgiveness and SWB.

	<i>k</i>	<i>r</i>	95% CI	<i>I</i> ² (%)	<i>tau</i>	<i>Q</i>
SWB	47	0.35	[0.30,0.40]	93.08	0.176	664.50***
LS	50	0.25	[0.21,0.29]	89.26	0.136	456.01***
PE	33	0.25	[0.22,0.29]	77.06	0.093	139.50***
NE	34	-0.21	[-0.33,-0.08]	98.26	0.388	1900.50***

SWB = Subjective well-being, LS = Life satisfaction, PE = Positive emotion, NE = Negative emotion.

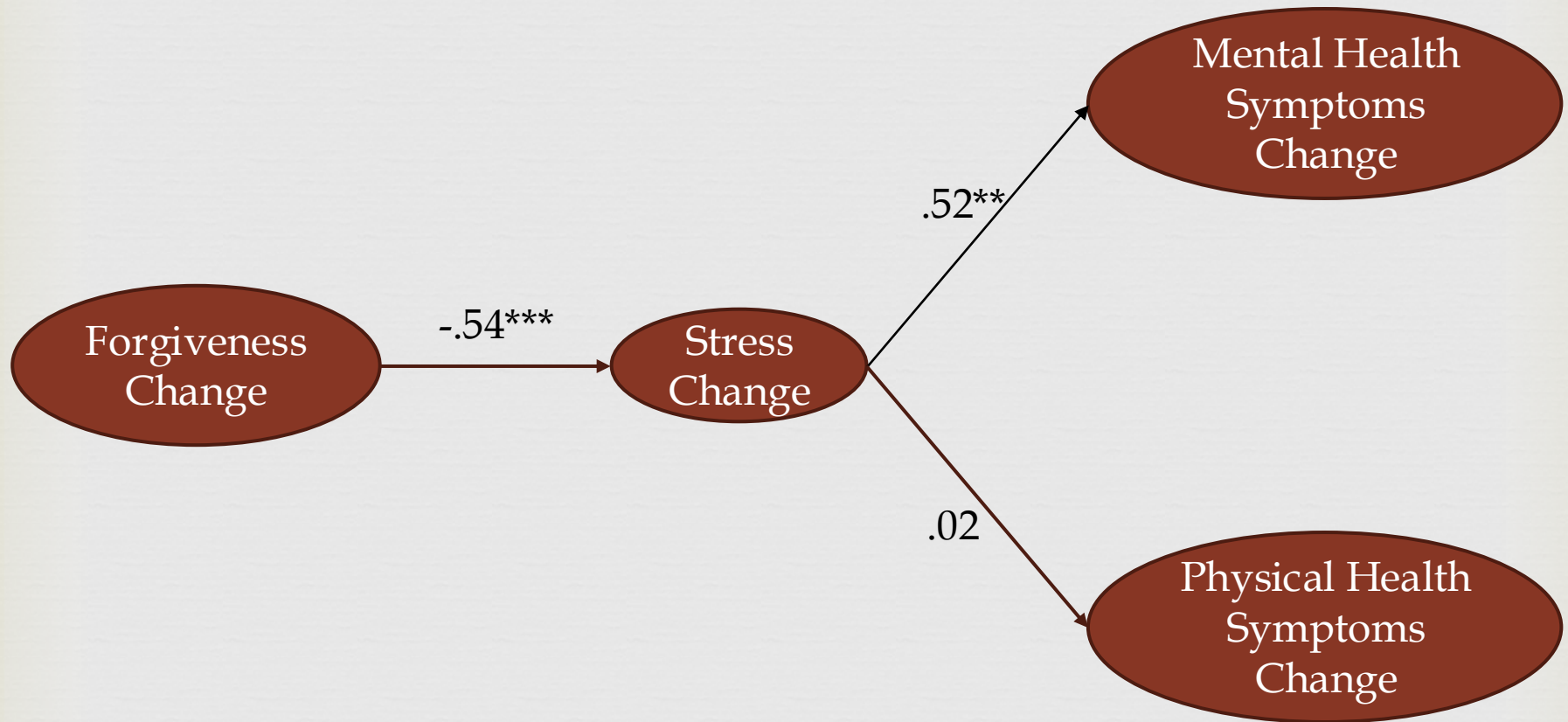
 $p < .001$.

2. Rumination Model



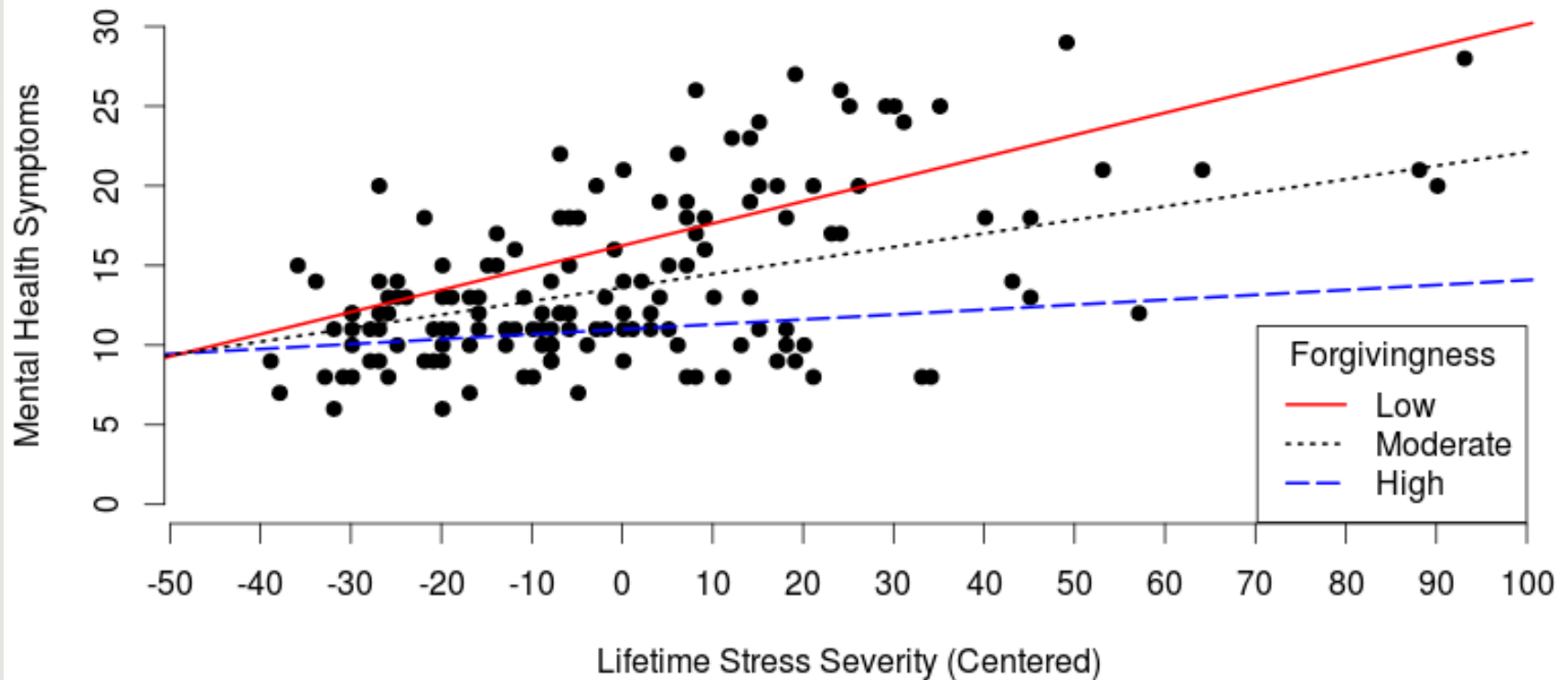
Toussaint, L., Lee, J. A., Hyun, M. H., Shields, G. S., & Slavich, G. M. (2023). Forgiveness, rumination, and depression in the United States and Korea: A cross-cultural mediation study. *Journal of Clinical Psychology*, 79, 143–157. <https://doi.org/10.1002/jclp.23376>.

3a. Stress-and-Coping Mechanisms Model



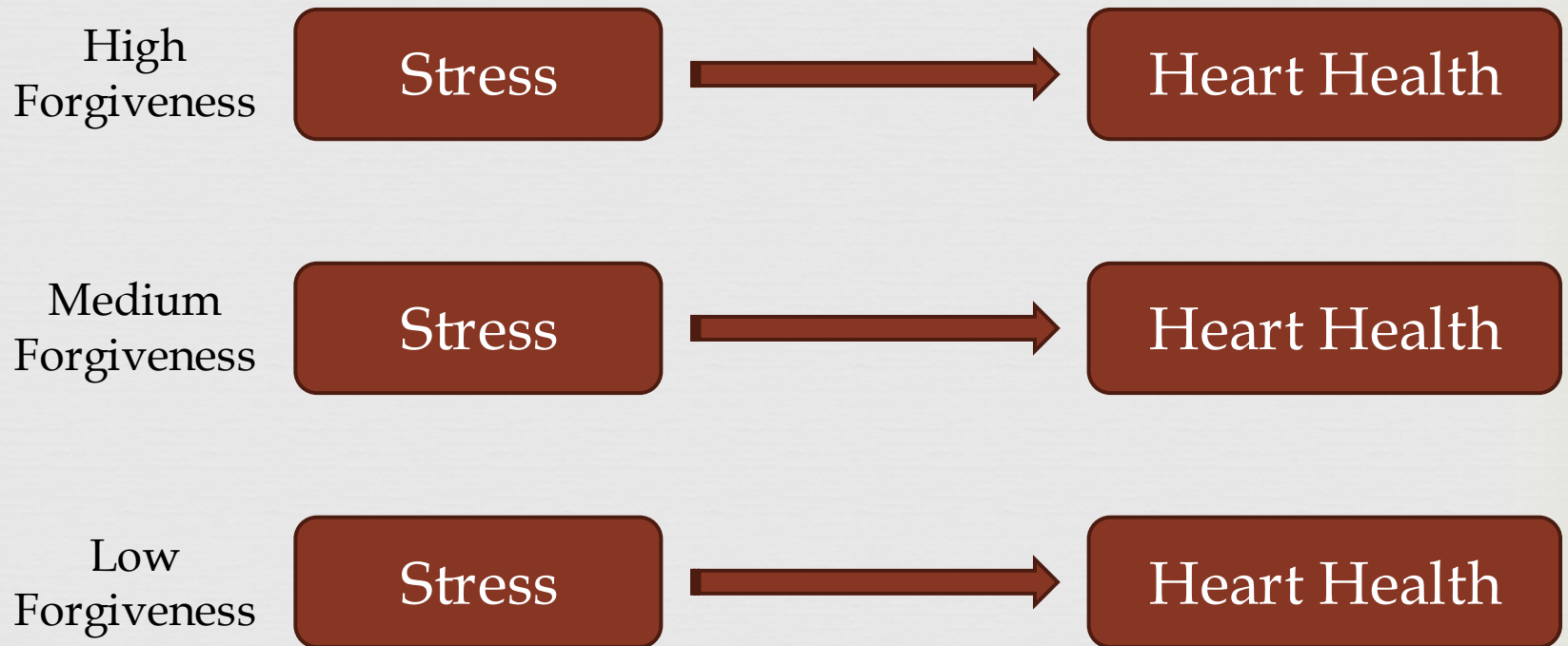
Toussaint, L. L., Shields, G. S., & Slavich, G. M. (2016). Forgiveness, stress, and health: A 5-week dynamic parallel process study. *Annals of Behavioral Medicine*, 50, 727–735. doi: 10.1007/s12160-016-9796-6

3b. Stress-and-Coping Buffering Model



Toussaint, L., Shields, G. S., Dorn, G., & Slavich, G. M. (2016). Effects of lifetime stress exposure on mental and physical health in young adulthood: How stress degrades and forgiveness protects health. *Journal of Health Psychology*, 21(6), 1004-1014. <https://doi.org/10.1177/1359105314544132>

Forgiveness Protects



5 HEALTH BENEFITS OF REDUCING STRESS

Stress affects more than your mind. Here are five ways a stress management routine could help your body.



1 BETTER SLEEP

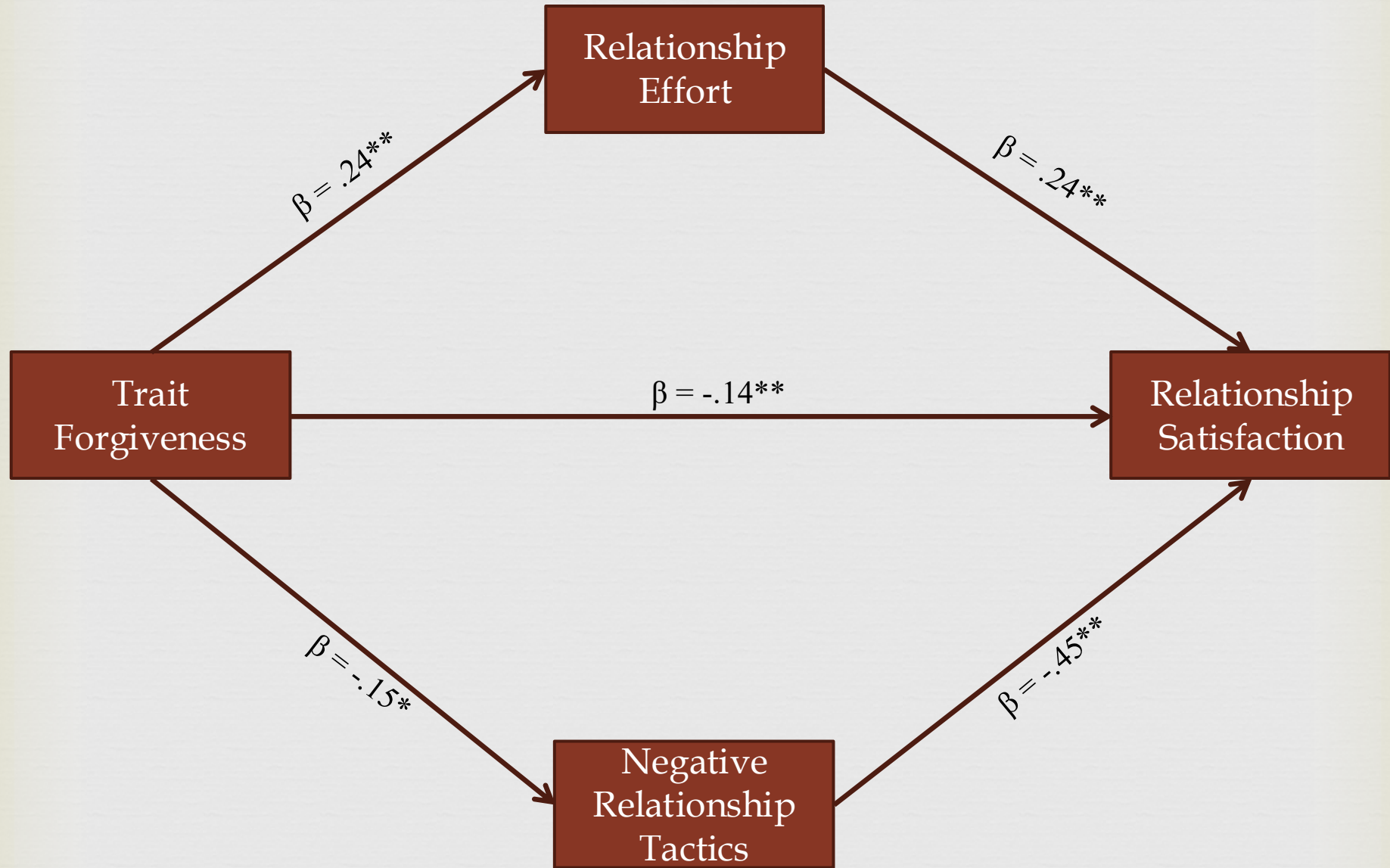
2 LOWER BLOOD PRESSURE

3 IMPROVED DIGESTION

4 REDUCED MUSCLE TENSION

5 BOOSTED IMMUNE SYSTEM

4. Self and Social Systems Model



Braithwaite, S. R., Selby, E. A., & Fincham, F. D. (2011). Forgiveness and relationship satisfaction: Mediating mechanisms. *Journal of Family Psychology*, 25(4), 551–559. <https://doi.org/10.1037/a0024526>

Our Epidemic of Loneliness and Isolation

2023

The U.S. Surgeon General's Advisory on the Healing Effects of Social Connection and Community





Importance of Self-Forgiveness and Social Support in Potentially Reducing Loneliness in Men Who Have Sex with Men

Joseph M. Currin^a  and Randolph D. Hubach^b 

^aDepartment of Psychological Sciences, Texas Tech University, Lubbock, Texas, USA;

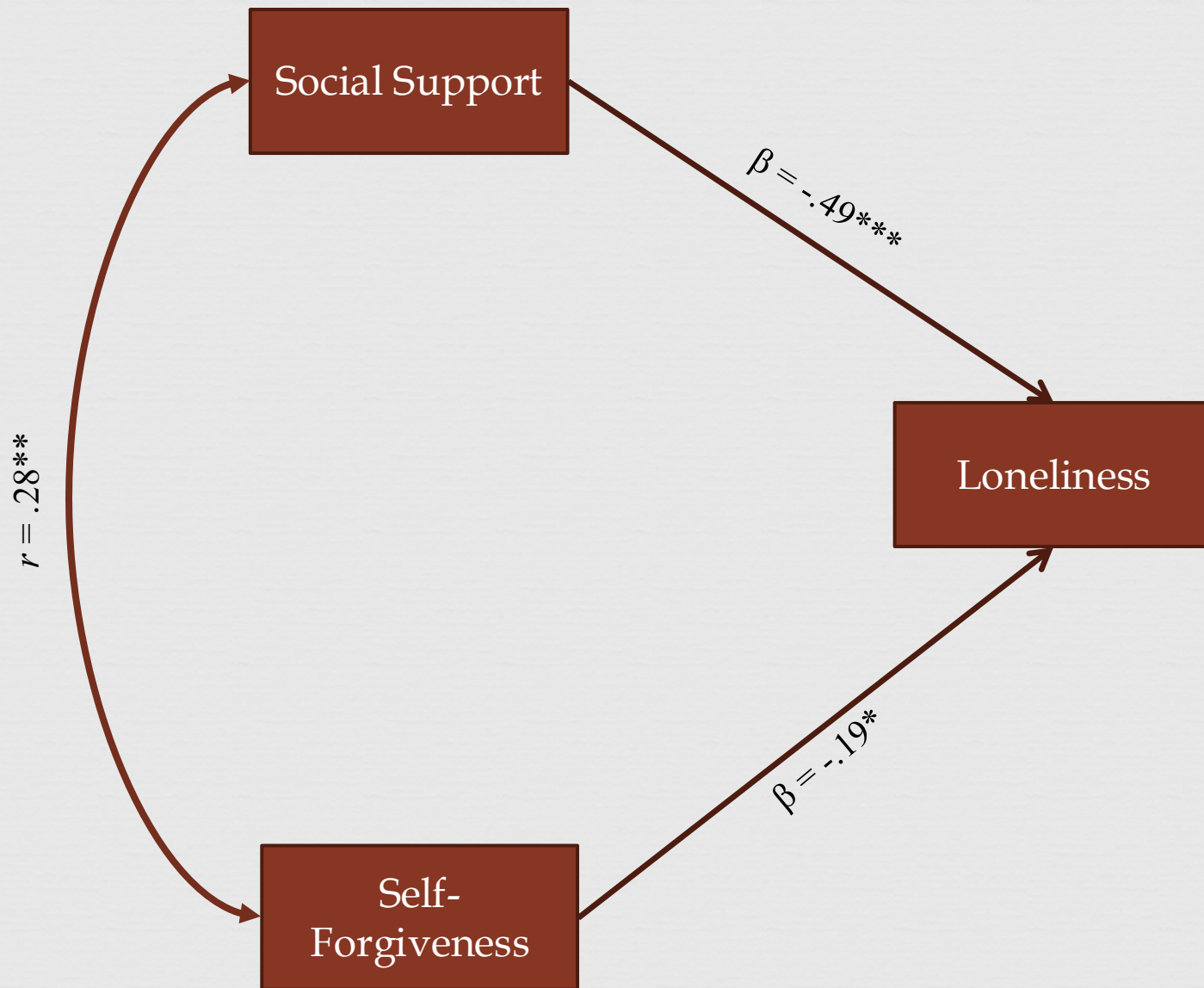
^bRural Health, Oklahoma State University Center for Health Sciences, Tulsa, Oklahoma, USA

ABSTRACT

Higher levels of loneliness in men who have sex with men (MSM) are associated with negative outcomes such as depression, anxiety, and sexual impulsivity. By identifying what may reduce loneliness in MSM, counselors and public health professionals can alleviate the distress of their clients. A significant hierarchical multiple regression controlling for relationship status, $F(9, 105) = 16.36$, $p < 0.001$, $R^2 = .62$, indicated that higher levels of self-forgiveness ($\beta = -.19$, $p = .04$) and perceived social support ($\beta = -.49$, $p < .001$) predicted lower levels of loneliness in MSM. Implications and limitations are discussed.

KEYWORDS

Gay/Bisexual men; mental health; reducing loneliness; resiliency; public health; counseling and therapy



Teaching Forgiveness as a Way of Coping



Teaching and Attitudes



❧ 1 = strongly disagree; 7 = strongly agree

❧ I believe that forgiveness is a moral virtue.

❧ Forgiveness is more important than justice.

❧ It is admirable to be a forgiving person.

❧ It is not very healthy for people stay mad at those who hurt them.

❧ Forgiveness is a sign of strength.

❧ People should work hard to let go of the wrongs they have suffered.



Evaluating the effectiveness of a community-based forgiveness campaign

Brandon J. Griffin^{a,b}, Loren L. Toussaint^c , Mitch Zoelzer^c, Everett L. Worthington Jr.^b, Jennifer A. Coleman^b, Caroline R. Lavelock^b, Alec McElroy^b, Joshua N. Hook^d, Nathaniel G. Wade^e, Steven J. Sandage^f and Mark S. Rye^g

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ABSTRACT

Forgiveness interventions have been employed in individual, couple, family, and group psychotherapy. Few attempts have been made to deliver forgiveness interventions via community-based campaigns. In the current field study, we administered a community-based forgiveness campaign to an entire university campus. A quasi-experimental design was used in which multiple pre-tests were compared to post-test scores on a psychometrically sound measure of forgiveness as well as single items assessing forgiveness, love, and conflict across students' relationships with others in the community (i.e. friends, roommates, teachers, and parents). Multilevel models were specified to compare repeated scores from the baseline phase to post-intervention phase scores. Findings indicated that community-based approaches are a viable method of promoting forgiveness that may serve as a less intense but more easily disseminated and less costly approach to promoting forgiveness than traditional modalities of psychological treatment. Implications for future empirical investigation and clinical application are discussed.

ARTICLE HISTORY

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KEYWORDS

Forgiveness; community;
intervention



Do Forgiveness Campaign Activities Improve Forgiveness, Mental Health, and Flourishing?

Andrea Ortega Bechara¹, Zhuo Job Chen^{2*}, Richard G. Cowden³, Everett L. Worthington Jr.⁴, Loren Toussaint⁵, Nicole Rodriguez¹, Hernan Guzman Murillo¹, Man Yee Ho⁶, Maya B. Mathur⁷ and Tyler J. VanderWeele³

¹Department of Psychology, Universidad del Sinú, Montería, Colombia, ²School of Nursing, University of North Carolina at Charlotte, Charlotte, NC, United States, ³Human Flourishing Program and T.H. Chan School of Public Health, Harvard University, Cambridge, MA, United States, ⁴Department of Psychology, Virginia Commonwealth University, Richmond, VA, United States, ⁵Luther College, Decorah, IA, United States, ⁶Department of Social and Behavioural Sciences, City University of Hong Kong, Kowloon, Hong Kong SAR, China, ⁷Quantitative Sciences Unit, Stanford University, Stanford, CA, United States

Objectives: To evaluate the effectiveness of a forgiveness public health intervention at promoting forgiveness, mental health, and flourishing.

Methods: Colombian students ($N = 2,878$) at a private, nonreligious university were exposed to a 4-week forgiveness community campaign and were assessed pre- and post-campaign.

Results: Forgiveness, mental health, and flourishing outcomes showed improvements after the campaign. On average, participants reported engaging in 7.18 ($SD = 3.99$) of the 16 types of campaign activities. The number of types of campaign activities that participants engaged in evidenced a positive linear association with forgiveness, although some activities were more popular than others and some activities were more strongly associated with increased forgiveness. For depression, anxiety, and flourishing, engaging in more activities was generally associated with greater improvements, but the patterns were less consistent relative to forgiveness.

Conclusion: This forgiveness public health intervention effectively promoted forgiveness, mental health, and flourishing. Effective campaigns in diverse communities involve promoting mental and physical health through forgiveness. However, recent conflict may hinder acceptance, necessitating political capital for leadership advocating forgiveness initiatives.

Keywords: forgiveness, public health, mental health, flourishing, intervention

OPEN ACCESS

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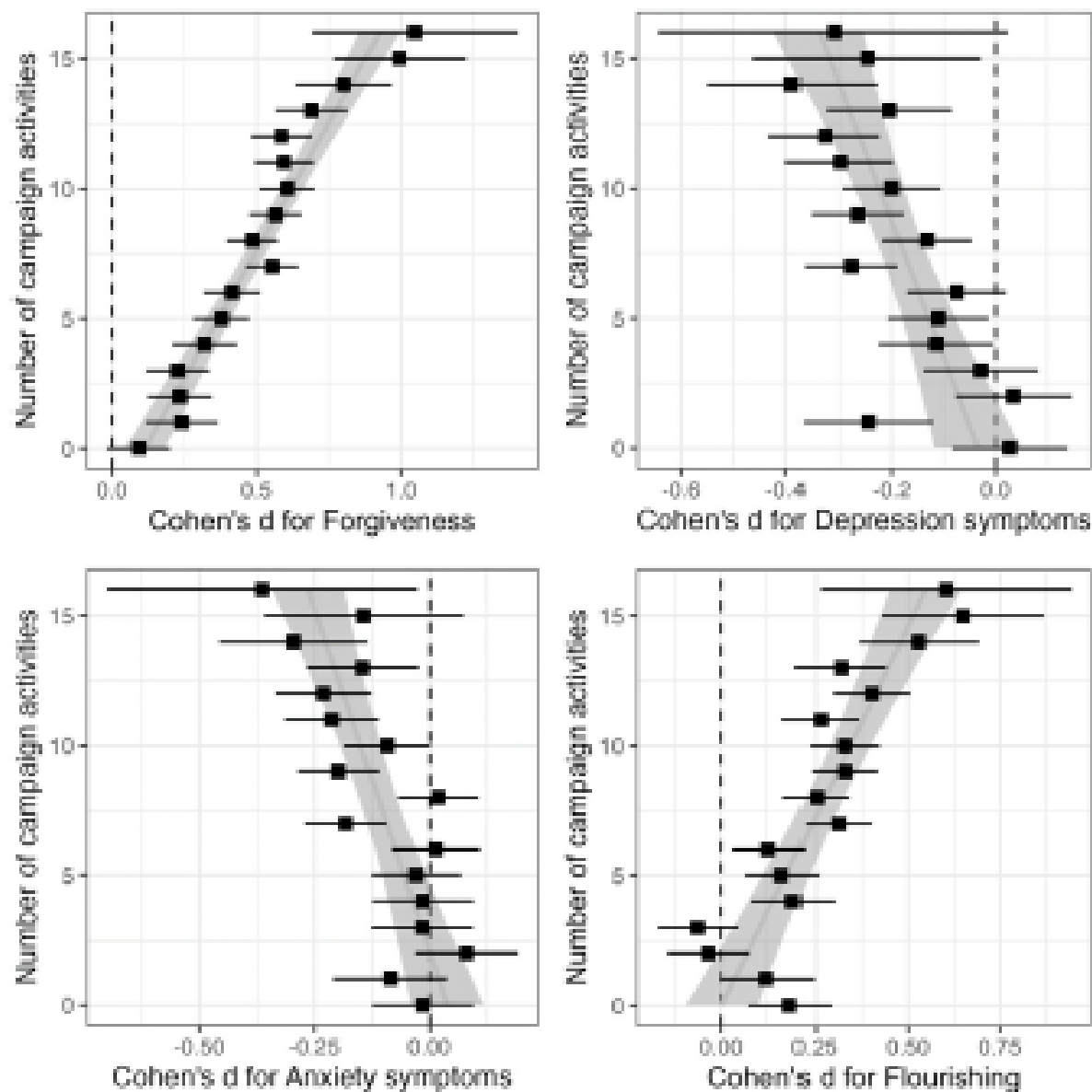
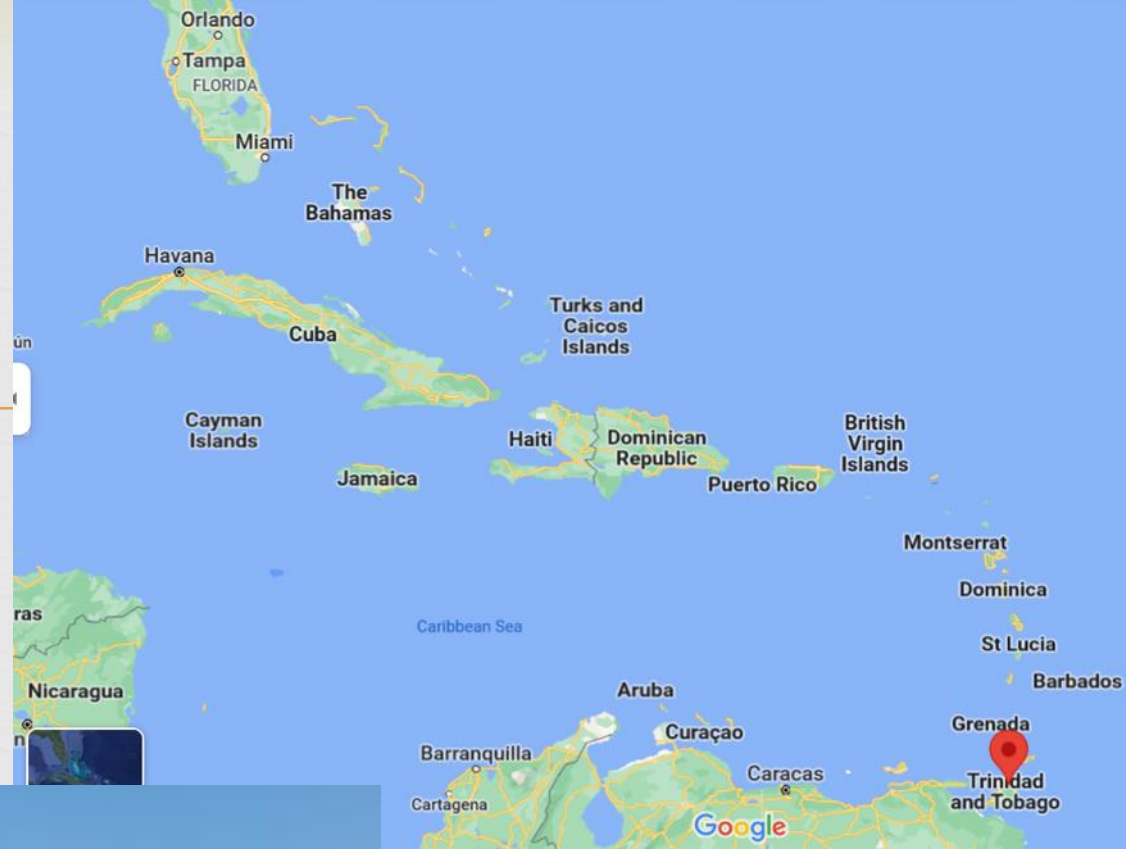


FIGURE 1 | Pre-post effect sizes for engagement in 16 types of campaign activities across forgiveness, mental health, and flourishing outcomes (Montaña, Colombia, 2021). Note. The estimates and confidence intervals for each number of campaign activities are derived from the subset of participants who did exactly that number of activities. The effect size for forgiveness is the average effect size over those of six forgiveness outcomes. The vertical dashed line is drawn at 0 effect size.

Self-Forgiveness Intervention, Suicide Risk, Mental Health, and Addictions Study in Trinidad & Tobago.



TEMPLETON WORLD
CHARITY FOUNDATION



Where the
Magic Happens

A large circle containing the text "Where the Magic Happens".

© Sarah Andersen

Conclusions



- ❧ Forgiveness is related to and may even improve heart health
- ❧ Probably works through multiple mechanisms of rumination, social support, and stress, among other biopsychosocial systems
- ❧ Forgiveness engages neurocognitive systems that stimulate downstream autonomic systems in a cascade of protective parasympathetic and hormonal responses



Forgiveness, Health, and Happiness

By Loren Toussaint, Ph.D.

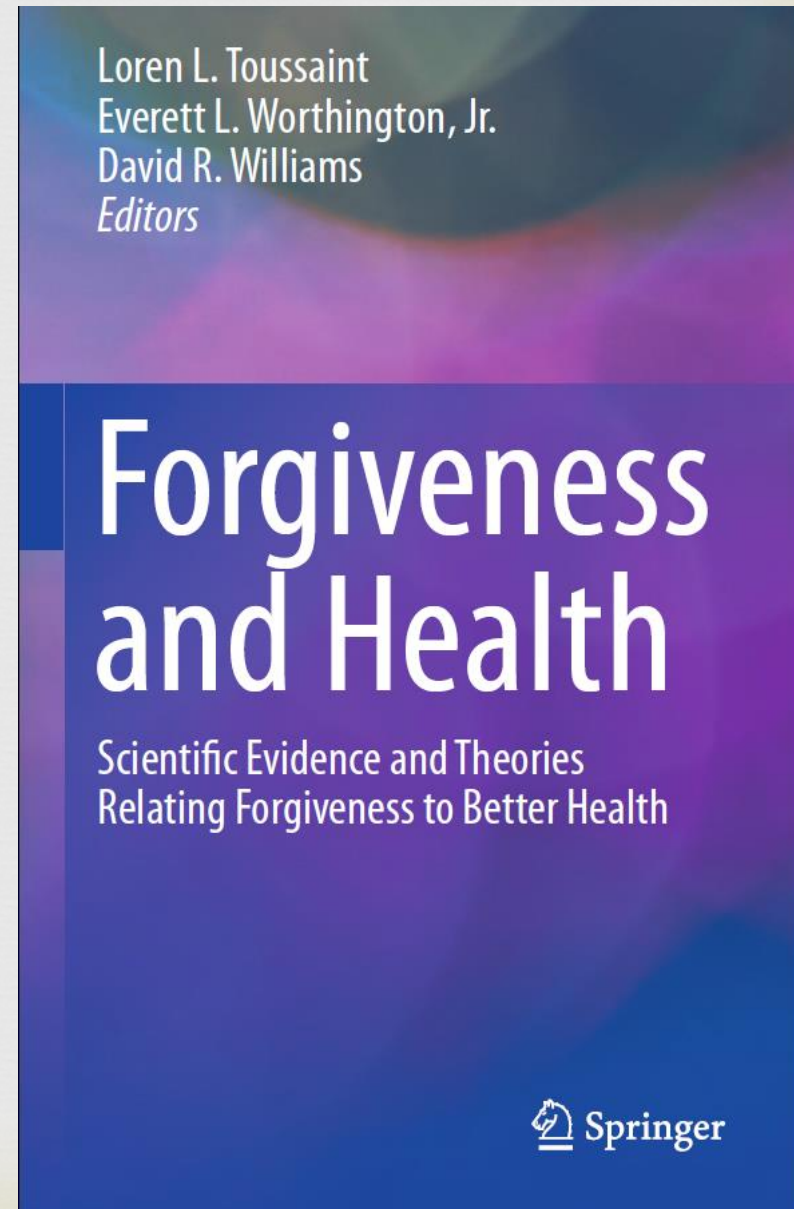
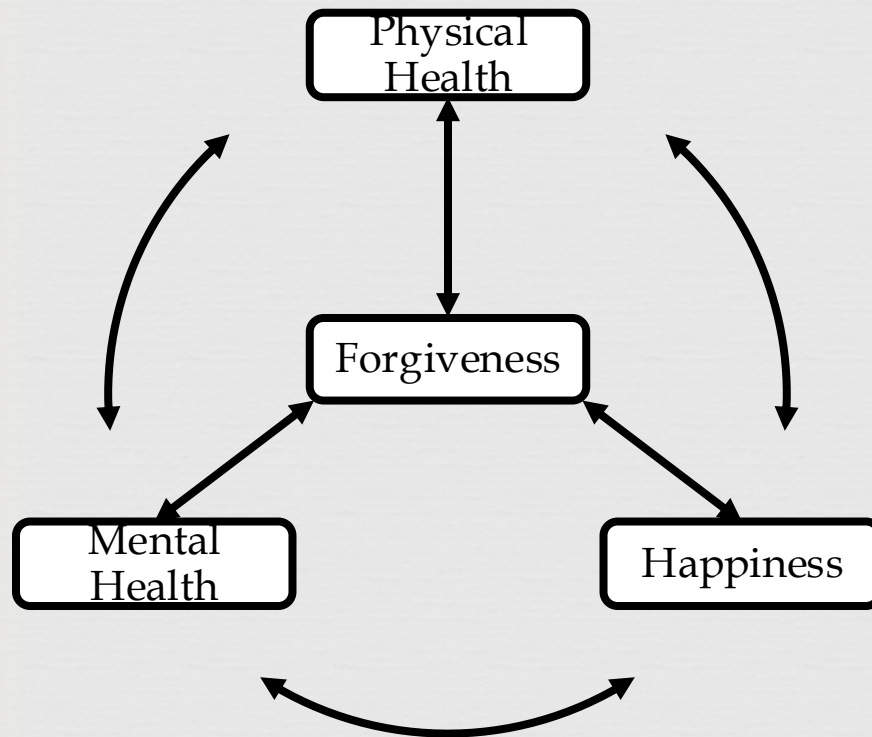
February 24, 2022

A member of Templeton's Forgiveness Scientific Advisory Council offers a glimpse at what forgiveness can do for our physical health and social well-being.



Discover Forgiveness is a joint initiative of the Templeton World Charity Foundation (TWCF) and the John Templeton Foundation (JTF), supported by a [Forgiveness Scientific Advisory Council](#). This council includes representatives from around the world with

Forgiveness: A Nexus of Flourishing





Discover Forgiveness

What is forgiveness? How is it practiced and what impact does it have?

Scientific researchers have endeavored to answer these questions, discovering answers from peoples and cultures across the world. This website explores their findings and shares their insights about the scientifically validated healing power of forgiveness, and poses another important question: what does forgiveness mean to you?

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Why It's So Hard
for People to
FORGIVE

*"Forgiving will make your
upsets feel light as a feather."*

Dr. Jim Dincalci
Founder of the Forgiveness Foundation

Peace of mind through forgiving!

Building caring families, communities, and
healthy organizations.

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Further Interest Contact:

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Thank you!

