

# POSITIVE EMOTIONAL CHANGE: MEDIATING EFFECTS OF FORGIVENESS AND SPIRITUALITY

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We evaluated the efficacy of an emotional education program that seeks to reduce the intergenerational transmission of negative interaction patterns by increasing forgiveness and spirituality. We examined both reduction of psychological symptoms and increase in positive psychological outcomes over the course of a year, as well as the mediators of this change. At baseline, the sample consisted of 99 participants and 47 waiting list controls. Comparisons of scores from baseline (Time 1) to one week after the Hoffman Quadrinity Process (Time 2) showed large declines in negative affect (depressive symptoms) and increases in both

positive outcomes (mastery, empathy, emotional intelligence, life satisfaction, forgiveness, and spiritual experience) and health and well-being. Over the course of a year, most of these gains were sustained, in comparison with the control group. Further, increases in forgiveness and spirituality mediated the effect of program participation on depressive symptoms.

**Key words:** Emotional education, positive mental health, forgiveness, spirituality, emotional intelligence

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Maddux<sup>1</sup> has recently called for a new approach to the facilitation of psychological well-being. He argues that therapeutic interventions should be based on a model of positive psychology that emphasizes well-being, satisfaction, happiness, interpersonal skills, perseverance, talent, wisdom, and personal responsibility. Seligman<sup>2</sup>(p5) argued that practitioners should recognize that much of the best work they already do in the consulting room is to amplify their clients' strengths rather than repair their weaknesses.<sup>3</sup>

Studies of emotional development in adulthood have argued that there is an increasing complexity of emotions.<sup>3,4</sup> With age, there is a decrease in negative affectivity<sup>5</sup> and an increase in positive attributes such as mastery.<sup>6</sup> However, some people have delayed emotional development in adulthood, perhaps due to aversive childhood environments.<sup>7</sup>

By far, the majority of studies on the long-term effects of childhood stress have emphasized negative outcomes. Childhood stress and abuse have been associated with a wide range of mental and physical health problems in adulthood.<sup>8,9</sup> Further, there is growing evidence for the intergenerational transmission of poor parenting and hostility.<sup>10</sup>

Less noticed, however, is the fact that early childhood stress such as parental bereavement has also been associated with high achievement in adulthood. Anthony<sup>11</sup> noted that there were

positive aspects of stress in childhood, such as increased mastery. Elder<sup>12</sup> found that middle-class children of the Great Depression who were economically deprived attained higher levels of education, had more successful careers, more stable marriages, and better relationships with their children than their non-stressed peers. Holocaust survivors also show a similar pattern of high achievement, stable marriages, and close relationships with children.<sup>13</sup> Further, there is some evidence that widely acknowledged geniuses were more likely to experience parental bereavement as children.<sup>14</sup>

However, patterns of high achievement in the face of stress may be accompanied by high levels of negative affectivity, including depression, anxiety, and hostility.<sup>15</sup> For example, resilient children who are functioning well academically showed levels of anxiety and depressive symptoms that were similar to children categorized as more vulnerable, and some who function well in childhood show signs of psychological distress in adolescence.<sup>16</sup>

Maddux<sup>1</sup> suggested that therapeutic interventions should focus more on the whole person to promote positive outcomes rather than only the alleviation of specific symptoms. Certainly, therapy is one avenue for emotional development in adulthood, but most psychotherapy evaluations narrowly assess the targeted outcomes such as depression or anxiety<sup>17</sup> and have not measured positive outcomes such as increases in mastery, self-knowledge, acceptance of the self, and empathy. It is highly likely that these therapies do have these types of positive outcomes, but it is unfortunate that evaluation studies do not typically include them, because they might be especially relevant to resilient adults who have delayed emotional development in adulthood. We are especially interested in whether changes in forgiveness and spirituality can promote positive emotional change.

## HOFFMAN QUADRINITY PROCESS

Hoffman<sup>18</sup> hypothesized that much psychological distress in adulthood reflects the adoption of maladaptive parental models

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of communication. Laurence<sup>19</sup> believed that such models were internalized and repeated across generations. The psychological effect of this syndrome is the continuing contribution of parentally rejected characteristics of the self, stored in the unconscious, to depression, anxiety, and other destructive emotions.

Hoffman developed an emotional education program, called the Quadrinity Process (QP), which is based on the observation that depression seems to mirror the negative or unproductive appraisals conveyed to the depressive person by his or her parents. It emphasizes the importance of forgiveness of the parent to break the chain of negative transmission, and seeks to increase emotional intelligence and spirituality as a means of fostering positive emotional change.

The hypothesis of parental influence on the development of depression parallels Beck's<sup>20</sup> cognitive analysis of depression as a response to negative beliefs about the self, stemming from negative parental appraisals. In a major review of the literature, Brewin et al<sup>21</sup> showed that adult depressives consistently reported having harshly critical parents. Such parental criticism apparently translates into negative beliefs about oneself. Kessler and Magee<sup>22</sup> showed that childhood stress was modestly related to adult depression, whereas Kessler et al<sup>23</sup> found a similar relationship of childhood stress to a wide variety of psychological symptoms. Alloy et al<sup>24</sup> also found that negative parenting practices resulted in dysfunctional attitudes and enhanced the likelihood of both minor and major depressive episodes. Emotional maltreatment also appears to be particularly influential in the development of depression in later life.<sup>25</sup>

Aversive parental interactions appear to contribute to delayed emotional development in adulthood, resulting in individuals getting stuck in negative emotional interaction patterns, which are then replicated across generations.<sup>10</sup> Psychotherapy can certainly be helpful in alleviating symptoms resulting from childhood stress, but it is unclear to what extent it also promotes positive development, aside from high achievement by society's standards.

The QP is an eight-day residential program for groups of seven to nine adults, which has been developed over a period of 36 years. The QP concentrates on four aspects of self: physical, emotional, intellectual, and spiritual (hence the name "Quadrinity") that are considered to be interrelated and form a complex interactive system. The QP is based on the theory that the persistent negative behaviors, moods, and attitudes of adulthood have their roots in adverse experiences in childhood. Until these influences are understood and resolved, these persistent negative influences continue to undermine adult lives and activities. The QP consists of a structured series of experiential processes intended to facilitate integration of these four aspects.

The process is conducted by instructors who have been certified by the Hoffman Institute. All instructors have been rigorously screened and have completed a training process that takes approximately two years. Some are licensed therapists, and a licensed therapist is present at all processes.

The QP has a number of components, including an extensive preprocess homework assignment in which individuals fill out a series of checklists of negative attributes of each parent, as well as of themselves, which involves negative personal characteristics and patterns of interactions. In addition, there are presentations

and discussions by the teachers, as well as small group sessions and personal interactions with teachers. Exercises include guided imagery and catharsis, as well as journaling. Writing exercises are used extensively to help students remember, reminisce, and evaluate their childhood interactions with their parents. The overall goals consist of learning to identify how the participants replicate these negative interaction patterns in their present relationships and activities and to offer means of ceasing such replication.

Guided visualizations and teacher feedback help students to understand how they learned their negative patterns and how these contribute to the maintenance of negative interactive cycles in their current lives. Role playing exercises are used to release these patterns, in part by developing a newfound empathy for one's parents that happens when students understand that their parents also learned negative behavior in their childhoods. Students are asked to imagine their parents as small children interacting with their own parents, and also to imagine each of their parents interacting with the student, as a child. Students then write a script of their "child to child" interactions. A major emphasis is on developing forgiveness of parents (or others whom the participant perceives to have harmed them). When students understand at a deep emotional level that their parents were also trapped in their own negative emotional cycles, forgiveness is possible.

In summary, the first three days are spent reviewing process concepts and identifying negative interaction patterns stemming from experiences with both parents and/or other relevant caregivers. Through a series of cathartic exercises and role-playing, participants practice detaching cognitively and emotionally from these internalized parental patterns.

The next two days are spent on forgiveness exercises, in which participants are encouraged to visualize their parents as children and peers. An additional two days are spent in exercises intended to integrate the emotional, cognitive, and physical selves, largely through encouraging dialog between these different aspects of self. Throughout this period, emphasis is on developing a relationship with one's spiritual self, largely through guided imagery. The last day is spent on exercises that encourage the integration of the whole self. For a complete description of the QP, see Laurence.<sup>19</sup>

Utilization of the QP is widespread. It is offered 30 times a year at five sites in the United States, and in 14 other countries. According to the Hoffman institute Web site,<sup>26</sup> more than 50,000 people have completed this process since 1967. However, the process has never been formally evaluated with outcome studies and a comparison group.

Recent psychological research has affirmed the benefits of some of the practices employed in QP. For example, Esterling et al<sup>27</sup> conducted a series of studies showing that writing about traumatic experiences reduces a variety of negative psychological and physical symptoms. Moreover, multiple occasions for writing about both past and present problems appear most efficacious.<sup>28</sup> Most recently, Smyth<sup>29</sup> showed that writing about negative experiences had beneficial effects on immune functioning. While it is assumed that writing about trauma allows cognitive reframing to occur, decreasing negative affect, it is also possible that forgiveness plays an important role.

Forgiveness has been defined as “the replacement of negative unforgiving emotions with positive, other-oriented emotions.”<sup>30</sup> Its effect on psychological and physical functioning have also been a topic of recent interest to psychologists. Despite the enthusiasm surrounding this construct,<sup>31-33</sup> surprisingly few good empirical studies have established a relationship between forgiveness and mental health outcomes.<sup>34,35</sup>

Spirituality, which may be defined as religiosity without the context of formal religion, has recently been recognized as a source of emotional well-being.<sup>36-38</sup> An association between religious participation and mental and physical health has been fairly well documented.<sup>39,40</sup> However, the relationship of spiritual experiences to positive emotional outcomes has been less studied, although Hills and Argyle<sup>41</sup> have suggested that spiritual experience is associated with happiness. To our knowledge, no one has examined how changes in spirituality can be elicited, and whether these changes can result in symptom reduction and positive emotionality.

### Present Study

The present study formally evaluated the Quadrinity Process. We sought to evaluate the effects of this emotional education program on mental health symptoms, physical health and functioning, and indices of well-being beyond the reduction of symptoms. We hypothesized that depression and other mental health symptoms would decrease and that indicators of positive mental health would increase in a comparison of QP participants with a control group. We also expected that self-rated health and well-being would also increase in the QP group. Further, we explored whether these changes were mediated through increases in forgiveness and spirituality.

## METHOD

### Sample and Procedure

The Hoffman Institute screens potential applicants for absence of major psychological disorders, including schizophrenia, non-controlled manic-depressive disorder, and current substance abuse, by using a health-screening questionnaire. If respondents answer positively to questions concerning psychotropic medication, major psychiatric disorder, hospitalization for psychiatric care, or previous history of medication for emotional problems, they are required to have their therapist sign a release before they can be enrolled in the program.

The sample pool consisted of 142 individuals who planned to participate in the QP, and a comparison group of 95 people who had contacted the Hoffman Institute for information about the process but had no plans to participate in the near future. Unfortunately, due to the cost of the process, random assignment to participant and control groups was not feasible. Ninety-nine (69.72%) QP participants agreed to be in the study, and 47 agreed to be controls (49.47%). They were referred from a number of sources, including family and friends (45.6%), therapists and personal coaches (38.1%), and informational literature, including the World Wide Web (16.3%).

The QP participants were assessed via an anonymous survey with identity codes at baseline approximately one week before participating in the process (T1), one week after participating (T2), at

**Table 1.** Sample Characteristics

	Participants	Controls	$\chi^2(1, N = 145)$
Women	68%	75%	.58
Ethnicity: European American	89%	87%	.02
Marital status: married	44%	47%	.13
Divorced	19%	27%	.02
Income: \$100,000+	56%	31%	7.43*

Sample sizes vary slightly among comparisons.

\* $P < .05$ .

three months (T3), and at one year (T4). Controls were assessed at a baseline (T1), three months (T3), and one year (T4).

The two groups did not significantly differ on symptoms at baseline, nor were they different on most demographics such as gender, ethnicity, or marital status (see Table 1). Nearly three quarters were female, not quite half were married, and nearly all were European American. The groups did not differ in age, (range, 19-75 years of age), marital status was 44% versus 47%, respectively,  $t(138) = 0.19$  (not significant). The experimental group did have significantly higher incomes,  $t(141) = 3.80$ ;  $P < .001$ .

The sample size decreased over time; by the final follow-up, 54 (55%) of the participants remained in the study and 32 (68%) of the comparison group remained. Dropouts did not differ from the participants in sex, income, or marital status ( $\chi^2$  tests ranged from 0.17-1.37). Not surprisingly, individuals who were more depressed were less likely to remain in the study,  $F(1, 145) = 3.91$ ;  $P = .05$ . However, the interaction term was not significant,  $F(1, 145) = 0.162$ , indicating that there were no differences in depression-influenced dropout between the two groups.

### Measures

We measured three categories of outcomes: negative affect, positive affect, and health and well-being. Means, SDs, and internal reliabilities (Cronbach's  $\alpha$ ) for all outcome measures are presented in Table 2. Internal reliabilities for all scales were fairly high (range, 0.71-0.95), with the exception of Empathy and Life Satisfaction, which were low but acceptable ( $\alpha = .59$  and  $.55$ , respectively). Internal reliabilities on the subscales of the SF36 ranged from 0.73 to 0.85.

**Negative affect.** The Beck Depression Inventory (BDI)<sup>20,42</sup> is a 21-item scale that assesses the extent to which participants report the affective and somatic symptoms of depression by using a scale ranging from 0 to 3. The response category 0 indicates no evidence of depression, whereas that rated 3 indicates strong evidence of depression (eg, suicide attempts). The BDI was chosen because it is widely used in psychotherapeutic intervention studies,<sup>43</sup> but it is important to note that BDI scores alone do not represent clinical diagnoses of depression. The mean for this sample was 14.25, (SD = 10.32); the internal consistency was quite high (Cronbach's  $\alpha = .90$ ).

In addition, the Brief Symptom Inventory (BSI)<sup>44</sup> was used to

**Table 2.** Time 1 Descriptive Statistics for Outcome Measures for Both Groups

Outcome Measure	Mean	SD	Cronbach's $\alpha$
<b>Negative Affect</b>			
BDI	14.25	10.32	.90
<b>BSI</b>			
Depression	13.33	5.68	.89
Hostility	8.71	3.34	.76
Anxiety	11.91	4.55	.81
Interpersonal Sensitivity	9.13	3.68	.80
Obsessive Compulsive	14.01	4.89	.82
Somatization	11.06	3.78	.71
<b>Positive Affect</b>			
Mastery	54.76	14.08	.88
Forgiveness	80.31	18.61	.91
Emotional intelligence	121.83	17.66	.93
Life satisfaction	33.53	6.57	.55
Empathy	43.24	6.00	.59
Religious experience	85.75	20.69	.95
<b>Health and Well-Being</b>			
Health rating	2.29	.94	NA
General health	15.27	3.42	.76
Physical functioning	2.99	1.32	.76
Emotional functioning	1.60	1.32	.85
Social functioning	3.97	1.31	n/a
Energy/vitality	11.63	3.56	.73
Mental health	15.50	4.53	.75

BDI, Beck Depression Inventory; BSI, Brief Symptom Inventory.

assess a wider range of psychological symptoms during the past month, including anxiety (6 items), obsessive-compulsive symptoms (6 items), interpersonal sensitivity (4 items), and hostility (5 items). Each item was rated on a scale from 1 to 5, where 1 = not at all and 5 = extremely. The caveat concerning the nonequivalence of BDI scores to diagnosis applies equally to BSI scores. The internal reliabilities ranged from 0.71 for somatization to 0.89 for depressive symptoms. Means and SDs can be found in Table 2.

**Positive outcomes.** Nearly all of the positive outcome inventories used in this study asked respondents to indicate whether they strongly agreed or strongly disagreed with each statement by using a five-point scale.

Empathy was measured with the 12-item short form of the widely used Fantasy-Empathy Scale.<sup>45</sup> Sample items include "When a friend becomes engaged or gets married, I'm very happy" and "If my friends aren't successful, that's their problem" (reversed). The mean for the empathy scale was 43.24 (SD = 6.00), but the internal reliability was .59, which meets the minimum criteria for a survey.

The Forgiveness Scale<sup>46</sup> asked respondents to describe the nature of an offense which was committed against them. They then responded to 23 items that assessed how they felt about the

offense or the person who committed it. This scale formed an important component of the longer scale developed by McCullough et al,<sup>47</sup> which has recently been widely used.<sup>48</sup> The mean for the forgiveness scale was 80.31 (SD = 18.61); the internal reliability was quite high ( $\alpha = .91$ ).

The Emotional Intelligence scale<sup>49</sup> consists of 33 items that assess participants' cognizance of their own emotions and those of others. Sample items include "I am aware of my emotions as I experience them" and "I find it hard to understand the non-verbal messages of other people" (reversed). The construct "emotional intelligence" was formally introduced by Salovey and Mayer<sup>50</sup> and has resulted in measures of abilities that may contribute greatly to the understanding of the variability in life success among people of above-average intellectual ability. While there are several measures of emotional intelligence, that from Schutte et al<sup>49</sup> was explicitly based on the work of Salovey and Mayer<sup>50</sup> and has shown a relationship with positive mood and self-esteem.<sup>51</sup> Mean for this scale was 121.83 (SD = 17.66), and the reliability was also quite high ( $\alpha = .93$ ).

Mastery was assessed by the 14-item Mastery Scale.<sup>52</sup> These items that constitute one of the six Psychological Well-Being Scales tap a sense of control, both generally and in specific domains. A six-point scale is used, again ranging from "strongly disagree" to "strongly agree." The mean was 54.76 (SD = 14.08), and the internal reliability was also quite high ( $\alpha = .88$ ).

The Religious Experiences Scale<sup>41</sup> is a 25-item nondenominational measure that assesses spiritual experience. The items do not reflect any specific religious tradition, but instead focus on affective and cognitive states. Sample items include "loss of sense of self," "feeling uplifted," and "experiences of a unifying vision." The items tap frequency of these experiences, ranging from never (0) to several times a week.<sup>5</sup> The mean for the Religious Experiences Scale was 85.75 (SD = 20.69). Internal reliabilities were quite high ( $\alpha = .95$ ).

Life satisfaction was assessed using seven items that address specific life domains and relationships deemed central to the present study, including children, jobs, marriage, friends, co-workers, parents, and siblings. Scaling ranges from "terribly disappointed" (1) to "absolutely delighted" (7).<sup>53</sup> Responses were summed to create an overall satisfaction scale. The mean was 33.53 (SD = 6.57). Given that we were assessing life satisfaction in multiple domains, it is not surprising that the internal reliability was modest (.55).

**Physical health variables.** General health was assessed by the SF-36, a short form of the widely used Medical Outcomes Study.<sup>54</sup> Physical and emotional functioning in the past four weeks was assessed by four and three dichotomous items, respectively. Energy/vitality and mental health were assessed by four and five items, respectively, rated on a five-point scale (1 = definitely true, 5 = definitely false). The general health subscale consists of four items rated on the same five-point scale. Social functioning was assessed by one item, "Has your health limited your social activities," by using the same scale. Psychometrics for these measures are presented in Table 2; Cronbach's  $\alpha$  values ranged from .73 to .85 for these subscales.

**Table 3.** Parental Discipline Reported by Hoffman Participants, Controls, and Participants in the Davis Longitudinal Study

	Participants (n = 99)	Controls (n = 47)	DLS (N = 923)
Sarcasm, %	70.8	61.4	21.5
Ignored, %	51.6	32.5	8.3
Slapped, %	47.8	48.9	12.9
Whipped, %	47.3	38.6	17.3
Struck with fists, %	9.9	2.4	1.3
Kicked, %	10.9	4.7	0.5

DLS, Davis Longitudinal Study.

**Childhood stress.** The Childhood Experiences Scale (CES)<sup>55</sup> retrospectively assesses relationships, traumatic events, discipline, and achievement from ages 0 to 19. For purposes of this study, we were interested in the frequency of self-reported physical and emotional abuse, measured by a question asking participants how their parents usually disciplined them if they did something wrong. Two items assessed emotional abuse (sarcasm or harsh comments, and being ignored or banished), while four items assessed physical abuse (slapped, whipped with branch or belt, struck with fists, and kicked). For the purposes of this study, we were primarily interested in comparing the frequency of abuse in this sample with the sample of college alumnae on which it was developed (the Davis Longitudinal Study).<sup>56</sup>

We first compared the present sample's self-reports of parental abuse with those of a sample of college graduates from the Davis Longitudinal Study.<sup>56</sup> As Table 3 indicates, both the QP participants and the controls reported much higher rates of both emotional and physical abuse than did the comparison sample. Emotional abuse rates were especially high; 70.8% of the QP participants reported being subjected to sarcasm or harsh remarks and 51.6% reported being ignored, whereas the DLS sample reported rates of only 21.5% and 8.3%, respectively. Rates of physical abuse were equally discrepant, with nearly half of the participants reporting having been slapped or whipped, while the DLS rates were substantially lower (12.9 and 17.3%, respectively). Virtually none of the DLS participants reported being kicked or struck with fists, while about 10% of the QP participants reported these forms of abuse. The control group's rates were nearly as high as the rates of the participants for both emotional and physical abuse. The only statistically significant differences were with being ignored; only a third of the controls reported being ignored, as opposed to half of the participants.

### Analysis

The analyses were conducted in three stages. First, we examined prescores and immediate postscores for the experimental group by using repeated measures of multivariate analysis of variance, primarily for informational purposes. Then we used repeated measures to compare the experimental and the control groups by using the baseline, three-month, and one-year measures. We used Mauchly's test of sphericity to determine variance differences between the groups. If sphericity could not be assumed, we used the Huynh-Feldt *F* test. Decimal points in the degrees of

freedom indicate the use of the latter *F*. We computed effect sizes for the baseline and follow-up measures for the experimental group, following Rosenthal and Rosnow,<sup>57</sup> as well as between-group effect sizes at the one-year follow-up.

## RESULTS

### Short-term Outcomes

We were interested in the immediate effects of the intervention, comparing the baseline (T1) to T2 measure (about one week). For ethical reasons, we did not feel we could ask the comparison group to fill out the same rather long questionnaire twice in a one to two week period. Thus, the preliminary analyses examine within-subject changes for just the experimental group and are meant to be illustrative only. The more formal analyses examining long-term changes with the comparison group are presented in the next section.

At baseline, half of the experimental group was mildly to moderately depressed (BDI scores greater than or equal to 13). Immediately after treatment, none of the respondents was even mildly depressed; the means changed from 14.29 to 2.36,  $F(1, 68) = 104.23$ ;  $P < .001$ . As can be seen in Table 4, repeated measures analysis of variance indicated that all of the negative affect scores decreased significantly, including the BSI subscales of depressive, hostile, obsessive-compulsive, and anxiety symptoms, as well as interpersonal sensitivity, with Huynh-Feldt *F* values ranging from 27.12 to 63.35, *P* values were  $< .001$ . Figure 1 depicts the significant decline in all measures of negative affectivity.

The largest effect size was seen for the BDI at 1.45; in other words, the participants decreased by almost 1-1.5 SD (see Table 5). The next greatest difference was seen with obsessive-compulsive symptoms; the participants' scores dropped slightly over 1 SD. Most of the effect sizes for the other negative affect scales from the BSI approached 1 SD.

We also examined whether the positive outcomes increased concomitantly (see Table 4). Repeated measures analysis of variance showed that the participants reported statistically significant increases in life satisfaction, mastery, empathy, forgiveness, emotional intelligence, and religious experience, with Huynh-Feldt *F* values ranging from 7.21 to 60.45 and *P* values  $< .001$ . The effect sizes for positive outcome were more modest. They ranged from .33 SD for empathy to nearly a full SD for forgiveness (see Table 5).

All six of the general health and well-being subscales of the SF-36 also improved significantly (see Table 4). In other words, respondents reported better physical, emotional, and social functioning, and their ratings of their physical health, mental health, and energy increased significantly, with Huynh-Feldt *F* values ranging from 5.48 ( $P < .05$ ) to 57.78 ( $P < .001$ ). The effect size for improvement in social functioning was smallest (0.37), while mental health had the largest effect size (1.23) (see Table 5).

### Long-term Outcomes

We next examined whether these gains were sustained over a period of one-year follow-up relative to the comparison group by using repeated measures analysis of variance to contrast the

**Table 4.** Time 1 and Time 2 Means and SDs on Outcome Measures for Hoffman Participants

Outcome Measures	Pre	Post	df	F
<b>Negative Affect</b>				
BDI	14.29 (9.90)	2.36 (5.20)	1, 68	104.23***
<b>BSI</b>				
Depression	13.19 (5.79)	8.69 (3.17)	1, 67	50.28***
Hostility	8.15 (2.94)	6.33 (1.76)	1, 66	27.62***
Anxiety	11.81 (4.44)	8.40 (2.19)	1, 66	48.95***
Interpersonal sensitivity	9.09 (3.74)	6.41 (2.82)	1, 67	37.91***
Obsessive-compulsive	13.75 (4.53)	9.64 (2.79)	1, 67	63.35***
Somatization	10.50 (3.80)	8.32 (1.86)	1, 67	27.12***
<b>Positive Affect</b>				
Mastery	56.92 (14.18)	67.08 (9.03)	1, 69	47.69***
Forgiveness	80.90 (17.49)	96.77 (15.44)	1, 66	40.14***
Emotional intelligence	123.94 (14.93)	132.61 (13.02)	1, 69	34.27***
Life satisfaction	33.19 (6.56)	37.30 (6.19)	1, 68	32.91***
Empathy	42.88 (6.13)	44.82 (6.43)	1, 68	7.21***
Religious experience	84.03 (20.21)	100.24 (20.98)	1, 69	60.45***
<b>Health and Well-Being</b>				
Health rating	2.26 (.89)	1.77 (.84)	1, 68	29.03***
General health	15.29 (3.16)	17.57 (2.59)	1, 67	57.78***
Physical functioning	3.16 (1.18)	3.51 (1.09)	1, 68	5.48*
Emotional functioning	1.51 (1.32)	2.48 (0.99)	1, 68	34.05***
Social functioning	4.04 (1.30)	4.48 (1.02)	1, 68	8.29**
Energy/vitality	11.84 (3.50)	15.66 (3.28)	1, 68	77.51
Mental health	15.91 (4.29)	20.86 (3.72)	1, 68	85.81

BDI, Beck Depression Inventory; BSI, Brief Symptom Inventory.

\* $P < .05$ .

\*\* $P < .01$ .

\*\*\* $P < .001$ .

trajectories in negative affect, positive outcomes, and health and well-being. Again, if sphericity could not be assumed, we used the Huynh-Feldt  $F$  test. Decimal points in the degrees of freedom indicate the use of the latter  $F$ . All analyses covaried income

to control for differences in baseline between the two groups. In addition, we included an income  $\times$  time interaction, to determine if socioeconomic status influenced not only baseline well-being but also the cross-time trajectories. However, none of these were significant, and thus we will only report the group  $\times$  time interaction.

Table 6 presents both the raw mean differences for both groups at three points in time (baseline, three-month follow-up and one-year follow-up), as well as the means adjusted for income, which are in parentheses and italicized. As Table 6 indicates, the change in BDI was sustained for a year, group  $\times$  time interaction  $F(1.8, 125.2) = 5.39$ ;  $P < .01$ . Between groups, effect size calculations indicated that the participants were nearly .75 SD below the comparison group (see Table 5). Figure 2 indicates the pattern of change over time in the BDI. As can be seen, there was a slight increase from three months to a year, but the participants were still lower in symptoms than the controls. Inspection of the frequencies indicated that, after one year, 9 of the 54 (17%) remaining experimental participants had BDI scores over 13, indicating mild to moderate depression. In contrast, nearly one third of the comparison group still reported mild to moderate depression (31.2%).

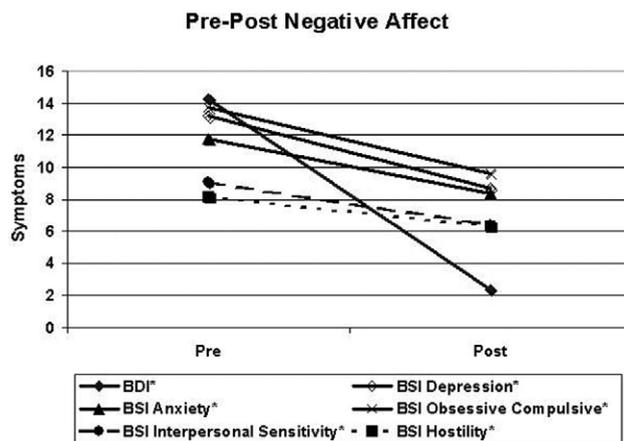


Figure 1. Pre-post negative affect.

**Table 5.** Effect Sizes Between Subjects and Within Subjects' Differences on Outcome Measures

Outcome Measures	Effect Size	
	Within Participant Group T1 and T2	Between Groups at T4
Negative Affect		
BDI	1.45	-0.73
BSI		
Hostility	0.73	-0.18
Anxiety	0.90	-0.29
Interpersonal sensitivity	0.80	-0.50
Obsessive-compulsive	1.05	-0.59
Somatization	0.68	-0.37
Positive Affect		
Mastery	0.64	-0.82
Forgiveness	0.65	-0.96
Emotional Intelligence	0.83	-0.61
Life Satisfaction	0.40	-0.64
Empathy	0.30	-0.31
Religious Experience	0.40	-0.79
Physical functioning	0.35	-0.30
Emotional functioning	0.38	-0.82
Social functioning	0.45	-0.37
Energy/vitality	0.50	-1.12
Mental health	0.52	-1.23

BDI, Beck Depression Inventory; BSI, Brief Symptom Inventory.

The BSI results were more mixed. Significant differences over a year's time were sustained in the anxiety, interpersonal sensitivity, and obsessive-compulsive subscales (see Table 6). The greatest difference was seen with obsessive-compulsive symptoms, with an effect size of .59, indicating slightly more than .50 SD difference. The mean trajectories for the hostility, depression, and somatization subscales were not significantly different between the two groups, although they were in the predicted directions. The increase in positive affect was sustained over the course of a year for all measures. The biggest effects were seen for forgiveness and for emotional intelligence (see Table 6). The effect size for emotional intelligence was .83; Figure 3 demonstrates that the difference continued to increase over the course of a year. Life satisfaction, empathy, and spirituality sustained their increases, but at a more modest level. Interestingly, the group by time interaction for mastery only approached significance,  $F(1.9, 120.7) = 2.78$ ;  $P = .07$ . However, the effect size, 0.64, was nearly identical to that of forgiveness, 0.65 (see Table 5).

The effects of the QP were also largely sustained for the health and well-being variables. Five of the seven scales were significantly different in the trajectories of change over time between the two groups (see Table 6). The largest change was seen in general health and in energy/vitality. The physical and social functioning did not show significant change. The effect sizes, however, painted a somewhat different picture (see Table 5). The effect sizes for both mental health and energy/vitality were

about .5; however, the effect size for health rating was only 0.06, despite significant differences in the trajectories. Inspection of the trajectories showed a large difference at the three-month follow-up, but no difference between the groups at the one-year follow-up.

### Mediators

We conducted an exploratory analysis to determine which factors accounted for the change in depressive symptoms, focusing primarily on changes in forgiveness and spirituality, given the centrality of their importance in the Quadrinity Process, as well as importance in the literature. We computed three hierarchical regression equations, examining residualized change in depression. The first simply examined the impact of program participation. The second included a second step that entered baseline spirituality and forgiveness into the equation. The third model examined, in effect, change in spirituality and forgiveness by including a third step, which entered spirituality and forgiveness from the one-year follow-up. Baseline depression program participation significantly predicted depression after one year, accounting for 18.8% of the variance (see Model 1 in Table 7). In the second regression equation, neither spirituality nor forgiveness contributed significantly to depression after one year (Model 2, change in  $R^2 = 0.01$ , not significant). In the third equation, we added spirituality and forgiveness at the one-year follow-up, essentially examining change in spirituality and forgiveness. This accounted for an additional 15.6% of the variance, and program participation was no longer significant. Because change in depression was not predicted by initial levels of either spirituality or forgiveness but was predicted by follow-up levels, this suggests that the impact of program participation on change in depression was mediated through its ability to increase spirituality and forgiveness.

### DISCUSSION

We examined whether a brief intervention for emotional education was successful in reducing self-report depressive symptoms and other forms of negative affectivity. We also sought to determine whether there were parallel increases in positive outcomes such as forgiveness, empathy, emotional intelligence, spiritual experiences, and life satisfaction as well as in self-reported health. We also sought to establish the process by which the intervention had its effects. The sample consisted of fairly high-achieving adults, at least financially, who nonetheless reported high levels of emotional and physical abuse, and many of whom exhibited mild to moderate depression. However, controlling for income did not erase the results, nor were there any income by time interactions.

We found significant changes in negative affect. Nearly half of the experimental group met the BDI criterion for mild to moderate depression at baseline; immediately after the treatment, none were even mildly depressed. The other negative affect symptoms also decreased significantly, including hostility, interpersonal sensitivity, anxiety, and obsessive-compulsive symptoms.

We followed the experimental and a comparison waiting list group for a year. At that time, 17% of the experimental group

**Table 6.** Mean Change in Outcome Measures by Group

Outcome Measures	Baseline		Three Months		One Year		Group *Time	
	Participants	Controls	Participants	Controls	Participants	Controls	df	F
<b>Negative Affect</b>								
BDI	13.46(12.86)	10.31(11.28)	2.87(2.62)	6.75(7.17)	4.86(4.86)	9.95(9.96)	1.8, 25.2	5.39**
<b>BSI</b>								
Depression	12.75(12.56)	11.99(12.27)	8.62(8.50)	10.39(10.57)	9.67(9.76)	11.44(11.30)	2, 132	1.76
Hostility	7.79(7.66)	7.96(8.16)	6.02(5.99)	6.59(6.65)	6.81(6.89)	7.55(7.42)	1.8, 20.8	.034
Anxiety	11.60(11.66)	10.25(10.16)	8.26(8.25)	9.07(9.10)	8.65(8.79)	9.72(9.50)	1.8, 18.7	3.33*
Interpersonal sensitivity	8.56(8.55)	8.11(8.13)	5.80(5.75)	7.00(7.08)	6.12(6.16)	7.63(7.57)	1.7, 14.0	3.10*
Obsessive-compulsive	13.49(13.42)	12.56(12.66)	9.61(9.58)	12.07(12.13)	10.05(10.27)	13.37(13.01)	2, 134	6.62**
Somatization	10.72(10.71)	10.41(10.42)	8.76(8.73)	9.54(9.59)	8.88(9.01)	10.52(10.32)	1.9, 27.5	1.74
<b>Positive Affect</b>								
Mastery	57.66(57.75)	57.63(57.47)	68.44(68.47)	61.74(61.69)	65.59(65.19)	58.83(59.57)	1.9, 20.7	2.78†
Forgiveness	79.78(12.86)	88.44(11.28)	96.13(2.62)	83.76(7.17)	95.60(4.86)	84.50(9.96)	1.9, 18.4	12.16***
Emotional intelligence	123.12(123.85)	121.32(120.13)	133.55(134.36)	124.37(123.04)	136.27(136.77)	119.75(118.95)	1.9, 30.1	11.05***
Life satisfaction	34.09(123.85)	36.91(120.13)	37.95(134.36)	37.46(123.04)	37.98(136.77)	35.56(118.95)	2, 132	5.55**
Empathy	41.63(41.82)	44.04(43.74)	44.44(44.75)	44.45(43.96)	43.54(43.70)	42.34(42.09)	2, 134	3.62*
Religious experience	84.88(85.25)	92.21(91.59)	102.42(102.85)	94.89(94.17)	99.73(100.24)	92.04(91.19)	1.7, 109.4	6.85**
<b>Health and Well-Being</b>								
Health rating	2.61(3.07)	3.00(2.61)	3.16(2.95)	3.07(3.00)	2.95(2.89)	2.89(3.16)	2, 136	3.37*
General health	15.09(19.10)	17.04(20.80)	17.30(21.79)	16.81(20.67)	17.00(21.45)	16.37(20.20)	2, 132	13.16***
Physical functioning	3.27(12.86)	3.15(11.28)	3.68(2.62)	3.62(7.17)	3.32(4.86)	2.85(9.96)	2, 134	1.07*
Emotional functioning	1.55(1.56)	2.07(2.05)	2.52(2.57)	2.15(2.07)	2.39(2.35)	1.78(1.83)	2, 136	4.75**
Social functioning	4.00(4.12)	4.11(3.91)	4.57(4.55)	4.33(4.36)	4.45(4.46)	4.04(4.04)	2, 136	.312**
Energy/vitality	11.64(11.77)	12.77(12.54)	15.76(15.90)	12.00(11.76)	14.57(14.69)	12.28(12.08)	2, 134	12.13***
Mental health	16.23(16.33)	17.19(17.02)	20.18(20.34)	17.44(17.19)	19.43(19.54)	17.10(16.93)	2, 136	6.29**

Values in parentheses are estimated marginal means with income as a covariate. Degrees of freedom with decimal points indicate the use of Huynh-Feldt F to correct for unsphericity.

BDI, Beck Depression Inventory; BSI, Brief Symptom Inventory.

\* $P < .05$ .

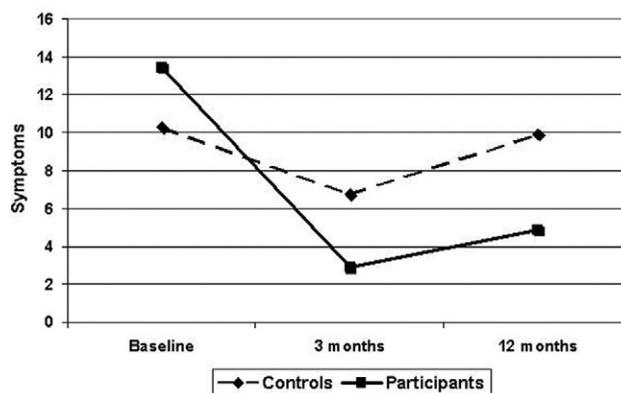
\*\* $P < .01$ .

\*\*\* $P < .001$ .

† $P < .07$ .

reported moderate levels of depression, as opposed to 33% of the control group. Three of the BSI subscales maintained their significance, including interpersonal sensitivity, obsessive-compulsive symptoms, and anxiety over a year; the rest were in the expected direction, but did not reach significance.

This relapse rate was very low. Gloaguen et al<sup>43</sup> reported relapse rates for antidepressant therapy ranging from 18% to 82%, with most at 50% or greater. For cognitive therapies, the relapse rate is better, ranging from 12% to 46%. Half were over 30%. Thus, the relapse rate of 17% for this intervention is comparable to the best of cognitive therapies, although it must be remembered that QP participants and controls had not been diagnosed with depression for the purposes of this study. In the present study, the number of participants who were lost to follow-up was

**Beck Depression Inventory****Figure 2.** Beck Depression Inventory.

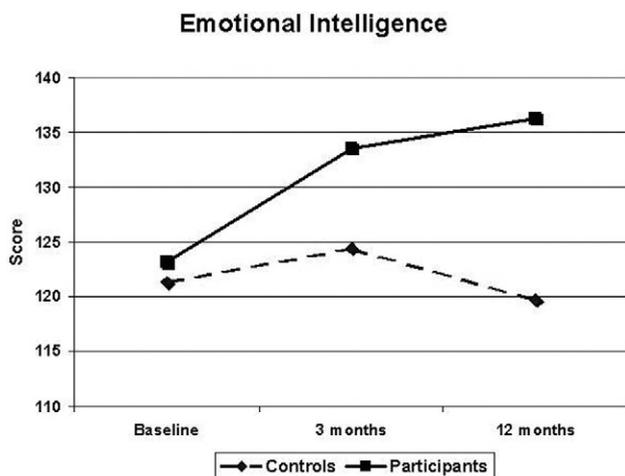


Figure 3. Emotional intelligence.

relatively high, and those who were most depressed were less likely to respond in both the experimental and the control groups. However, this is partially mitigated by our relative larger sample size. The cell sizes in most depression treatment studies are usually quite small, ranging from 10 to 20, whereas our final sample size was 54 and 32 for the experimental and control group, respectively. However, it may well be that more severely depressed persons require and are best advised to seek professional help.

A major focus of the QP is on improving positive adaptation as well as symptom reduction. We found significant increases in empathy, forgiveness, spiritual experiences, and life satisfaction that were sustained over the course of a year. Interestingly, the differences in emotional intelligence were not only sustained over the course of a year, but continued to increase. Importantly, we were able to show that increases in spiritual experiences and forgiveness mediated the decrease in depressive symptoms. This is important because it is at least a first step in explaining *how* the observed changes were effected.

Self-reported physical health also improved. Five of the seven measures showed sustained improvement over a year, with the largest changes in general health and energy/vitality. Physical and social functioning did not improve, which was not surprising in this relatively young sample.

The QP includes features that are currently very much of interest, especially in developmental psychopathology and in coping with trauma. These include the intergenerational transmission of dysfunctional family dynamics, the long-term effects of childhood abuse, the importance of writing personal narratives about trauma, and the importance of forgiveness and spirituality for adult mental health. Future research should explore the effects of specific aspects of the QP. For example, what proportion of the various effects is due to the focus on writing about childhood trauma and other negative experiences. This procedure has been shown to be efficacious in decreasing negative symptoms.<sup>27,28</sup> Further, the importance of the emphasis of the QP on forgiveness should also not be underestimated.<sup>58</sup> Forgiveness is associated with better mental and physical

health<sup>58</sup>; indeed, the effect of program participation was largely mediated through changes in both forgiveness and spirituality.

Elements of the QP may also be supported by a recent theory in adult development,<sup>59</sup> based partially on work by Curnow<sup>60</sup> on the development of wisdom. Curnow synthesized both European and Asian theories of wisdom and identified four elements common to most. These are self-knowledge, detachment, integration, and self-transcendence. These elements also appear to be present in the QP. As mentioned earlier, self-knowledge is the founding component of the process, primarily in terms of identifying internalized negative interaction patterns and understanding how these play out in one's current relationships. Participants learn to detach from these patterns, that is, they learn not to identify with them, by using a series of visual imagery and exercises to extract and extinguish them, thus facilitating integration of the previously warring aspects of the self. Transcendence is reflected in the development of the spiritual self, again through a series of guided imagery and exercises. Thus, the QP appears to be an exercise in adult development.

Several caveats should be mentioned. The participants were not randomly assigned to intervention and control groups. This would have been impossible, inasmuch as the sample was self-selected and participants paid a substantial sum to participate in the QP. A wait-list control strategy was the most feasible alternative. However, random assignment is not a panacea. Statistical controls for potential confounds permit more information to be included in the study, offering greater external validity. In the present study, the knowledge that the intervention and control groups differed only on income among the standard demographics suggests that this difference is not associated with other important demographic variables. Further, significant attrition occurred over the course of a year, and those who were most depressed were least likely to participate in the long-term follow-up. However, this was true for both the experimental and the control groups. It may be that an intervention like QP may be most effective for those with mild to moderate depression. Those whose depression is more severe may be best served by clinical treatment.

Like most clinical samples, this one was not representative. Less than half were male, most were white, and slightly less than half were married. Interestingly, 56% of the experimental group

Table 7. Residualized Regression Models Examining Mediators of Change in Depression

	Model 1 Beta	Model 2 Beta	Model 3 Beta
Baseline depression	.273**	.279*	.293**
Program participation	-.378***	-.376***	-0.17
Baseline forgiveness		0.087	0.193
Baseline religiosity		-0.072	0.125
One-Year forgiveness			-.253*
One-year religiosity			-.310**
R <sup>2</sup> change	0.188	0.01	.156***
R <sup>2</sup>	.188***	0.198***	0.354***

\* $p < .05$ .

\*\* $p < .01$ .

\*\*\* $p < .001$ .

reported family incomes greater than \$100,000 per year, suggesting that these were high-achieving individuals. However, a surprising number reported emotional and physical abuse as children, suggesting that their achievement may in part be compensatory. Studies of resilient children show that even those with high IQ levels who do well in school often report levels of anxiety and depression comparable to their more vulnerable peers.<sup>61</sup> Nonetheless, it is unclear whether this type of intervention would be as effective in a less well-educated group.

There has been a growing interest in complementary interventions, but they are rarely formally evaluated. A notable exception is the work done by Kabat-Zinn et al<sup>62</sup> and Miller et al<sup>63</sup> on reductions in anxiety with meditation practice. To our knowledge, however, this is the first systematic evaluation of a complementary intervention that focuses on promoting positive outcomes, as well as reducing psychological symptoms. While we did not diagnose the participants for clinical depression, the effect sizes for reduction in depressive symptoms, as assessed by the BDI, were comparable to state-of-the-art depression therapy such as cognitive behavior therapy. Gloaguen et al<sup>43</sup> found an average effect size for cognitive therapy versus a waiting list/placebo of  $-.82$  on the BDI, compared to  $-.73$  in the present study.

Future research should attempt to replicate these findings, both with the QP and with other interventions. From a positive psychology standpoint, these results are most encouraging. It would be interesting to determine if psychotherapy also results in increases in positive outcomes such as forgiveness and emotional intelligence. Positive psychologists should explore relationships between increases in forgiveness and spiritual experience and decreases in mental health symptoms. Those interested in relationships between religious participation and physical and mental health should also be encouraged to explore the effects of spiritual experience.

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