Differential Effects of Decisional and Emotional Forgiveness on Distress and Well-being: A Three-Wave Study of Indonesian Adults

SUPPLEMENTARY MATERIAL
Supplemental Text 1: Covariate Assessment

Transgressor Made Amends

At T_1, participants used a dichotomous response format (0 = No; 1 = Yes) to indicate whether the transgressor had attempted to make amends for the hurt that they recalled and briefly wrote about (i.e., “Did the person attempt to make amends [e.g., by offering an apology]?”).

Perceived Transgression Severity

At T_1, participants were asked to rate the severity of the transgression that they recalled and briefly wrote about (i.e., “Please rate the severity of the offense”) using a five-point response format (1 = Not at all severe; 5 = Very severe).

Financial and Material Stability

Participants completed both items (i.e., “How often do you worry about being able to meet normal monthly living expenses?” and “How often do you worry about safety, food, or housing?”) from the Financial and Material Stability domain of the Secure Flourishing Index (VanderWeele, 2017), each of which was rated using an 11-point response format (0 = Worry all of the time; 10 = Do not ever worry). The items were averaged for a total score.

Trait Forgivingness

The 10-item Trait Forgivingness Scale (Berry et al., 2005) was used to assess an individual’s tendency to forgive others across time and situations (e.g., “I am a forgiving person”). Items are rated using a five-point response format (1 = Strongly disagree; 5 = Strongly agree). After reverse scoring relevant items, responses are summed for a total score.

Harmonious Value

We used the nine-item Harmonious Value Scale (Kurniati et al., 2017) to assess a person’s tendency to value maintaining social harmony and avoiding rumination. The items (e.g., “It’s important to resolve any interpersonal conflicts immediately”) are rated on a five-
point response scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Responses to the items are summed for a total score.

**Religious Commitment**

Participants responded to the Religious Commitment Inventory-10 (Worthington et al., 2003). The 10-item measure assesses the extent to which an individual is involved in his/her religion (e.g., “I often read books and magazines about my faith”), and it has been validated for use with different religious traditions (including Christianity and Islam). Items are rated using a five-point response scale ranging from 1 (*Not at all true of me*) to 5 (*Totally true of me*). Responses to the items are summed for a total score.

**Intrinsic Religiousness**

We used the six-item Intrinsic subscale of the New Indices of Religious Orientation (Francis, 2007). The measure assesses the extent to which individuals integrate their religious faith into all parts of their lives, value personal religious practices to connect with God, and prioritize public religious practices to signal their commitment to God (e.g., “My religious beliefs really shape my whole approach to life”). A five-point response scale is used to rate each item (1 = *Disagree strongly*; 5 = *Agree strongly*). Responses to the items are summed for a total score.
### Table S1

**Baseline Characteristics of Participants Who Remained in the Cohort and Participants Who Were Lost to Follow-up**

| Characteristic                     | Retained (n = 595) | Lost to follow-up (n = 25) | p-value |
|------------------------------------|--------------------|----------------------------|---------|
|                                    | n (%)              | M ± SD                     | n (%)   | M ± SD |         |
| **Covariates**                     |                    |                            |         |        |
| Age                                | 21.95 ± 4.39       |                            | 21.92 ± 2.41 | .976 |         |
| Gender                             |                    |                            |         |        |
| Female or other                    | 326 (54.79)        |                            | 10 (40.00)   | .212 |         |
| Male                               | 269 (45.21)        |                            | 15 (60.00)   |       |         |
| Ethnic status                      |                    |                            |         |        |
| Javanese                           | 170 (28.57)        |                            | 6 (24.00)    | .628 |         |
| Tionghoa                           | 150 (25.21)        |                            | 5 (20.00)    |       |         |
| Other                              | 275 (46.22)        |                            | 14 (56.00)   |       |         |
| Educational attainment             |                    |                            |         |        |
| Up to high school equivalency      | 401 (67.39)        |                            | 17 (68.00)   | 1.000 |         |
| Postsecondary degree or higher     | 194 (32.61)        |                            | 8 (32.00)    |       |         |
| Marital status                     |                    |                            |         |        |
| Not married                        | 569 (95.63)        |                            | 24 (96.00)   | 1.000 |         |
| Married                            | 26 (4.37)          |                            | 1 (4.00)     |       | .695   |
| Religious status                   |                    |                            |         |        |
| Christian                          | 298 (50.08)        |                            | 11 (44.00)   |       | .019   |
| Muslim                             | 297 (49.92)        |                            | 14 (56.00)   |       |        |
| Transgressor made amends           |                    |                            |         |        |
| No                                 | 381 (64.03)        |                            | 21 (87.50)   | .032  |         |
| Yes                                | 214 (35.97)        |                            | 3 (12.50)    |       |        |
| Perceived transgression severity   | 3.97 ± 1.03        |                            | 4.33 ± 1.05  | .094  |         |
| Financial and material stability   | 5.61 ± 2.55        |                            | 5.32 ± 2.36  | .579  |         |
| Trait forgivingness                | 33.98 ± 6.15       |                            | 31.67 ± 6.85 | .073  |         |
| Harmonious value                   | 44.08 ± 4.97       |                            | 42.67 ± 6.29 | .176  |         |
| Religious commitment               | 31.40 ± 8.79       |                            | 27.16 ± 9.60 | .019  |         |
| Intrinsic religiousness            | 24.15 ± 4.13       |                            | 22.17 ± 3.87 | .021  |         |
| **Exposures**                      |                    |                            |         |        |
| Decisional forgiveness             | 23.57 ± 5.07       |                            | 22.21 ± 5.41 | .199  |         |
| Emotional forgiveness              | 22.80 ± 5.61       |                            | 21.92 ± 4.60 | .446  |         |
| **Outcomes**                       |                    |                            |         |        |
| **Distress**                       |                    |                            |         |        |
| Anxiety symptoms                   | 2.41 ± 1.66        |                            | 2.24 ± 1.76  | .609  |         |
| Depression symptoms                | 2.36 ± 1.66        |                            | 2.20 ± 1.15  | .631  |         |
| Suffering                          | 3.69 ± 2.41        |                            | 3.89 ± 2.02  | .676  |         |
| **Well-being**                     |                    |                            |         |        |
| Life satisfaction                  | 6.21 ± 2.17        |                            | 5.92 ± 2.38  | .521  |         |
| Happiness                          | 6.48 ± 2.02        |                            | 6.48 ± 2.40  | .998  |         |
| Mental health                      | 6.27 ± 2.28        |                            | 6.64 ± 2.36  | .428  |         |
| Physical health                    | 7.06 ± 1.88        |                            | 7.36 ± 2.12  | .438  |         |
| Meaning in life                    | 6.63 ± 2.26        |                            | 6.08 ± 2.27  | .233  |         |
| Sense of purpose                   | 6.81 ± 2.37        |                            | 6.52 ± 2.73  | .554  |         |
| Promote good                       | 8.14 ± 1.62        |                            | 8.32 ± 1.55  | .588  |         |
| Delayed gratification              | 7.54 ± 1.94        |                            | 7.64 ± 2.06  | .807  |         |
| Content with relationships         | 7.37 ± 2.04        |                            | 7.48 ± 1.58  | .793  |         |
| Satisfying relationships           | 6.74 ± 2.12        |                            | 6.52 ± 1.98  | .615  |         |

*Note. M = mean, SD = standard deviation. Percentages refer to the proportion of individuals within each inclusion category with that characteristic. p-values come from independent samples t-tests, χ², or Fisher’s exact tests that were used to examine the mean (SD) levels of the characteristic or the proportion of individuals within each category with that characteristic.*
### Table S2

**Distribution of Participant Characteristics in the Analytic Sample**

| Variable                                             | Time 1                          |             | M ± SD             | α [95% CI]          |
|-------------------------------------------------------|---------------------------------|-------------|--------------------|---------------------|
| Age, years (range: 18–55)                             | 21.95 ± 4.39                    |             |                    |                     |
| Gender                                                |                                 |             |                    |                     |
| Female                                                | 325 (54.62)                     |             |                    |                     |
| Male                                                  | 269 (45.21)                     |             |                    |                     |
| Other                                                 | 1 (0.17)                        |             |                    |                     |
| Ethnic status                                         |                                 |             |                    |                     |
| Javanese                                              | 170 (28.57)                     |             |                    |                     |
| Tionghoa                                              | 150 (25.21)                     |             |                    |                     |
| Other                                                 | 275 (46.22)                     |             |                    |                     |
| Educational attainment                                |                                 |             |                    |                     |
| Up to high school equivalency                         | 401 (67.39)                     |             |                    |                     |
| Postsecondary degree or higher                        | 194 (32.61)                     |             |                    |                     |
| Marital status                                        |                                 |             |                    |                     |
| Not married                                           | 569 (95.63)                     |             |                    |                     |
| Married                                               | 26 (4.37)                       |             |                    |                     |
| Religious status                                      |                                 |             |                    |                     |
| Christian                                             | 298 (50.08)                     |             |                    |                     |
| Muslim                                                | 297 (49.92)                     |             |                    |                     |
| Transgressor made amends                               |                                 |             |                    |                     |
| No                                                    | 381 (64.03)                     |             |                    |                     |
| Yes                                                   | 214 (35.97)                     |             |                    |                     |
| Perceived transgression severity (range: 1–5)         | 3.97 ± 1.03                     |             |                    |                     |
| Financial and material stability (range: 0–10)         | 5.61 ± 2.55                     | .75 [.72, .78]|                    |                     |
| Trait forgivingness (range: 11–50)                    | 33.98 ± 6.15                    | .81 [.79, .83]|                    |                     |
| Harmonious value (range: 23–54)                       | 44.08 ± 4.97                    | .79 [.77, .81]|                    |                     |
| Religious commitment (range: 10–50)                   | 31.40 ± 8.79                    | .91 [.90, .92]|                    |                     |
| Intrinsic religiousness (range: 6–30)                 | 24.15 ± 4.13                    | .86 [.84, .88]|                    |                     |
| Decisional forgiveness (range: 6–30)                  | 23.57 ± 5.07                    | .93 [.92, .94]|                    |                     |
| Emotional forgiveness (range: 8–40)                   | 22.80 ± 5.61                    | .79 [.77, .81]|                    |                     |
| Anxiety symptoms (range: 0–6)                         | 2.41 ± 1.66                     | .80 [.78, .82]|                    |                     |
| Depression symptoms (range: 0–6)                      | 2.36 ± 1.66                     | .64 [.60, .68]|                    |                     |
| Suffering (range: 3–10)                               | 3.69 ± 2.41                     | .93 [.92, .94]|                    |                     |
| Life satisfaction (range: 0–10)                       | 6.21 ± 2.17                     |             |                    |                     |
| Happiness (range: 0–10)                               | 6.48 ± 2.02                     |             |                    |                     |
| Mental health (range: 0–10)                           | 6.27 ± 2.28                     |             |                    |                     |
| Physical health (range: 0–10)                         | 7.06 ± 1.88                     |             |                    |                     |
| Meaning in life (range: 0–10)                         | 6.63 ± 2.26                     |             |                    |                     |
| Sense of purpose (range: 0–10)                        | 6.81 ± 2.37                     |             |                    |                     |
| Promote good (range: 0–10)                            | 8.14 ± 1.62                     |             |                    |                     |
| Delayed gratification (range: 0–10)                   | 7.54 ± 1.94                     |             |                    |                     |
| Content with relationships (range: 0–10)              | 7.37 ± 2.04                     |             |                    |                     |
| Satisfying relationships (range: 0–10)                | 6.74 ± 2.12                     |             |                    |                     |
| Time 2                                                |                                 |             |                    |                     |
| Decisional forgiveness (range: 6–30)                  | 23.94 ± 4.74                    | .94 [.93, .95]|                    |                     |
| Emotional forgiveness (range: 8–40)                   | 23.72 ± 5.42                    | .81 [.79, .83]|                    |                     |
| Anxiety symptoms (range: 0–6)                         | 2.20 ± 1.67                     | .82 [.80, .84]|                    |                     |
| Depression symptoms (range: 0–6)                      | 2.13 ± 1.62                     | .72 [.69, .75]|                    |                     |
| Suffering (range: 0–10)                               | 3.66 ± 2.31                     | .95 [.94, .96]|                    |                     |
| Life satisfaction (range: 0–10)                       | 6.47 ± 2.14                     |             |                    |                     |
| Happiness (range: 0–10)                               | 6.41 ± 2.04                     |             |                    |                     |
| Variable                                      | Mean ± SD | CI         |
|----------------------------------------------|-----------|-----------|
| Mental health (range: 0–10)                  | 6.48 ± 2.03 | .96 [.96, .96] |
| Physical health (range: 0–10)                | 7.06 ± 1.92 | .78 [.78, .82] |
| Meaning in life (range: 0–10)                | 6.71 ± 2.14 | .85 [.85, .88] |
| Sense of purpose (range: 0–10)               | 6.90 ± 2.23 | .78 [.78, .82] |
| Promote good (range: 0–10)                   | 7.91 ± 1.62 | .80 [.78, .82] |
| Delayed gratification (range: 0–10)          | 7.34 ± 1.83 | .85 [.85, .88] |
| Content with relationships (range: 0–10)     | 7.34 ± 1.80 | .94 [.94, .96] |
| Satisfying relationships (range: 0–10)       | 6.86 ± 1.95 | .94 [.94, .96] |

**Time 3**

| Variable                                      | Mean ± SD | CI         |
|----------------------------------------------|-----------|-----------|
| Decisional forgiveness (range: 6–30)         | 24.12 ± 5.02 | .96 [.96, .96] |
| Emotional forgiveness (range: 8–40)          | 24.30 ± 5.54 | .78 [.78, .82] |
| Anxiety symptoms (range: 0–6)                | 2.12 ± 1.64 | .85 [.85, .88] |
| Depression symptoms (range: 0–6)             | 2.07 ± 1.69 | .78 [.78, .82] |
| Suffering (range: 0–10)                      | 3.73 ± 2.33 | .94 [.94, .96] |
| Life satisfaction (range: 0–10)              | 6.64 ± 2.13 | .94 [.94, .96] |
| Happiness (range: 0–10)                      | 6.61 ± 2.04 | .94 [.94, .96] |
| Mental health (range: 0–10)                  | 6.61 ± 1.99 | .94 [.94, .96] |
| Physical health (range: 0–10)                | 7.11 ± 1.81 | .94 [.94, .96] |
| Meaning in life (range: 0–10)                | 6.76 ± 2.14 | .94 [.94, .96] |
| Sense of purpose (range: 0–10)               | 6.90 ± 2.24 | .94 [.94, .96] |
| Promote good (range: 0–10)                   | 7.82 ± 1.64 | .94 [.94, .96] |
| Delayed gratification (range: 0–10)          | 7.33 ± 1.79 | .94 [.94, .96] |
| Content with relationships (range: 0–10)     | 7.34 ± 1.81 | .94 [.94, .96] |
| Satisfying relationships (range: 0–10)        | 6.96 ± 1.91 | .94 [.94, .96] |

*Note.* CI = confidence interval, $M$ = mean, $SD$ = standard deviation, $\alpha$ = alpha (estimated internal consistency).
**Table S3**

Cross-sectional and Prospective Pearson Correlations of Decisional and Emotional Forgiveness with Distress and Well-being Outcomes

| Outcome (T₁)          | Decisional forgiveness (T₁) | Emotional forgiveness (T₁) |
|-----------------------|-----------------------------|----------------------------|
| **Distress**          |                             |                            |
| Anxiety symptoms      | -.17 [-.24, -.09]***        | -.17 [-.25, -.10]***       |
| Depression symptoms   | -.23 [-.30, -.15]***        | -.17 [-.25, -.09]***       |
| Suffering             | -.22 [-.30, -.15]***        | -.16 [-.23, -.08]***       |
| **Well-being**        |                             |                            |
| Life satisfaction     | .26 [.18, .33]***           | .21 [.13, .29]***          |
| Happiness             | .26 [.19, .34]***           | .22 [.14, .29]***          |
| Mental health         | .28 [.20, .35]***           | .22 [.14, .29]***          |
| Physical health       | .18 [.10, .26]***           | .15 [.07, .23]***          |
| Meaning in life       | .24 [.17, .32]***           | .17 [.09, .24]***          |
| Sense of purpose      | .19 [.12, .27]***           | .09 [.01, .17]*            |
| Promote good          | .30 [.22, .37]***           | .19 [.11, .26]***          |
| Delayed gratification | .16 [.08, .23]***           | .11 [.02, .18]*            |
| Content with relationships | .24 [.16, .31]***   | .16 [.08, .24]***          |
| Satisfying relationships | .30 [.23, .37]***       | .19 [.12, .27]***          |

| Outcome (T₃)          | Decisional forgiveness (T₂) | Emotional forgiveness (T₂) |
|-----------------------|-----------------------------|----------------------------|
| **Distress**          |                             |                            |
| Anxiety symptoms      | -.12 [-.20, -.04]**         | -.16 [-.24, -.08]***       |
| Depression symptoms   | -.14 [-.21, -.06]**         | -.15 [-.23, -.07]**        |
| Suffering             | -.19 [-.26, -.11]**         | -.12 [-.20, -.04]**        |
| **Well-being**        |                             |                            |
| Life satisfaction     | .23 [.15, .31]***           | .10 [.02, .18]*            |
| Happiness             | .22 [.14, .30]***           | .12 [.04, .20]**           |
| Mental health         | .23 [.16, .31]***           | .16 [.08, .23]**           |
| Physical health       | .24 [.16, .31]***           | .13 [.05, .21]**           |
| Meaning in life       | .19 [.12, .27]***           | .10 [.02, .18]*            |
| Sense of purpose      | .23 [.16, .31]***           | .10 [.02, .18]*            |
| Promote good          | .22 [.15, .30]***           | .07 [-.01, .15]            |
| Delayed gratification | .23 [.15, .30]***           | .08 [-.00, .15]            |
| Content with relationships | .25 [.18, .33]***   | .13 [.05, .21]**           |
| Satisfying relationships | .21 [.14, .29]***       | .15 [.07, .22]***          |

*Note. *p < .05, **p < .01, ***p < .001.*
Timing of assessments

$T_1$: 7 to 17 December 2020

Covariates
All covariates were assessed at $T_1$, which was prior to the wave in which the exposures were assessed.

$T_2$: 4 to 15 January 2021

Exposures
Decisional forgiveness and emotional forgiveness were assessed at $T_2$.

$T_3$: 1 to 13 February 2021

Outcomes
Indicators of distress and components of well-being were assessed at $T_3$.

*Figure S1*. Visual Depiction of Assessment Timings for Covariate, Exposure, and Outcome Variables in the Primary Analysis.
References

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