

Dissociation as a mediator between perceived parental rearing style and depression in an adult
community population using college students

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Abstract

The purpose of this study was to investigate the mediating process in the relationship between early parenting and depressive symptoms. In particular, the potential role of dissociation as a mediator between the perceived parental rearing style during childhood and depression in adulthood was examined, along with the effect of avoidance as a coping style. A total of 449 undergraduates (231 men and 218 women) completed 5 measures: the Parental Bonding Instrument (PBI), the Parenting Scale of Inconsistency (PSI), the Dissociative Experiences Scale (DES), the Depression Scale of the GHQ-60, and the Tri-axial Coping Scale (TAC-24). Path analyses were conducted to test for mediating effects. The findings showed different paths by gender. For men, dissociation mediated the relationship between overprotective parenting and depressive symptoms, although for women,

dissociation mediated the relationship between inconsistent parenting and depressive symptoms.

Avoidance as a coping style had no effect on depressive symptoms. The mediating role of dissociation between perceived parenting style and depressive symptoms was confirmed in a community sample.

Some clinical and research implications of the study were outlined.

It has long been proposed that the parent-child relationship is a major determinant of the child's development and eventual psychological health in adulthood. In the 1950s, Bowlby (1982) highlighted the adverse effects of maternal deprivation on child development, and Ainsworth (1989) suggested that a stable parent-child relationship develops the child's ability to tolerate separation from the mother for long periods and with less distress. Several studies based on this proposition have focused on the qualitative aspects of the parent-child relationship as a vulnerability factor in adult psychopathology, particularly depression. To evaluate the proposition empirically, Parker, Tupling, and Brown (1979) developed the Parental Bonding Instrument (PBI), which assesses two distinct dimensions of parenting style: *care* and *overprotection*. Their results indicated that depressive symptoms in adulthood were related to perceptions of both low parental care and high levels of overprotection during childhood (Parker, 1979). This association has also been confirmed by a number of other studies (Oakley-Browne, Joyce, Wells, Bushnell, & Hornblow, 1995; Rey, 1995).

While the studies cited above have consistently demonstrated that low care and high overprotection during childhood affect vulnerability to depression in adulthood, they have not demonstrated how the causal link might be mediated. According to Beck's (1967) cognitive model of depression, the individual's negative schema and cognitions develop the depressive tendency, and the schema/cognition style is influenced by maladaptive parent-child interaction in childhood. A series of studies focusing on the cognitive function as mediation between the quality of early parenting experiences and adult depression indicated that locus of control (Richman & Flaherty, 1986), core belief (Shah & Waller, 2000), and dysfunctional attitude (Randolph & Dykman, 1998) might be mediators.

The mediations described above, however, were all related to the individual's conscious mind, while it is clear that people also use unconscious strategies, i.e., defense mechanisms, to cope with stress (Cramer, 1998). Although defense mechanisms are postulated to function so as to protect the self from excessive anxiety and are part of normal development, they seem to become pathological if used excessively (Freud, 1936). Offen, Thomas, and Waller (2003) recently focused on dissociation as a defense mechanism, indicating that, in clinical populations, dissociation mediated the relationship

between overprotective parenting and depressive symptoms. Dissociation is defined as a disruption in the usually integrated functions of consciousness, memory, identity, or perception of the environment (American Psychiatric Association, 1994) and is generally thought to provide an escape mechanism from one's awareness of distressing and confusing emotional states by compartmentalizing information and affect (Putnam, 1993). While temporal dissociation seems adaptive to stressful incidents (Ludwig, 1983), chronic use of dissociation could impair the integration of an individual's memory and self, thereby increasing susceptibility to serious psychopathology (Putnam, 1993). To date, it has been shown that a high frequency of dissociative experiences seems to be related to various mental disorders and psychologically related problems, such as somatization disorder (Badura, Reiter, Altmaier, Rhomberg, & Elas, 1997), borderline personality (Herman, Perry, & van der Kolk, 1989), self-injurious behaviour (van der Kolk, Perry, & Herman, 1991), and hallucinatory experiences (Yoshizumi, Murase, Honjo, Kaneko, & Murakami, 2004).

The main purpose of the present study was to confirm, using college students, that the findings of Offen et al (2003) can be applied to a general population, i.e., that the mediation effect of dissociation between perceived parental style during childhood and depressive symptoms in adulthood occurs also in a normal adult community population, as it does in Offen's clinical population. In addition, the study sought to expand the work of Offen et al. in two ways. The first was to further explore dysfunctional parenting beyond the care and overprotection dimensions examined by Offen et al. The additional dimension was that of *inconsistent parenting*. A number of studies have indicated that dissociative symptoms are markedly observed in physically and/or sexually abused children (Chu & Dill, 1990; Ross et al., 1990): The specific parenting style of abusive parents seems to be a lack of consistent parenting behaviour in daily life, a condition that has adverse effects on child socialization (Helfer, Kempe, & Krugman, 1997). Moreover, parental mood instability affects the externalizing of problematic behaviour in children (Prinz et al., 2004). A pattern of giving double-bind messages, a form of communication wherein a person receives inconsistent messages, has also been found in cases of abusive parents (Blizard, 2003). Thus, an inconsistent parenting style, expressed in daily life through conflicting moods, behaviour, and attitudes to children, also seems to have a critical effect on

the mental health of children, especially with respect to dissociation.

The second expansion was to compare the effects of dissociation against the effects of using avoidance as a coping style on the relationship between parenting style and depression. Although Offen et al. (2003) speculated that continued use of dissociation prevents individuals from developing effective cognitive strategies to cope with practical difficulties, thereby rendering them vulnerable to depression, this hypothesis had not been tested. A number of studies have suggested that the use of cognitive avoidance tends to increase the risk of psychological problems in abused children (Tull, Gratz, Salters, & Roemer, 2004). Moreover, several studies have indicated that avoidance as a coping style has a role of mediator between abusive experiences and stress-related symptoms, including depression (Bal, van Oost, de Bourdeaudhuij, & Crombez, 2003). Therefore, a comparison would clarify whether dissociation as a defense mechanism or avoidant coping as a conscious strategy to stress has a greater influence on depressive tendencies.

Method

Participants

A total of 449 participants (231 men and 218 women, mean age: 19.8 years), undergraduate students from private universities, were randomly selected from different areas in central Japan. The research proposal underwent the scrutiny of the universities' institutional review boards. All participants were volunteers, and were informed at the start that the outcome would not affect their course grades. After orientation, participants supplied demographic information (gender and age), and completed a battery of five questionnaires.

Measures

The Parental Bonding Instrument

The Parental Bonding Instrument (PBI) (Parker et al., 1979) is a 25-item self-reporting measure of an individual's perception of both parents' rearing practices up to age 16. It consists of two subscales: *care* (12 items) and *overprotection* (13 items). Participants were asked to assess separately the parenting styles of father and mother, and to rate each item on a 4-point Likert scale (from 0 to 3).

The reliability and the validity of the scale have been reported satisfactory (Parker et al., 1979). The total care score ranged from 0 to 36, with higher scores indicating a more careful parent. Total overprotection scores ranged from 0 to 39, with higher scores indicating a more overprotective parent. The Japanese version of the PBI was translated by Kitamura (1995), and both internal reliability and validity have been confirmed (Ogawa, 1991). Since the scores for father and mother were moderately correlated, they were combined, and averaged care and overprotection scores between parents were calculated.

The Parenting Scale of Inconsistency

The Parenting Scale of Inconsistency (PSI) (Yoshizumi, Murase, Murakami, & Takai, 2006) was originally designed to assess inconsistent parenting style, and its process of development has been reported in detail elsewhere (Yoshizumi et al., 2006). Participants were asked to assess separately the inconsistent rearing practices of their parents during their first 16 years (e.g., “Parents at times treated me well, while at other times they thoughtlessly hurt my feelings”), and to rate each item on a 4-point Likert scale (from 0 to 3), as in the PBI. The PSI consists of 12 items, having demonstrated reliability and validity (Yoshizumi et al., 2006). Total scores ranged from 0 to 36, higher scores indicating a less consistent parent. Once again, paternal and maternal results were moderately correlated, so they were combined: averaged inconsistency scores between parents were calculated.

The Depression scale of the General Health Questionnaire

The GHQ-28 (Goldberg & Hillier, 1979) is a scaled version of the General Health Questionnaire (GHQ) (Goldberg, 1978) designed on the basis of results from principal component analysis, indicating the construction of four subscales: Somatic Symptoms, Anxiety/Insomnia, Social Dysfunction, and Severe Depression; in this study, however, the Depression scale alone was used. This consists of seven items which the participants rated on a 4-point Likert scale (from 0 to 3); total depression scores ranged from 0 to 21, higher scores indicating more depressive participants. The Japanese version was translated by Nakagawa and Daibou (1996), and the validity of the scale is satisfactory.

The Dissociative Experiences Scale

The Dissociative Experiences Scale (DES) (Bernstein & Putnam, 1986; Carlson & Putnam, 1993) is a 28-item self-report measure that assesses frequency of various experiences of dissociative phenomena, translated into Japanese by Umesue, Matsuo, Iwata, and Tashiro (1996). Participants were instructed to rate each item on an 11-point scale (from 0 to 100 in intervals of 10). Average scale scores were calculated. The scale has been shown to have good reliability and validity (Bernstein & Putnam, 1986; Carlson & Putnam, 1993).

The Tri-Axial Coping Scale 24-item Version

A scale designed to assess avoidance as a coping style was extracted from the Tri-Axial Coping Scale (TAC-24) (Kamimura, Ebihara, Sato, Togasaki, & Sakano, 1995), which was developed to evaluate individual tendencies to adopt certain strategies as response to cope with stressful events. Participants were asked to rate six items concerning abandonment, postponement, and evasion of responsibility for solving problems on a 5-point Likert scale (from 1 to 5). The alpha-coefficient was .81. Total scores ranged from 6 to 30, with higher scores indicating a tendency to adopt more avoidance as a coping strategy.

Analysis

The path models were estimated using AMOS 4 (Arbuckle & Wothke, 1999). The maximum likelihood method of parameter estimation was used to derive estimates and was performed on the variance-covariance matrix. Means and standard deviations, along with the correlation matrix of all variables, are shown in Table 1 for men and Table 2 for women. Overall model fit was assessed by examining the chi-square fit, the Goodness of Fit Index (*GFI*), the Comparative Fit Index (*CFI*), and the Root Mean Square Error of Approximation (*RMSEA*). The potential role of gender in moderating relationships was examined by testing the model simultaneously on separate samples of men and women. Changes in chi-square values relative to changes in degrees of freedom (chi-square difference tests) were used to compare the nested models. Finally, the chi-square difference tests between the models with and without the direct effect of a relevant parenting style on depression were used to determine if a mediation effect existed, where nonsignificance indicated potential mediation.

Results

Hypothesized Structural Equation Model

The structural equation model was tested in the following way: Three kinds of parenting style—care, overprotection, and inconsistency—were hypothesized to have both direct causal pathways and indirect mediated causal pathways to depression in adulthood, and were shown to co-vary, accounting for the conceptual overlap among constructs. Dissociation and avoidant coping were tested as potential mediators of the relationship between parenting style and depression. It was assumed that disturbances to both dissociation and avoidant coping could be correlated, because these variables seemed to have more shared influences than could be accounted for by the three forms of parenting alone. The age of participants was controlled against depression, dissociation, and avoidant coping style, because it was speculated that age is a potential variable which may affect other variables.

Evaluation of dissociation and avoidant coping as mediators between perceived parenting style and depression in adulthood

First, to test the moderating influence of gender, the same model was tested simultaneously on separate samples of men and women, with no constraints imposed. Although the overall fit of the model was adequate: $\chi^2 (df = 6) = 7.65, p = ns, GFI = .995, CFI = .997,$ and $RMSEA = .025$ with a 90% confidence interval 0–.070, the critical ratio for differences method found significant differences between men and women on the two paths: the one from overprotective parenting to dissociation ($z = 2.94, p < .01$), and the other from inconsistent parenting to dissociation ($z = 1.97, p < .05$). Thus, a modified model, in which all paths except for the above two were constrained so as to be equal across gender, was tested. The overall fit of the modified model was also adequate: $\chi^2 (df = 18) = 21.5, p = ns, GFI = .987, CFI = .994,$ and $RMSEA = .021$ with a 90% confidence interval 0–.049, while the proportion of variances of depression explained was relatively low (.21 for men, .23 for women). The nonsignificant chi-square difference ($\chi^2 (df = 12) = 13.8, p = ns$) in the modified model, as compared with the model with no equality constraint between men and women, confirmed that the relationships identified seem to be equal across both genders, except for those between overprotective parenting and

dissociation, and between inconsistent parenting and dissociation.

In the modified model for men (Figure 1), overprotective parenting was positively related to dissociation ($\beta=.23, p<.01$), and dissociation was associated positively with depression ($\beta=.33, p<.001$), while the direct effect of overprotective parenting on depression was nonsignificant. Moreover, the chi-square difference ($\chi^2(df=1)=0.67, p=ns$) between the models with and without the direct effect of overprotection on depression was nonsignificant. Thus, it would appear that dissociation for men mediates the relationship between overprotective parenting and depression. Although for women (Figure 2), inconsistent parenting was positively related to dissociation ($\beta=.26, p<.01$), and dissociation was associated positively with depression ($\beta=.33, p<.001$), the direct effect of inconsistent parenting on depression was nonsignificant. Moreover, the chi-square difference ($\chi^2(df=1)=1.26, p=ns$) between the models with and without the direct effects of inconsistent parenting on depression was nonsignificant. Thus, it would appear that dissociation for women mediates the relationship between inconsistent parenting and depression. In addition, for both men and women, out of the three types of parenting, it was care parenting that had a negative direct effect on depression ($\beta=-.22, p<.001$ for men, $\beta=-.23, p<.001$ for women). Avoidant coping, however, had no significant effect on depression in either men or women.

Discussion

The primary aim of the present study was to verify, in an adult community population of college students, the mediating role of dissociation between perceived parenting style and depressive symptoms in adulthood, and indeed, such dissociation with a mediating role was confirmed in our participants as well as in Offen's (2003) clinical population. In addition, a new finding concerning gender differences related to the mediation of dissociation was found. For men, dissociation served as a mediator of the relationship between overprotective parenting and depression, which was consistent with the findings of Offen et al. (2003). It is, in fact, plausible that the Offen result might reflect male characteristics because, among their participants, the number of men ($n=25$) was over twice that of women ($n=11$). Parental overprotection has been reported to be a risk factor for a number of

psychiatric diseases and problems: eating disorder (Meyer & Gillings, 2004), obsessive-compulsive disorder (Yoshida, Taga, Matsumoto, & Fukui, 2005), and social phobia (Bögels, van Oosten, Muris, & Smulders, 2001). It is speculated that overprotective parental behaviour may impede the child's autonomy and cause isolation from social experiences (Bögels et al., 2001), in turn impairing the acquisition of social skills (Youngren & Lewinsohn, 1980). The deprivation of child autonomy by overprotective parenting might adversely affect the nature of the defense mechanisms used, typically by eliciting the chronic usage of dissociation, particularly in men. For women, in contrast, dissociation served to mediate the relationship between inconsistent parenting and depression. Inconsistent parenting, upon which this study especially focused, has been empirically shown to be specific to abusive parents (Blizard, 2003; Helfer et al., 1997). It may create intense stress and confusion, influencing the future dissociative tendencies of children (Mann & Sanders, 1994). Moreover, Putnam (1997) proposes that inconsistent parenting in daily situations deteriorates and disrupts the process of children modeling and internalizing their parents' behaviour, which is necessary if children are to construct normal behavioural states. These results might indicate that inconsistent parenting encourages dissociation, especially in women. In both men and women, care parenting, out of the three kinds of parenting styles examined, retained a significant direct effect on depression, even when considering the effect of dissociation and avoidance on depression; this is consistent with the finding that low care parenting is primary in predicting depression (Sato, Uehara, Narita, Sakado, & Fujii, 2000). In addition, although care, over-protective, and inconsistent parenting styles are reported to be distinct components of parenting styles each other (Yoshizumi, et al., 2006), the results of simple correlations indicated that three parenting styles were highly interrelated in both men and women (Table 1 & Table 2). So it was suggested that over-protective parenting style/ inconsistent parenting style also have an effect on depression through shared variance with care parenting style.

As stated above, this study also aimed to compare the effect of dissociation with that of the individual's use of avoidance as a coping style on the relationship between parenting style and depression. Dissociation and avoidant coping seem to share a conceptual overlap (Badura et al., 1997), but the present findings suggest that dissociation has more influence on depression in adulthood.

Repeated entry into a dissociative state of consciousness could produce significant disturbances in the continuity of an individual's memory and integration of self (Putnam, 1993). In experimentally controlled studies, those who had a tendency to dissociate demonstrated more fragmentation of aversive memory as well as more anxiety than those who did not (Kindt & van den Hout, 2003). Moreover, the tendency to dissociate was related to difficulty in recalling autobiographical memories in the case of borderline personality disorder (Jones et al., 1999). According to these studies, dissociation seems to have a close link with gaps in memory continuity, which might adversely affect emotional stability.

The present study had some limitations that must be considered when planning future research. First, due to the cross-sectional design of this study, it could not determine if the hypothesized causal direction might be reversible, i.e., depression might cause dissociative response. However, persistent dissociative symptoms prior to and following traumatic events seem to predict a prognosis for PTSD (Murray, Ehlers, & Mayou, 2002). Furthermore, dissociation appears to have a mediating role between sexual abuse and a variety of mental health outcomes (Kisiel & Lyons, 2001). These might indicate that the tendency to dissociate could develop into a predispositional response to depression. Only longitudinal studies can show the direction of the relationship between these variables. Second, the present results might fluctuate because they were based mainly on the values of the regression coefficients, so even minor fluctuations in the correlations could yield somewhat different results. Replicable tests of the same design as this study are needed to determine if the current results can be generalized. Third, this study examined only college students, so the present results might not be applicable to other age groups. A study based on college students, however, would be valuable in assessing vulnerable factors contributing to depression, given that this age group seems to be one in which individuals are at the greatest risk of depression. Fourth, this study did not control for several variables that may affect depression, such as social economic status, educational level, and current health problems. These variables should be taken into account in the design of a future study aimed to confirm or elaborate the present results. The final limitation relates to the measures used in the study. The low explained variance in depressive symptoms diminished the validity of the results, which

derived from the depression subscale of the GHQ (consisting of only seven items) used in the study. It might be appropriate in future research to use a more extensive measure such as the Beck Depression Inventory (BDI) (Beck, Steer, & Garbin, 1988), which has been used in a number of studies related to depression, including Offen et al. (2003). Moreover, null results obtained with avoidant coping might be dependent on the TAC-24 used in the study, so future research would need to use a more validated measure such as the CISS (Endler & Parker, 1990).

In summary, the present study substantiated, in an adult community population using college students, Offen's finding of a mediating role of dissociation between parenting style and adult depression. The results also added new information about gender differences. For men, dissociation mediated the relationship between an overprotective rearing style and depression, although for women, dissociation mediated the relationship between an inconsistent rearing style and depression. Avoidance as a coping style had no effect on depressive symptoms when controlling for the effect of dissociation. It was suggested that, in treating depression, an individual tendency to dissociate should be focused on as a vulnerability factor.

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Table 1

Means, Standard Deviations, and Correlation Matrix for men (n=231)

Variable	1.	2.	3.	4.	5.	6.	7.
1. Age	--	.024	.040	-.048	.076	-.069	.029
2. Care		--	-.557 ***	-.612 ***	-.120	-.160 *	-.269 ***
3. Overprotection			--	.617 ***	.238 ***	.163 *	.188 **
4. Inconsistency				--	.129	.128	.192 **
5. Dissociation					--	.171 **	.329 ***
6. Avoidant coping						--	.149 *
7. Depression							--
Mean	20.0	24.3	12.1	11.8	17.8	15.3	7.2
SD	1.1	5.5	5.8	6.3	14.6	4.7	5.4

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

Table 2

Means, Standard Deviations, and Correlation Matrix for women (n=218)

Variable	1.	2.	3.	4.	5.	6.	7.
1. Age	--	.017	-.019	-.130 *	-.058	.068	.042
2. Care		--	-.490 ***	-.534 ***	-.206 **	-.051	-.336 ***
3. Overprotection			--	.576 ***	.098	.147 *	.177 **
4. Inconsistency				--	.248 ***	.202 **	.285 ***
5. Dissociation					--	.207 **	.453 ***
6. Avoidant coping						--	.189 **
7. Depression							--
Mean	19.7	26.1	11.6	12.0	18.3	14.0	7.5
SD	.74	5.5	5.4	6.3	13.9	4.2	5.5

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

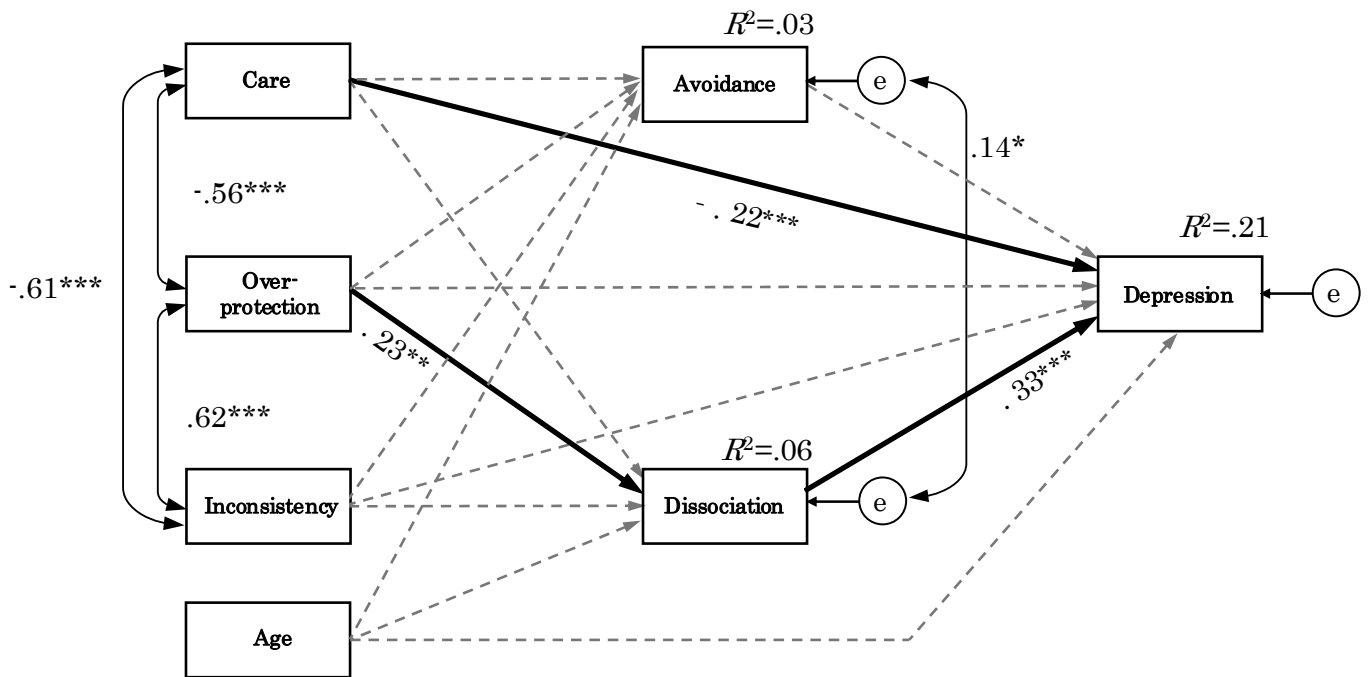


Figure 1. Standardized path coefficients for the structural equation model in men. Significant paths are represented by solid lines: $*p < .05$, $**p < .01$, $***p < .001$. Non-significant paths are represented by dashed lines.

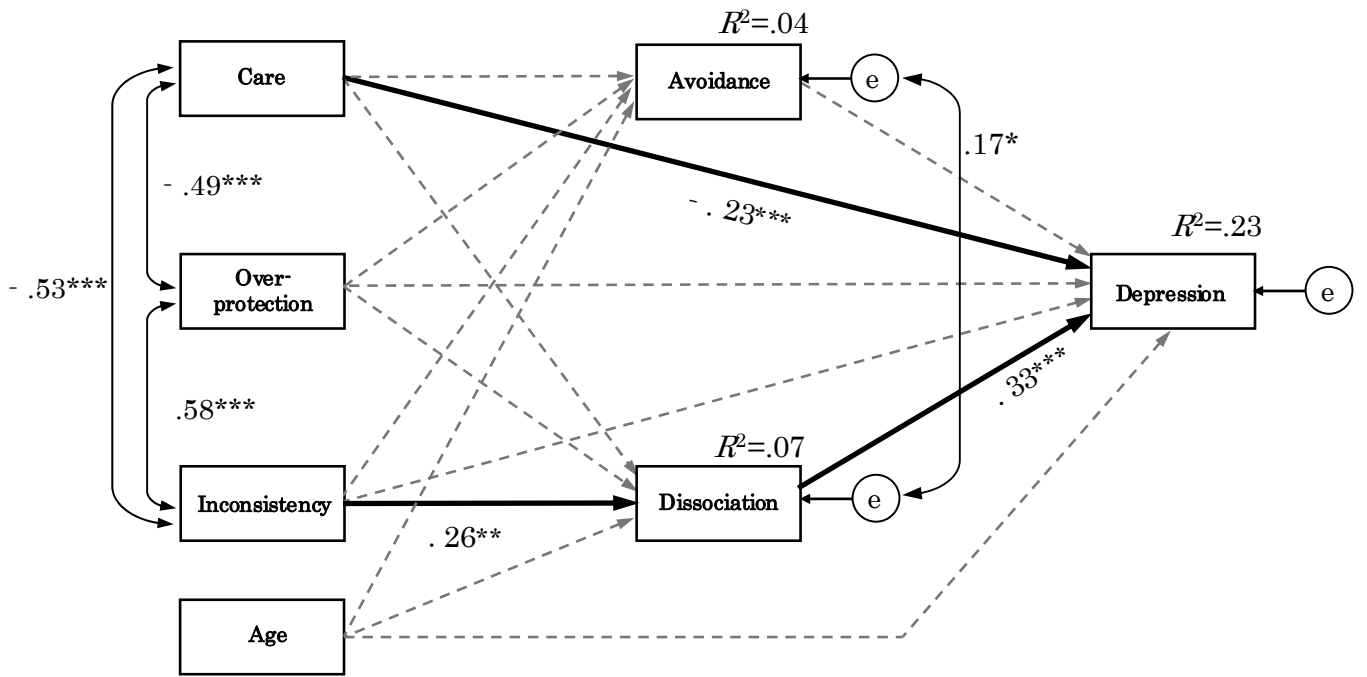


Figure 2. Standardized path coefficients for the structural equation model in women. Significant paths are represented by solid lines: $*p < .05$, $**p < .01$, $***p < .001$. Non-significant paths are represented by dashed lines.