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Relations between Parenting Stress, Attachment, and Life Satisfaction in Mothers of Adolescent Children

Streszczenie

Relacje przyczynowe pomiędzy stresem rodzicielskim, przywiązaniem i zadowoleniem z życia dotychczas poddawane analizie są traktowane wielokierunkowo w zależności od ich osadzenia w odmiennych ramach teoretycznych. Ponadto, relacje pomiędzy nimi zależą od wielu zmiennych, które mogą oddziaływać na analizowane relacje jako potencjalne czynniki zakłócające. W naszym badaniu podjęliśmy się analizy związku pomiędzy stresem rodzicielskim matek i ich zadowoleniem z życia zapośredniczonego poprzez jakość przywiązania, rozumianego, jako ogólna orientacja matki w bliskich związkach. Przywiązanie było przez nas traktowane jako rodzaj zasobów osobistych matek, który zgodnie z naszymi założeniami działa jak pryzmat wobec doświadczeń z własnymi dziećmi. Sformułowaliśmy trzy problemy badawcze: Czy relacja pomiędzy stresem rodzicielskim i zadowoleniem z życia matek jest mediowana poprzez jakość ich generalnego przywiązania? Czy mechanizm mediacji jest odmienny w zależności od tego, czy analizie poddamy wymiar niepokoju, czy unikania przywiązaniowego? Czy efekt mediacyjny jest wrażliwy na oddziaływanie potencjalnych czynników zakłócających? Analizie poddaliśmy dane zebrane od 575 matek nastoletnich dzieci przy użyciu narzędzi kwestionariuszowych. Wyniki wykazały, że związek pomiędzy stresem rodzicielskim i zadowoleniem z życia jest częściowo mediowany przez orientację przywiązaniową matek oraz, że mechanizm ten jest nieco inny w zależności od tego, czy mediatorem jest niepokój, czy unikanie przywiązaniowe. Statystyczna analiza wrażliwości wykazała, że analizowane modele są wrażliwe na oddziaływanie potencjalnych czynników zakłócających, które mogą przyczynić się do wyeliminowania efektu mediacji. Testując poprzez analizę wrażliwości, czy status ekonomiczny oraz ilość dzieci mogą pełnić rolę potencjalnych czynników zakłócających wykazaliśmy, że żaden z nich nie ma wystarczającej mocy aby zmniejszyć analizowany przez nas efekt mediacyjny. Wyniki są przez nas omówione w kontekście ich znaczenia teoretycznego i praktycznego, przyczynowości pomiędzy zmiennymi oraz rekomendacji dla dalszych badań.

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Słowa kluczowe

zadowolenie z życia, przywiązanie, stres, zachowania rodzicielskie, mediacja

Abstract

Causal relations between parenting stress, attachment, and life satisfaction tested in previous studies are multidirectional, even though grounded in respective theories. Additionally, relations between them are dependent on multiple factors viable to act as potential confounders. We set out to analyze the relation between parenting stress of mothers and their life satisfaction as mediated through their general attachment orientations treated as personal resources hypothesized to act as the filter toward their parenting experiences. Three questions were asked: Is the parenting stress-life satisfaction link mediated through attachment? Does the mediation mechanism differ when attachment dimensions of avoidance and anxiety are analyzed? Is the mediation effect sensitive to potential confounding factors? Data from 575 mothers of adolescents were collected using self-reports. Results revealed that parenting stress-life satisfaction relation is partially mediated through attachment, and that the mediation mechanism is different when anxious or avoidant attachment dimensions are analyzed. Sensitivity analysis revealed that mediation models are sensitive to potentially confounding factors. Trying to tackle potential confounders, we tested economic status and the number of children the mother ever had. None of them had enough power to decrease mediation effects. Results are discussed in terms of theoretical and practical implications, causality, and recommendations for further research.

Keywords

life satisfaction, attachment, stress, parenting, mediation

Introduction

The search for predictors of life satisfaction is one of a main tasks in psychology and has a high value for individuals. These investigations are organized around various scientific fields (e.g., psychological, sociodemographic, or biological) and usually follow two paths of inquiry addressing positive life satisfaction correlates or factors decreasing its level. Among the negative correlates stress is considered as an important life satisfaction predictor especially in studies analyzing job satisfaction in life-threatening or demanding areas of employment. Parenting stress treated as the correlate of life satisfaction is studied less frequently. Moreover, these studies mainly tackle parenting stress of parents rearing children with disabilities (e.g., Dąbrowska, Pisula, 2010; Gray, 2002; Miranda et al. 2015; Pisula, 2003;) or focus on stress-generating family communication patterns (e.g., Kaźmierczak, Płopa, 2006).

In general studies lead to the conclusion that stress decreases life and job satisfaction (Cieślak, Widerszal-Bazyl, Łuszczynska-Cieślak, 2000; Myers, 2005; Derbis, Baka, 2011; Diener, 2013; Diener, Lucas, Oishi, 2002; Spector, Jex, 1998). Nonetheless its effect depends on various personal and social resources of individuals, like repressive defensiveness (DeNeve, Cooper, 1998), personality dimensions (Derbis, 2012), or work engage-

ment (Derbis, Baka, 2011). Among personal resources attachment quality gained some attention in previous studies which have shown that two attachment insecurity dimensions of avoidance and anxiety were associated with higher distress and lower emotional well-being levels (e.g., Carnelley, Pietromonaco, Jaffe, 1994). It means that low levels of both attachment dimensions characterizing individuals with secure attachment orientation correlate with higher life satisfaction and lower levels of stress. Nonetheless, in many of these studies, attachment is studied as the predictor of life satisfaction which effect is mediated through other personal variables, like character strengths (e.g., Lavy, Littman-Ovadia, 2011) or social axioms (Mak, Han, You, Jin, Bond, 2011). In stress-oriented studies, attachment is predominantly analyzed in terms of dyadic bond describing a particular (e.g., parent-child) dyad which is studied as being dependent on parental stress (e.g., Louie, Cromer, 2014). Then, retrospectively assessed early childhood attachment experiences of parents (with own parents) are also studied in adults as predictors of their parenting stress in relation with their children (e.g., Steele al. 2016). However, attachment defined as a mental representation of self and others in close relationships (Bartholow & Horowitz, 1991) in general also can be treated as one of individual resources which may mediate the effect of other factors on life satisfaction (e.g., Hinnen, Sanderman, Sprangers, 2009). Thus, we set out in the present study to investigate the relation between parenting stress of mothers and their life satisfaction as mediated by their mental representation of attachment with close others in general. We hypothesized that insecure (avoidant and anxious) attachment general orientation of mothers will partially explain (mediate) the relation between their parenting stress and life satisfaction (General Hypothesis).

Life satisfaction and family

As we aim to investigate life satisfaction and its predictors in the present study, we will not consider constructs related with life satisfaction, like happiness, subjective well-being, or perceived quality of life discussed elsewhere (Derbis, 2000, 2007; Diener, 2012, 2013; Diener, Lucas, Oishi, 2002; Kowalik, 1993, 2000). It is worth noting here that within the positive psychology framework *subjective well-being* is defined through cognitive and emotional components. Emotional component addresses *happiness* as the outcome of balance between positive and negative affects. *Life satisfaction* in general is built on perceived meaning of life which needs continuous reflection regarding personal goals and reasons of failures and success (Campbell, Converse, Rodgers, 1976; Czapiński, 1994; Diener, Oishi, 2005; Diener, Seligman, 2002; Juczyński, 2001).

The search for sources of life satisfaction often follows the hedonistic bottom-up approach according to which people first assess the conditions in their lives, and then aggregat-

ing across conditions they arrive at an overall evaluation of their life satisfaction. Studies within this approach indicate that the family domain is one of the most important source for individual life satisfaction (Argyle, 2005; Czapiński, Panek, 2014; Deater-Deckard, Scarr, McCartney, Eisenberg, 1994; Diener et al., 2000; Diener, Seligman, 2002; Warr, Payne, 1982) setting the stage for the importance of studies targeting parenting stress and attachment orientations in a family. Research indicates that persons who are married (Glenn, Weaver, 1979; Inglehart, 1990), do not have children or have two or three preschool but not adolescent children (Glenn, Weaver, 1979; Amato et al. , 2003; Proulx et al., 2007) are happier than others (e.g., nonparents and divorced). However, results seem to depend on many factors.

Parenting stress

Parenthood may be a source of happiness but also may notably decrease well-being of parents. Parenting stress is considered in normative approach as the role-related stress (Seginer, Vermulst, Gerris, 2002) which in general involves parental emotional and behavioral responses to some unpleasant event(s) having multiple parameters that affect well-being (Crnic, Low, 2002). Parenting stress may be biased by multiple every day hassles, problematic family circumstances, or/and by singular adverse events. It can be also biased by parental disappointments indicated by discrepancies between parenting goals and child functioning (Szymanska, 2011). Nonetheless, despite caregiving responsibilities and demands being a source of pleasure and success, there are also everyday frustrations and failures which seem to be at the heart of defining the parenting experience with one's own children as stressful (Crnic, Low, 2002; Seginer et al., 2002). We define parenting stress in the present study not as the response to certain events but as a nonspecific state characterized by a general negative response (Seginer et al., 2002) indicated by a retrospective evaluation of own parenting experiences as problematic and a harder task than it was expected to be before becoming a parent.

Studies targeting child rearing stress are limited mostly to parents having small children (e.g., Seginer et al., 2002; Steele et al., 2016), stress related with every-day hassles, and refer not to general well-being of parents but to more narrow domains, like anxiety. Taking a more general perspective we aimed to investigate how parenting stress relates to mothers' nonspecific life satisfaction.

General attachment orientation as a personal resource

General attachment orientation refers to the internal working model of attachment (Bowlby, 1969/2007) defined as the mental model of self as worth of love and attention

from close others, and the model of close others as loving and providing care, safety and comfort in times of stress (Bartholomew, Horowitz, 1991). Even though this orientation develops through experiences with particular close others (e.g., the mother), it is generalized after infancy to close others in general and serves as a kind of a template for all close relations throughout life. The model develops in the first year of life through behavioral priming of infant's brain by constantly repeated cycles of infant's signals-caregiver's (un)sensitive responses. At later stages of life the model guides at the automatic (unconscious) level our responses and expectations in close relations (e.g., Siegel, 1999). This attachment mental model is similar to, yet not the same as the personality trait (Nofhle, Shaver, 2005) which quality predicts child adjustment, quality of close relationships in adulthood (e.g., Mikulincer, Shaver, 2007) and life satisfaction (e.g., Guarnieri, Smorti, Tani, 2015; Ma, Huebner, 2008).

Complementing the above cognitive perspective, attachment can also be studied as the behavioral system which regulates our emotional responses in times of stress (Mikulincer, Shaver, 2007). From this perspective, stress activates neural circuits triggering the need for closeness with the close other to attain security. Due to the quality of early caregiver-child relations individuals differ in their attachment quality, which is reflected in the attachment-based stress response pattern. Individuals with secure attachment in times of stress seek proximity with close others. They have both low, attachment avoidance and anxiety levels (Bartholomew, Horowitz, 1991). Taking the categorical (not dimensional) approach to attachment (e.g., Lubiewska & van de Vijver, 2014), this stress-derived response pattern characterizes individuals classified into autonomous/secure attachment pattern (Ainsworth et al., 1978; George, Kaplan, Main, 1985). Insecure individuals hyperactivate or deactivate the need for closeness in response to stress (Mikulincer & Shaver, 2007). Individuals with high level of attachment anxiety hyperactivate (boost) the need for closeness, experience both intensive emotions and stress response (Mikulincer & Shaver, 2007). These individuals are classified into the anxious-ambivalent/preoccupied attachment pattern (Ainsworth et al., 1978; George et al., 1985). Individuals with high level of attachment avoidance deactivate, suppress the closeness need, avoid proximity, are self-reliant and deny the stress experience, the problem and own need for closeness (Mikulincer & Shaver, 2007). They also have lower access to their emotions at the explicit level (overview in Lubiewska, 2016). These individuals are classified in the anxious-avoidant/dismissing attachment pattern (Ainsworth et al., 1978; George et al., 1985). It is worth noting that the dimensional approach defining individual differences in attachment in terms of attachment avoidance and anxiety has been shown recently to be more adequate and valid than the categorical approach classifying the individual into one of four attachment classes (e.g., Lubiewska & van de Vijver, 2014; van IJzendoorn & Bakermans-Kranenburg, 2014).

Contextual embeddedness of the stress-life satisfaction link

Life satisfaction, parenting stress, attachment or relations among them (like other psychological constructs) do not depend on a single domain, nor do they operate in a vacuum. First, perception of family as a source of life satisfaction depends on various factors, like: economic status of the family (Conger, Conger, Martin, 2010) and the country's economic situation in which family exists (Inglehart, Foa, Peterson, Welzel, 2008), the number of children or their characteristics, formalized or informal form of intimate relationships the couple maintain (Angeles, 2010), work-family balance (Clark, 2001; Derbis, 2013, 2014; Zalewska, 2011), religiosity, family values (Sabatier, Mayer, Friedlmeier, Lubiewska, Trommsdorff, 2011) and other factors affecting the family-to-life satisfaction link. Furthermore, these relations are not necessarily linear. For example, affluence of the country relates to higher life satisfaction of individuals but only to a certain level after which the increase in affluence is not translated into increase of life satisfaction of individuals (Easterlin, 1974; Myers, 2007).

Then, the association between parenting and well-being also depends on various factors (Nelson, Kushlev, Lyubomirsky, 2014). Effects of parenting stress on life satisfaction seems to be less complex. Yet, parenting stress is related with parental well-being differently, depending on child characteristics, social and individual resources of the parent (Pisula, 2003; Solem, Christophersen, Martinussen, 2011) and other contextual factors (Crnic, Low, 2002). In opposition to folk theories (at least those in the Polish culture) suggesting that “small children are a small problem, big children are a big problem”, studies indicate that child age does not change the level of parenting stress (Wheatley, Wille, 2009).

Research hypotheses

Although setting the causal relations in cross sectional studies among constructs assessed at the participants' mental representation (self-reports) level is not possible, we tested in the present study the mediation model based on the bottom-up approach to life satisfaction assuming that at first people assess the conditions in their life – in our study they summarize their stress related with parenting efforts – and then they evaluate their life satisfaction. We additionally assumed that implicitly operating and explicitly assessed mental representation of attachment orientation will to some extent act as the filter through which parenting experience is screened and affects life satisfaction (*General Hypothesis*).

As we define attachment through the level of hyperactivating (anxious) and deactivating (avoidant) tendencies which set the stage for different functioning of anxious and avoidant individuals, we also assumed that attachment dimensions of anxiety and avoidance will mediate the parenting stress-life satisfaction link differently. In particular,

complementing the general hypothesis proposed so far, we formulated two detailed and one more explorative hypotheses.

First, we expected that parenting stress will predict stronger maternal attachment anxiety than avoidance (*Hypothesis 1*). Stress triggers unpleasant affects and feelings and activates coping strategies in individuals. These strategies are different for anxious and avoidant individuals. Anxious individuals are aware of stress, reveal a tendency for rumination, while avoidant individuals suppress stress experience and are more unaware of unpleasant feelings or tension (e.g., overview in Lubiewska, 2016; Shaver, Mikulincer, 2008). Therefore, we expected that the level of parenting stress will have stronger explanatory power toward attachment anxiety than toward attachment avoidance.

Then, we hypothesized that maternal attachment avoidance will predict stronger her life satisfaction than her attachment anxiety (*Hypothesis 2*). As avoidant individuals deny distress, are unaware of the whole range of their emotions, and see rather negative than positive aspects of their experiences (e.g., Lubiewska, 2016), we expected that maternal avoidance stronger than her attachment anxiety will explain her life dissatisfaction.

Furthermore, taking into account causal relations between studied constructs which cannot be disentangled in our cross-sectional study, and regarding the theoretically driven multiplicity of factors viable to act as confounding variables toward the mediation model under study, we tested whether any potential confounding variable may cancel out mediation effects presumably found in our study. If results of the sensitivity analysis support this notion, we will test the last hypothesis assuming that economic status of the family and the number of children mother ever had will eliminate the mediation effect found in our study (*Hypothesis 3*). Both contextual conditions have been evidenced in previous research as influencing life satisfaction, attachment and parenting stress (e.g., Angeles, 2010; Conger, Conger, Martin, 2010; Emmen et al., 2013; Kahneman, Krueger, 2006).

Method

Sample

The study is part of the cross-cultural project “Value of Children and Intergenerational Relations” [VOC study] (Trommsdorff & Nauck, 2005). This is a three-generation study (including adolescents, their mothers and maternal grandmothers).

The Polish VOC sample was collected between 2006–2009 in urban and rural South-East, North-East, South-West, and North-West Poland and comprised 575 families with mothers and adolescent children (between the ages` of 14 and 17). Only data collected from 575 mothers were analyzed in the present study. The mean age of mothers

was 43.06 ($SD = 5.24$). Economic status of the family reported by mothers was $M = 2.98$ ($SD = .73$) in the range from 1 (low economic status) to 5 (upper economic status).

Procedure

Mothers were interviewed by trained interviewers. The interviews lasted between 60 and 90 minutes and were carried out mostly at the homes of the respondents or in locations indicated by respondents.

Measures

Individual economic status

Participants evaluated their economic status by comparing their situation to perceived economic status of other people living in their country using a 5-point Likert scale from (1) "low" to (5) "upper". The score from the mothers' reports was used in our study.

Attachment

Attachment was assessed by the Adult Attachment Scale (AAS, Collins & Read, 1990), referring to a general (not relationship specific) mental representation of attachment indicated by the dimensions of *anxiety*, *closeness*, and *dependence*. The study carried out by Lubiewska and van de Vijver (2014) on three generations revealed that the AAS structure is better represented by avoidance and anxiety factors which correspond to the dominating conceptualization of adult attachment. *Anxiety* relates to worry about abandonment, dislike, doubts about availability of others in times of need (e.g., "People are never there when you need them."). *Avoidance* indicates lack of comfort related with being close with attachment figure (e.g., "I am somewhat uncomfortable being close to others.") and lack of confidence in the dependability of others (e.g., "I find it difficult to trust others completely."). Low attachment anxiety and avoidance levels indicate secure attachment. The direction of wording in the AAS instrument implies that the outcome score indicates the level of insecurity (if avoidance and anxiety are combined) or avoidance and anxiety. Mothers rated the items on a five-point Likert scale ranging from (1) indicating low to (5) indicating high agreement. Reliability coefficients for avoidance (alpha of .80; omega of .81) and anxiety (alpha of .71; omega of .73) subscales were acceptable. The correlation between avoidance and anxiety factors was .64 indicating substantial overlap between both factors.

Parenting stress

The *Child Rearing Stress Scale* developed for the Dutch longitudinal study "Parents, adolescents, and young adults in Dutch families: A longitudinal study" (e.g., Gerris et al., 1998) was used to assess parenting stress of mothers. Respondents rate their agreement on a five-point Likert scale from (1) not true at all to (5) very true, to the three following questions: (1) Raising my child has brought about more problems than I had

expected; (2) Raising my child is harder than I thought it would be; (3) Raising my child frequently causes problems. Reliability coefficient of the scale was good (alpha and omega of .89).

Life satisfaction

Life satisfaction was measured by five questions assessing the domain-specific and one general (domain unrelated) satisfaction with life. The general life satisfaction was measured by one item from the Satisfaction With Life Scale (e.g., Diener et al., 2000): „All things considered, how satisfied are you with life as a whole these days?“ The four Domain-specific items (friendships, health, school, and family) came from Henrich and Herschbach’s (1995) instrument. Reliability coefficient of the scale was acceptable (alpha of .71; omega of .72).

Results

Statistical analysis. As analysis of our data revealed violation of multivariate normality assumption, we used mathematical transformations of data and based the main analyses on robust statistics. First, causality assumptions of mediation related with significance of model paths were tested in three steps using parametric regression LM method and robust tests applied to observable variables (mean values of subscales). Then, we tested the main mediation hypothesis using structural equation modeling.

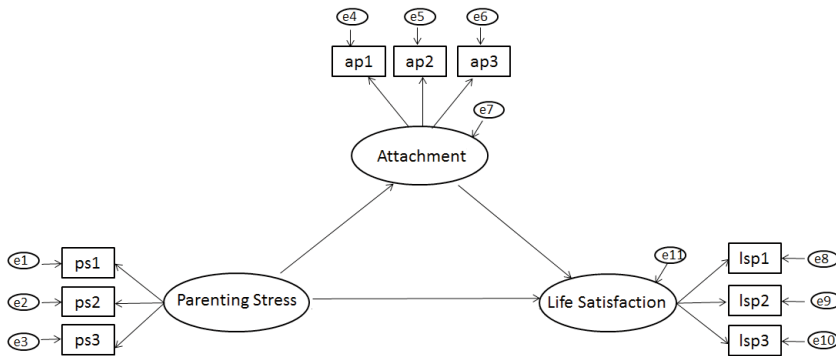


Figure 1. Mediation statistical model explaining life satisfaction of mothers by their parenting stress through maternal mental representation of attachment.

The general statistical model tested in our study is presented in Figure 1. The exogenous variable and both endogenous variables were tested as latent factors comprising three observable variables each. Parenting stress was indicated by three items (ps1-ps3), whereas scales assessing life satisfaction and attachment were multi-item instruments. As increase in the number of indicators decreases the number of degrees of freedom

in the Structural Equation Modeling analysis (SEM), we decided to reduce the number of attachment and life satisfaction parameters to be estimated in our model by the item parceling procedure based on the item-to-construct balance method (e.g., Little, Cunningham, Shaher, Widaman, 2002). As a result three parcel-indicators were formed for attachment (in)security (ap1-ap3), and for life satisfaction (lsp1-lsp3) latent factors.

Analyses of correlations between the study variables presented in Table 1 revealed high relations between attachment avoidance and anxiety. Thus, before we proceeded with the main analyses we tested whether high correlation between both attachment dimensions is problematic when both attachment latent factors are included in one structural model. High correlation may cause collinearity problems affecting inflation, reduced stability, power and increased standard errors in parameter estimates of the model (Cohen, Cohen, West, Aiken, 2003). Nonetheless, separation of attachment avoidance and anxiety effects was important for testing hypotheses in the present study. To test these we ran a series of mediation models with both mediators and found problematic results biasing erratic conclusions about relations between variables (due to space limitations and the number of analyses carried out these results are not reported here). Therefore we decided to proceed in further analyses with two separate models testing our mediation hypotheses: Model 1 with the attachment avoidance mediator; and Model 2 with the attachment anxiety mediator.

Table 1.

Descriptive Statistics and Correlations between Variables

Variables	Parenting stress	Attachment		Life satisfaction
		Avoidance	Anxiety	
Parenting stress				
Atta. Avoidance	.18			
Atta. Anxiety	.27	.64		
Life satisfaction	-.22	-.23	-.34	
M	2.27	2.53	2.33	3.94
SD	1.01	.69	.69	.54

Note. All correlations are significant at $p < .001$.

Furthermore, as the use of regression analyses (including SEM) in mediation models rely on unstable assumptions (Imai, Keele, Tingley & Yamamoto, 2011) addressing causal inferences assumed in mediation, yet rarely tested in studies, we extended our study by sensitivity analysis testing Hypothesis 3. Unstable assumptions in mediation address causal relations tested in mediation models which are hypothesized but often-times not possible to evidence in terms of the intermediate effects between them. It is as-

sumed in mediation analyses that there are any confounding variables which could affect variables included in the outcome (X and Y) and mediator (X and M) path models. This assumption is oftentimes unrealistic and rather not tested in mediation analyses. For example, we can assume that parenting stress affects parental life satisfaction but we cannot be sure whether both are not affected by the third variable. For example maternal stress and life satisfaction may depend on the economic situation of the family (financial constraints might explain both, higher parenting stress and lower life satisfaction). In fact, as was indicated already in the introduction, many such confounding variables could be listed, as well as studies carried out to look for variables which might eliminate mediation effects found in the main study. Yet, these time-consuming analyses might lead to the simple conclusion that any variable under investigation is viable to act as the confounder canceling out the mediation effect in the main model under investigation. The sensitivity analysis answers the question whether there is any confounding variable which is viable to eliminate the mediation effect. When the sensitivity analysis provides a positive answer to this question, further investigation addressing these variables is supported (otherwise it is rather a waste of time in an empirical sense).

Carrying out the sensitivity analysis we quantified the degree of sequential ignorability assumption violation in our mediation model. The analysis tests whether our mediation model would hold if such a confounding variable would be included in our mediation model. Such an omitted variable (confounder) is treated as the variable related with the outcome-mediator, the mediator-predictor, and outcome-predictor models and is indicated by a correlation between error terms of model variables. If sequential ignorability assumption of mediation analysis is met, these correlations shall equal zero in magnitude. If not, sensitivity analysis gives back the values of error terms correlation due to a potential confounder (*rho* parameter) at which our mediation effects would be insignificant (if such a sensitive region exists).

If sensitivity analysis runs in our data would reveal that results of mediation analyses are sensitive to effects of potential confounding variables we will run the same mediation models (Models 1 and 2) with covariates (Models 1a and 2a) which we hypothesize may operate as confounding variables in our model. In this part of the analysis two demographic variables theoretically important for the mediation model tested in our study, namely the economic status of mothers and the number of children she ever had were tested. Carrying out these analyses we will answer the question whether family economic status and the number of children the mother ever had have sufficient power to deflate the mediation effect in our models. All analyses were based on robust statistics (Satorra, Bentler, 1988) and were carried out using ‘lavaan’ (Rosseel, 2012) and ‘mediation’ R packages (Tingley, Yamamoto, Hirose, Keele, Imai, 2013).

Assumptions for mediation

Three steps are needed before proceeding with the main mediation analysis. First, we have to confirm the significance of relationship between X and Y variables (step 1). Then, the same assumption has to be supported for the relation between X and the mediator variable M (step 2). Finally, the relation between M and Y shall be supported (step 3). Our analyses revealed that all three assumptions were met in our data for Model 1 (path coefficients' values: $-.22, p < .001$ for step 1; $.18, p < .001$ for step 2; and $-.23, p < .001$ for step 3) and for Model 2 (path coefficients' values: $-.22, p < .001$ for step 1; $.27, p < .001$ for step 2; and $-.34, p < .001$ for step 3).

Mediation

First, we tested Model 1 with attachment avoidance as the mediator between parenting stress and life satisfaction of mothers. The model fit parameters of this model presented in Table 2 were good. Results of our analysis run in Model 2 with attachment anxiety as the mediator yielded relatively worse however still good model fit parameters. Model 1 yielded to be more parsimonious (AIC) and fitting better to our data than Model 2.

Table 2.

Fit Model Parameters for Mediation Model Explaining Maternal Life Satisfaction by Her Parenting Stress Through Maternal Mental Representation of Attachment

SEM MODELS	df	χ^2	RMSEA	CFI	AIC
Mediation models					
Model 1	24	33.421	.026 (.001; .045)	.994	11226.623
Model 2	24	40.123	.034 (.015; .051)	.990	11654.915
Mediation models controlling for confounders					
Model 1a	37	81.680	.044 (.030; .057)	.977	14270.504
Model 2a	37	95.116	.052 (.040; .065)	.966	14702.808

Note. All indexes were calculated using Satorra-Bentler correction. All χ^2 estimates were significant at the level of $p < .001$. Model 1 – attachment avoidance as mediator. Model 2– attachment anxiety as mediator.

Comparison of path coefficients, shown in Table 3 (and visualized at Figure 2), across both models indicated some differences between models for avoidance and anxiety as mediators. In line with Hypothesis 1, parenting stress explained better attachment anxiety (4% of variance for path a in Model 2) than attachment avoidance (3% of variance for path a in Model 1). Similarly, low maternal life satisfaction was explained better by her attachment avoidance (5% of variance for path b in Model 1) than anxiety (3% of variance for path b in Model 2) supporting Hypothesis 2. Even though these differences are not sizable in magnitude (probably) due to the overlap between anxiety and avoidance indicators in the AAS instrument, these results are in line with the attachment

theory. Aside from these (minor in our study) differences between both models, partial mediation effect holds across both models supporting our general hypothesis indicating that the effect of maternal parenting stress on her life satisfaction depends to some extent on the level of her attachment insecurity. In particular, parenting stress of mother moderately and negatively predicts her life satisfaction. However, when maternal attachment avoidance or anxiety in close relations in general is controlled for, maternal parenting stress operates only as a weak negative predictor of maternal life satisfaction.

Table 3.

Effects in Mediation Model Explaining Maternal Life Satisfaction by Her Parenting Stress Through Maternal Mental Representation of Attachment

Effects	Coefficient			
	Unstandardized	SE	Standardized	95% CIs
Model 1 ($R^2 = .19$)				
Parenting stress (a)	.17***	.03	.27	.11; .24
Atta. avoidance (b)	-.22***	.04	-.36	-.31; -.15
Indirect (a*b)	-.04***	.01	-.09	-.06; -.02
Total [$c = c' + (a*b)$]	-.11***	.02	-.27	-.16; -.07
Direct (c')	-.07***	.02	-.18	-.11; -.03
Model 2 ($R^2 = .16$)				
Parenting stress (a)	.19***	.03	.29	.12; .26
Atta. anxiety (b)	-.18***	.05	-.31	-.28; -.10
Indirect (a*b)	-.04***	.01	-.09	-.06; -.02
Total [$c = c' + (a*b)$]	-.11***	.02	-.27	-.15; -.06
Direct (c')	-.07**	.02	-.18	-.12; -.03

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

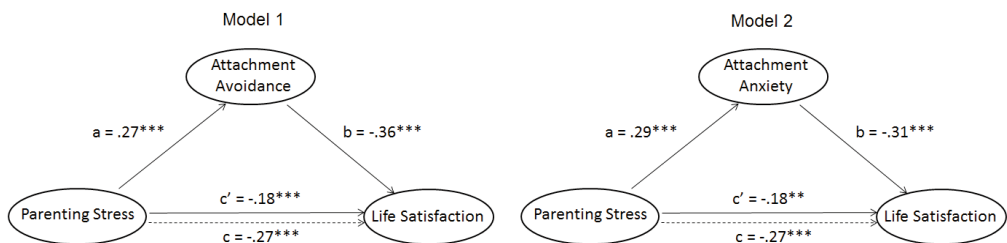


Figure 2. Path coefficients and model fit parameters for mediation models with avoidance (Model 1) or anxiety (Model 2) as the mediators.

Sensitivity analysis

Results of sensitivity analysis revealed that the average causal mediation effect (ACME) found in our Model 1 is sensitive to a confounding variable at ρ value $-.30$ at which ACME equals zero. For the direct effect the same ρ value is $.50$. Similar results were found for Model 2, where ρ value at which ACME equals zero was $-.24$, and for the direct effect ρ was $.58$.

Table 4.

Effects in Mediation Model Explaining Maternal Life Satisfaction by Her Parenting Stress Through Maternal Mental Representation of Attachment Controlling for Confounding Variables (Family Economic Status and Number of Children Mother ever had)

Effects	Coefficient			95% CIs
	Unstandardized	SE	Standardized	
Model 1a ($R^2 = .22$)				
Parenting stress (a)	.17***	.03	.26	.10; .23
Atta. avoidance (b)	-.19***	.04	-.32	-.28; -.11
ES (d)	-.10	.06	-.08	-.21; .02
ES (e)	-.12**	.04	-.15	-.21; -.05
ES (f)	.09***	.03	.18	.03; .13
Children (g)	-.10*	.00	-.11	-.18; -.02
Children (h)	.01	.00	.01	-.03; .04
Indirect (a*b)	-.03***	.01	-.08	-.06; -.02
Total [$c = c' + (a*b)$]	-.10***	.02	-.25	-.15; -.05
Direct (c')	-.07**	.02	-.17	-.11; -.03
Model 2a ($R^2 = .20$)				
Parenting stress (a)	.19***	.03	.29	.13; .26
Atta. anxiety (b)	-.17***	.04	-.29	-.26; -.09
ES (d)	-.10	.06	-.08	-.21; .02
ES (e)	-.02	.04	-.02	-.09; .07
ES (f)	.11***	.02	.22	.06; .15
Children (g)	-.10**	.00	-.11	-.17; -.02
Children (h)	.01	.00	.02	-.03; .04
Indirect (a*b)	-.03***	.01	-.09	-.06; -.02
Total [$c = c' + (a*b)$]	-.10***	.02	-.25	-.14; -.05
Direct (c')	-.06**	.02	-.17	-.11; -.02

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

The results of sensitivity analyses evidenced that both models are sensitive to a potential confounding variable. Thus, we tested further our data by introducing demographic variables into both models which we assumed to act as the theoretically good candidates to introduce changes in our model parameters deflating mediation effects.

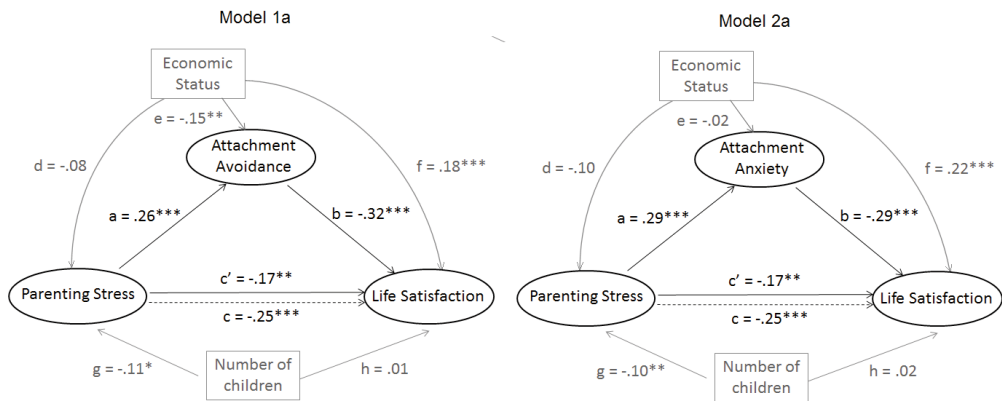


Figure 3. Path coefficients and model fit parameters for mediation models with attachment avoidance (Model 1a) or anxiety (Model 2a) as the mediators controlling for confounding variables (economic status of family and number of children mother ever had).

Results of our analyses of Models 1a and 2a with two additional (potentially confounding) variables are presented in Table 4 (and visualized in Figure 3). As indicated in Table 2 model fit parameters for Models 1 and 2 were superior to model fit indices for Models 1a and 2a. Comparison of path coefficients in both groups of models (Figures 2 and 3) indicates that economic status (having a weak significant effect on attachment and life satisfaction) and number of children (having a weak effect on maternal parenting stress) tested in our study as potential confounding variables in the mediation model, decreased the marginally direct and indirect effects not affecting the significance of mediation effects.

Discussion

We set out in our study to test the extent to which (General Hypothesis) and the mechanism through which parenting stress explains life satisfaction of mothers via their mental representation of attachment (Hypotheses 1 and 2), and whether this mediation effect can be canceled out if other (e.g., contextual) variables would be controlled for (Hypothesis 3).

Our results revealed that the relation between parenting stress of mothers and their life satisfaction is partially mediated through their (in)secure mental representation of attachment in close relations. Furthermore, we also found that the mediation model tested in our study is sensitive to (not defined) confounding causal variables omitted in our theoretically derived model. Carrying out the sensitivity analysis we revealed the region of both, mediation and direct effects as sensitive to violation of the sequential ignorabil-

ity assumption, and quantified the size of correlation caused by the omitted variable in which our mediation model would become insignificant. Extending this analysis, we tested two demographic variables – economic status of mothers and the number of children they ever had – which we assumed to be theoretically likely to operate as potential omitted confounding variables. Nonetheless, we revealed that both do not have sufficient power to reduce the mediation effect to an insignificant level in our study.

How attachment buffers parenting stress-life satisfaction link

Parenting stress of mothers was found in our study as a moderate negative predictor of their life satisfaction. This relation was assumed as partially operating through maternal representation of attachment in close relations. This expectation was supported in our study. Maternal mental representation of attachment seems to work to some significant extent as a buffer between maternal parenting stress and her life satisfaction. Although causal relations are difficult to settle in our study as well as within theoretical background, it seems possible that the perception of high parenting stress by the mother may be filtered through her insecure attachment mental representation decreasing her life satisfaction. Yet further, preferably longitudinal studies, are needed to investigate causal relations between parenting stress, attachment, and life satisfaction.

What are the implications of these findings? First, although attachment and stress are studied as correlates with various causal relations, our study seems to indicate that attachment mental representation can be treated as a personal resource which mitigates or exacerbates effects of focal factors shaping life satisfaction, at least in the family domain. This mechanism can be used further in cognitive therapy focused on bottom up change of perception of life. Attachment unfolds, at least partially, why parenting stress decreases life satisfaction.

Furthermore, even though the attachment instrument used in our study does not sufficiently disentangle avoidance and anxiety attachment dimensions our analyses seem to shed more light on the processes underlining distinct patterns of affect regulation in insecure, anxious (hyperactivating) or avoidant (deactivating) individuals. According to the theory, avoidant individuals in times of stress deactivate, suppress the need for closeness, do not show stress explicitly but also are more prone to negative feelings about others, and less satisfied with their close relationships and life in general (e.g., Shaver, Mikulincer, 2008). This mechanism seems to be supported in our findings, where parenting stress was (marginally) a worse predictor of maternal attachment avoidance than of attachment anxiety. Then, in line with the attachment theory, we also found that attachment avoidance is relatively (although marginally) better predictor of life satisfaction than attachment anxiety.

Even though the mediating mechanisms seems to operate differently in relation between parenting stress and life satisfaction for avoidant and anxious mothers, it should be highlighted that the size of the mediation effect is not affected by individual differences in attachment of mothers in our study. This result is probably biased by high overlap between avoidance and anxiety instruments which did not allow for the theoretically sufficient distinction between avoidant and anxious tendencies of mothers participating in our study. However, we believe that the use of other than ours instrument assessing with better predictive validity individual differences in attachment strategies would support stronger conclusions in further studies about different mechanisms explaining life satisfaction in anxious and avoidant individuals.

Finally, it is worth noting that investigating the robustness of our mediation model we found that the model may not hold regarding the mediation effect when other omitted variables should be included in our study. This study revealed that even though economic status of the family and the number of children the mother ever had are related significantly with attachment, life satisfaction and parenting stress, both do not have sufficient power to cancel the mediation effect of attachment in the parenting stress-life satisfaction relation. Further studies are needed to indicate which variables included in the parenting stress-attachment-life satisfaction model may reduce the mediation effect. This result would be of high value for fields related with attachment-based therapy and health psychology.

Effects of contextual factors

Conclusions complementing our main findings which are worth noting refer to contextual factors tested in our study as confounders. Although, they did not diminish the mediation effects, we found that economic status reported by the mother (as compared to others) explained her life satisfaction. The better she estimates her economic situation, the more satisfied she is. This result is in agreement with the folk knowledge but also seems to be in line with the Family Stress Model (Conger, Conger, Martin, 2010; Neppl, Senia, Donellan, 2016). This model posits that economic hardship in the family is translated into marital discord and further parenting problems. Even though the maternal economic situation was found to be unrelated to parenting stress but with maternal life satisfaction, this finding seems consistent with the Family Stress Model when measurement issues are considered. Parenting stress was assessed retrospectively as the general negative estimation of parenting experiences, whereas the economic situation and life satisfaction were reported by mothers in the context of actual (not past) situation.

Interestingly, we also found that the low economic status reported by mothers predicted their higher attachment avoidance. This finding is partially in line with previous

studies analyzing adolescent-parent attachment where income predicted both attachment avoidance and anxiety (Rawatlal, Pillay, Kliewer, 2015).

Another interesting finding of our study addresses the effect of the number of children the mother ever had on her parenting stress. Although we did not find that the number of children increases life satisfactions as was revealed in previous studies (Angelis, 2010), we found a weak effect indicating that the more children the mother ever had, the less stressful her parenting is estimated to be. Experiences with more children in a family might trigger higher parenting self-esteem of mothers and underlie lower parenting stress and a more optimistic perception of her parenting experiences.

Limitations of the study

At least two problems limit conclusions to our study. First, we based our testing of the mediation hypotheses on cross-sectional data. This generates questions about the causality directions proposed in our study. Then, another limitation addresses instruments used in data collecting. Both scales, even though widely used in studies, have their weaknesses. The attachment instrument could differentiate a better avoidant and anxious dimensions core for individual differences in attachment (the original scale structure with anxiety, closeness and dependence has the same problem).

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