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„‘Should I be Ashamed?’ The Relationship Between  
Shame-Proneness, Family Structure and Emotion  
Suppression in Adolescents”

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### **Abstract**

Olson's circumplex model describes two components of family functioning as determinants of a healthy family system: cohesion and flexibility. Imbalance in either direction of both factors is claimed to jeopardize adolescents' social functioning by limiting successful development of autonomy and self-worth. This study attempted to test this assumption by including shame-proneness, the tendency to perceive social situations as shameful, as an outcome of perceived family imbalance. Moreover, shame-proneness was hypothesized to explain the relationship between imbalanced family functioning and emotion suppression, the tendency to conceal the outward expression of negative emotions. Gender differences were assumed to moderate individual pathways. A sample of 525 adolescents from Austria, Germany, and Switzerland filled out an online questionnaire assessing family cohesion and flexibility, shame-proneness and emotion suppression. A hierarchical regression analysis showed imbalance in family cohesion and family flexibility to predict shame-proneness. Mediation analyses indicated a significant mediation of shame-proneness in the relationship between family imbalance and emotion suppression. Results support the idea of an adaptive function of shame-proneness for adolescents in light of malfunctioning family environments. Suppressing negative emotions may follow shame-proneness based on the induced feeling of needing to hide certain aspect of the own identity. Gender does not seem to play a significant moderating role within the conceptual framework, suggesting advancements in more complex deliberations on gender role ideas in this day and age. Current results lend countenance to adolescents' need for autonomy and independence, however, the circumplex model needs to be applied with careful consideration of time- and culture-specific contexts.

*Keywords:* circumplex model, cohesion, flexibility, shame-proneness, emotion suppression

## **Zusammenfassung**

Olsons Circumplex Modell beschreibt zwei Komponenten der familiären Struktur als Determinanten eines gesunden Familiensystems: Kohäsion und Flexibilität. Dabei gefährden Dysbalancen in beide Richtungen jeweils beider Faktoren die soziale Funktionsfähigkeit von Jugendlichen, indem die Entwicklung von Autonomie und Selbstwertgefühl behindert wird. Das Ziel der vorliegenden Arbeit war es, diese Annahmen zu prüfen. Dazu wurde Schamneigung, die Geneigtheit soziale Situationen als schamvoll zu erleben, als negativer Indikator familiärer Dysbalancen untersucht. Zudem wurde die Schamneigung in ihrer Funktion als Mediator zwischen familiärer Dysbalance und Emotionssuppression, die Tendenz den Ausdruck negativer Gefühle zu unterdrücken, getestet. Es wurde angenommen, dass geschlechtsspezifische Unterschiede als Moderator der Zusammenhänge fungiert. Eine Stichprobe von 525 Jugendlichen aus Österreich, Deutschland und der Schweiz füllte einen Online-Fragebogen aus, der die familiäre Kohäsion und Flexibilität, die Schamneigung und die Emotionsunterdrückung erfasste. Eine hierarchische Regressionsanalyse zeigte eine signifikante Vorhersage der Schamneigung von familiärer Kohäsion und Flexibilität. Mediationsanalysen zeigten zudem eine signifikante Mediation der Beziehung zwischen beiden Komponenten familiärer Struktur—Kohäsion und Flexibilität—und Emotionssuppression durch Schamneigung. Die Ergebnisse unterstützen die Idee einer adaptiven Funktion der Schamneigung für Jugendliche angesichts dysfunktionaler familiärer Strukturen. Dabei werden negative Gefühle in dysfunktionalen Familien eher unterdrückt, um so Abwertung zu entgehen. Das Geschlecht scheint innerhalb des konzeptionellen Rahmens keine signifikante moderierende Rolle zu spielen, was auf Fortschritte hin zu komplexeren Überlegungen bezüglich Geschlechterrollen und sozialem Geschlecht in der heutigen Zeit hindeutet. Die aktuellen Ergebnisse unterstützen die Relevanz von Autonomieentwicklung und Unabhängigkeit in der Entwicklung Jugendlicher. Das Circumplex Modell muss jedoch unter sorgfältiger Berücksichtigung zeit- und kulturspezifischer Kontexte angewendet werden.

*Schlagwörter:* Circumplex Modell, Kohäsion, Flexibilität, Schamneigung, Emotionsunterdrückung

## **“Should I be Ashamed?” The Relationship Between Shame-Proneness, Family Structure and Emotion Suppression in Adolescents**

It was normal to be ashamed, as if shame was a consequence of my parents' profession, their money troubles, their working-class background, our whole way of life (...). Shame became a state of being for me. I almost didn't notice it anymore, it had become part of my body. (...) The worst thing about shame is that you think you are the only one who feels that way.<sup>1</sup> (Ernaux, 2020, pp. 91, 109; S. Große, Transl.)

What is impressively described in Ernaux's socio-autobiography *Shame* (2020) mirrors both potential origins of what scholars call internalized shame, as well as the emotional and social consequences following shame. As such, feeling ashamed may be influenced by contextual factors such as social status and family environment, which strongly shape our sense of self. Without noticing, shame may become a state of being, influencing the way we perceive ourselves, how we react emotionally and how we function socially. It becomes apparent that shame may be more than a transitory emotional state that affects us momentarily. Instead, it continuously shapes our identity and self-perception, and therefore influences our entire development.

The worry about how other people see us and how we are evaluated is a fundamental building block in the functioning of the human brain (Goffman, 1955). In this context, shame is a powerful social emotion, which signals the threat of social exclusion (Fischer & Tangney, 1995). Especially adolescents are prone to experience negative psychological consequences following shame (Mills, 2005). Shame has thus been associated with a variety of internalizing (e.g. depression, anxiety; Fergus et al., 2010; Mills et al., 2015; Muris et al., 2015; Velotti et al., 2017) as well as externalizing problems (e. g. aggression, substance use; Elison et al., 2014; Hejdenberg & Andrews, 2011; Rahim & Patton, 2015), which are the leading predictive cause of psychopathology in youths and increase gradually during adolescence (Collishaw, 2015). Since over 50% of all mental health problems have their onset at age 14, research on prevention and risk factors during adolescence are especially necessary (Kessler et al., 2007).

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<sup>1</sup> Original text: „Es war normal, sich zu schämen, als wäre die Scham eine Konsequenz aus dem Beruf meiner Eltern, ihren Geldsorgen, ihrer Arbeitervergangenheit, unserer ganzen Art zu leben. (...) Die Scham wurde für mich zu einer Seinsweise. Fast bemerkte ich sie gar nicht mehr, sie war Teil meines Körpers geworden. (...) Das Schlimmste an der Scham ist, dass man glaubt, man wäre die Einzige, die so empfindet.“

Shame-proneness describes the behavioural and affective tendency of being prone to experience shame following socially ambiguous situations. It may arise from an imbalance in family functioning, which hinders adequate social development in children and adolescents. In order to define overall family functioning Olson's circumplex model (1989; 2000; et al., 2019) unites familial factors of parenting styles and emotional climate within two factors: cohesion and flexibility. Conceptualized as curvilinear factors, both too high, as well as too little levels of these factors are determinants of maladaptive family functioning, constituting a risk for adolescents' emotional and social development and psychological well-being.

Being prone to shame might furthermore encourage emotion suppression as a way of protecting the self from negative social judgment (Lanteigne et al., 2014; Rimes & Chalder, 2010; Schimmenti, 2012; Schimmenti & Pace, 2012). Emotion suppression refers to the behavioural tendency to hide the outward expression of emotions and is thought to be related to family climate and functioning. Given the essential role of the family in the emotional development of adolescents, the aim of the current research is to investigate which family structures predict shame-proneness in adolescents and whether shame-proneness might mediate the relationship between family functioning and adolescents' tendency to suppress emotions. Using Olson's circumplex model (1989; 2000; et al., 2019), the factors family cohesion and family flexibility will serve as a proxy to assess family functioning in terms of parenting practices, relationship quality, communication and attachment styles.

### **Theoretical Background**

#### **Shame**

Shame is defined as a global negative self-attribution, in which the individual is degraded in his or her entire identity (Lewis, 1992; Tangney & Dearing, 2002). The source of the negative self-attribution can thereby either stem from oneself or it can be located externally in the social judgment of others. While external shame refers to the negative evaluation by others and directs the attentional focus toward social cues from the environment, internal shame is defined as the integrated feeling of being unworthy and inadequate and directs the attentional focus to how the individual views himself or herself. Internal shame is related to the internalization of shame, which in turn involves negative self-evaluative processes and self-directed affects (e.g. self-hate, self-directed anger, etc.).

#### ***Developmental Perspectives on Shame***

What different theories on the development and social function of shame have in common is the idea that the need for social approval and close social bonds with others is essential for a healthy development. Shame is thereby considered to be rooted in the need for

attachment to others and in the fear of being socially excluded (Lewis, 1992, 2008). For instance, many psychoanalytic theories conceptualize shame as a primitive form of guilt, typically displayed by children, who feared to lose their mother's love in response to a wrong behaviour (Lansky & Morrison, 1997; Pines, 2008). Although shame and guilt are in current theories considered to incorporate distinct origins, functions and behavioural patterns<sup>2</sup>, it is crucial to acknowledge the socially adaptive component psychoanalytic theories attributed to shame already then.

The idea of a socially adaptive function of shame still enjoys relevance in contemporary theories (Barrett, 1995; Campos et al., 1994; Gilbert, 2003; Hutcherson & Gross, 2011; Nelissen et al., 2013). According to the functionalist perspective, emotions are inherently adaptive to the social human functioning. Shame is thereby part of a social threat detection system signalling the loss of approval from significant others and potential social exclusion (Dempsey, 2017; Gilbert, 2003; Hutcherson & Gross, 2011). Interestingly, in the face of shame self-protective features are developed in order to escape social evaluation: What follows shame is a so called 'adjustment response', which may include certain psychological features such as social anxiety or depression; these features are considered adaptive within a particular context as they lead to the withdrawal from social situations and thereby minimize the threat of negative social evaluation. In all likelihood the adjustment response adapts to whichever part of the identity is the focus of shame. For instance, if social judgement is experienced upon having a certain sexual orientation, a comprehensible reaction could be to hide this part of one's identity in order to remain in a state of perceived social acceptance. Thus, experiencing shame signals the threat of negative social judgement and potential exclusion and may therein motivate the individual to keep certain aspects of one's own identity hidden from the perceived social judgment of others.

The shame response also depends on the social context and the group which represents social security. For instance, acts of rejection or shaming by family members represent the prototypic source of shame experiences for children and adolescents, as the

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<sup>2</sup> Research on shame requires a differentiation between shame and guilt (Tangney et al., 2007a). In regard to guilt the focus upon the negative evaluation of a specific behaviour accompanied by a cognitive attributional style that is internal, yet specific and unstable warranting personal integrity. Guilt furthermore motivates individuals to initiate reparative actions after wrong-doing, such as issuing an apology or initiating reparative actions (Baldwin & Baker, 2004; Kim et al., 2011; Schmader & Lickel, 2006; Sheikh & Janoff-Bulman, 2010). For shame the attributional style is characterized as internal, global and stable leading to a negative self-evaluation by attacking the core identity (Tangney et al., 1992; Lewis, 1992). This in turn induces feelings of isolation, leading individuals into avoidance behaviour, suppression and flight tendencies (Leach & Cidam, 2015). Shame and guilt have not only conceptually been consistently related to one another, they furthermore show a significant overlap reflected in moderate correlations of both constructs (Rüsch et al., 2007). Parallel assessment of both constructs is therefore recommended for research (Tangney et al., 1989).

family context represents their most important social reference. Likely, children and adolescents also develop certain strategies when faced with a threatening social environment in order to minimize negative judgment, such as hiding parts of their inner emotional experiences and identity. According to the functionalist theory those strategies can be interpreted as necessary precautions in order to remain socially accepted (Barrett, 1995; Gilbert, 2003). Importantly, those precaution may be of such high necessity that they are implemented into behavioural tendencies and thought processes and therefore endure throughout development and well into adolescence.

### ***Shame, Trait Shame and Shame-Proneness***

When conducting research on shame it is necessary to differentiate shame-related constructs from one another. State-shame explains the situation-specific degree of affective shame and is thus a momentary reaction to social situations that is considered to vanish after some time (Tangney, 1995). Furthermore state-shame can be understood to serve an adaptive value, as it signals wrong-doing or immoral behaviour in a specific situation, potentially initiating conformity and adherence to social norms (Ferguson & Stegge, 1995). In addition to differences in situational shame, people may also differ in their internalized, habitual shame responses. Trait shame, or chronic shame, refers to an overall emotional state of feeling suppressed, worthless and inadequate (Ferguson & Stegge, 1995) and is associated with psychopathology (Allan et al., 1994; Given-Wilson et al., 2011; Rusch et al., 2007).

Similar to trait shame, *shame-proneness* is also considered a trait, but specifies the individual's proneness of responding to a specific situation with feelings of shame (Tangney, 1995), rather than referring to a mere affectionate state. It therefore reflects cognitive, affective, and behavioural differences in people's responses to perceived personal insufficiency or wrong-doing (Tangney & Dearing, 2002). However, the research focus of trait shame lies within specific domains, such as body shame, historical shame or ethnic shame. In contrast shame-proneness is considered an influential or explanatory factor within inter-variable relationships. Embedding shame-proneness within the functionalist theory of shame (Dempsey, 2017; Gilbert, 2003), shame-proneness may be described as behaviourally adaptive in social environments which do not allow for complete self-disclosure. Therefore, being emotionally prone and behaviourally prewired to evaluate social situations as shame-inducing might prevent the individual from disclosing parts of his or her identity for which he or she could gain negative social judgment.

Although conceptually distinctive, state shame, trait shame and shame-proneness share considerable overlap and are interrelated in their genesis. For instance, individuals who

are very likely to react with shame in a social situation (shame-proneness) will probably experience more shame momentarily (state shame) and internalize shame more readily into their self-concept (trait shame; Sedighimornani et al., 2021). This interrelatedness also complicates definite attributions of research results to one specific form of shame. However, aiding the scientific distinction of shame-proneness from other forms of shame, the Test of Self-Conscious Affect (TOSCA; Tangney et al., 1989) represents the state of the art scientific approach. Within the construction of the TOSCA (Tangney et al., 1989), shame-proneness describes the tendency to react ashamed in socially challenging situations, in a sense that what the individual is doing, how he or she behaves and feels, is the output of a flawed self.

Just as trait shame, shame-proneness, albeit a product of genetic make-up, is subject to environmental influences. As such, close relationships within families are considered an important platform for internalized forms of shame (Cooper, 1994; Harper & Hoopes, 1990; Kaufman, 1996). Through the interaction with parents and siblings, children establish a stable self-concept including a sense of self-worth and identity (Ainsworth, 1989; Furman et al., 2002). Nikolic and colleagues (2021) suggest family environment, social status, school performance and bullying experiences as substantially influencing the experience of internalized shame. Additional environmental influences on the chronic experience of shame include traumatic experiences such as child abuse and severe neglect (Sedighimornani et al., 2021). As such, the family context shapes the way children and adolescents perceive themselves in social interactions and determines their behavioural repertoire.

### ***Family Functioning and Shame Development in Adolescence***

The development of shame in adolescence revolves around work by Helen Block Lewis (1987), who attributed great relevance to the influence of parenting behaviours. Acknowledging that shame is an emotion deeply rooted in the need for close relationships, Lewis claimed negative parental behaviour to threaten the attachment bond of the child. Shame is thereby a response to the resulting insecurity about the own self-worth and amiability. In line with these considerations, Bowlby's attachment theory (1971) stresses the importance of early experiences in families and the quality of the caregiver relationship in the formation of inner working models of relationships. These concern beliefs about—and expectations of—the self and of interpersonal relationships with others and determine future social functioning of the child. For instance, parental support, acceptance and warmth promote a secure attachment, in the course of which the child views him- or herself in a

positive light and as socially successful, preventing self-doubt and insecurity regarding social encounters (Luthar, 2006; Olsson et al., 2003; Thompson, 2006; Tian et al., 2018).

The genesis of shame regarding family environment and parenting styles furthermore revolve around the self-determination theory by Ryan and Deci (2000), who attribute to every individual an inherent need for autonomy, free self-expression and authenticity. According to self-determination theory, the social surrounding, including family and parents, influence adolescents' identity formation and autonomy development. For instance, autonomy-supportive parenting promotes resilience when faced with critical life events (Soenens, & Vansteenkiste, 2005) and prevents children from becoming overly critical in their self-evaluation (Luyckx et al., 2009; Soenens et al., 2008). Conversely, children from autonomy-diminishing households may be less stable in their identity formations and more prone to judge themselves negatively compared to children who experienced unconditional acceptance (Legate et al., 2019). Presumably, those children had the chance to develop a more holistic self-image, which integrates also potentially shameful aspects of their identity (Hodgins et al., 2006; Weinstein et al., 2011).

Negative parenting practices may evoke shame by stimulating a global negative self-attribution. This process may take place via active criticism of attributes, personality traits or characteristics of the child or via expressing abhorrence or disdainfulness (Mills et al. 2015). Therefore, upon experiencing parental rejection, children may internalize parents' attitudes and beliefs about themselves, which signal to them that they are entirely unlovable and unwanted. In line with this, research by Kelley et al. (2000) showed that unsupportive and critical attitudes by the mother toward the child while performing a difficult task is associated with shame and avoidance as early as 36 months of age. A study by Stuewig and McCloskey (2005) found a significant association between verbally and physically harsh parenting and shame-proneness in childhood, which extended into adolescence according to the results of an eight-year follow-up.

Additionally, negative communication patterns, such as a pejorative communication or the purposeful conveyance of "shameful" characteristics (shaming) signal the child to be unlovable, worthless and disappointing to its parents, thereby inducing an insecure and shameful attitude toward the own self-worth (Claesson & Sohlberg, 2002) and ultimately generating global feelings of shame (Stuewig & McCloskey, 2005). Future negative events or failures are consecutively attributed to the own self (Bennett et al., 2005; Ferguson & Stegge, 1995; Lagattuta & Thompson, 2007). Internalizing shame may be the consequence of this attributional process.

In line with this, shame-proneness has been associated with authoritarian parenting, characterized by a strong hierarchical order, strict rules and controlling and punishing regulations (Grusec & Davidov, 2007; Mills, 2003; Mills, et al., 2010). A longitudinal study by Mintz and colleagues (2017) showed that shame-proneness in emerging adulthood is associated with recalled childhood experiences of negative parenting styles, including physical abuse, verbal abuse, embarrassment and neglect. Additionally, the relationship between restrictive family rules and antisocial communication patterns may be explained by high feelings of shame in adolescents (Crane et al., 2020). Conversely, children from families that promote open and frequent communication typically build higher self-esteem than children from conformity-oriented families (Fitzpatrick & Ritchie, 1994; Rangarajan & Kelly, 2006; Schrodtt et al., 2008).

Shame-proneness may however also be evoked, when there is a considerable overabundance of care from the parents extended to the adolescent. This may be reflected in parental control, restrictive parenting styles and a high interdependence and cohesion among family members (Odenweller et al., 2014). While adolescents who grow up in autonomy-supportive families typically show more adjustment to critical life events, a less critical self-judgement as well as a healthier identity development (Luyckx et al., 2009; Soenens & Vansteenkiste, 2005; Soenens et al., 2008), parental control may hinder the development of autonomy, thus making adolescents' self-worth dependent on parental judgment (Sillars et al., 2005).

On the other hand, shame-proneness may be the result of a permissive and overly liberal parenting style, which can lead to instability in families (Parisette-Sparks et al., 2017). A permissive or structureless parenting style may therefore promote feelings of worthlessness, incompetence and helplessness (Salehifard et al., 2021), ultimately promoting feelings of insecurity and shame. Although the intentions behind these parenting practices may be grounded in the parent's desire for their children to develop independently and autonomously, parenting characterized by poor supervision, guidance, monitoring and management predicted less successful development of a coherent sense of self in children, thus promoting shame-proneness (Mills, 2003).

Taken together, parenting styles and family characteristics that are either extremely controlling, thus diminishing successful autonomy development or extremely permissive, appear to be associated with internalized shame in children and adolescence. It is likely that a balanced parenting style and family climate, characterized by clear rules and consequences for wrong-doing, as well as guidance and care for the child's needs, can lead to successful

formation of self-identity, confidence and self-worth in the child, thus fostering a healthy shame development.

### **Olson's Circumplex Model of Family Functioning**

To identify families at risk for emotional and behavioural problems in individual family members, Olson (1989; 2000; et al., 2019) developed the circumplex model to determine overall family functioning. The model thereby takes a system-focused approach in which interfamilial relations and the family climate are examined. The model is widely applied, both in research, as well as in family therapy and in the evaluation of treatment success (Carvalho et al., 2014; Hosseini-Hajibekandeh et al., 2016; Joh et al., 2013; Naghinasab Ardehaee et al., 2018; Turkdogan et al., 2019). The central idea of the circumplex model is that families function optimally when there is a balance of cohesion and flexibility. Imbalance, on the other hand, can go in either direction; meaning both too much, as well as too little cohesion or flexibility can pose a risk for family relationships and for the well-being of individual family members. The main difference between the circumplex model and other models of family systems is that it conceptualizes the dimensions as curvilinear, with too high and too low scores being problematic, instead of linear, where only higher scores signal complications.

Both family cohesion and flexibility are orthogonal factors, meaning they can be fused to collectively describe family functioning. Each dimension is thereby composed of five specifications: two extremes (disengaged and enmeshed for family cohesion; chaotic and rigid for family flexibility) constituting the imbalanced forms, and three balanced forms. This results in nine balanced family systems (which are balanced on both dimensions), twelve mid-range family systems (which are balanced on only one dimension) and four imbalanced systems (which are imbalanced on both family cohesion and flexibility). For family systems that are imbalanced in both dimensions, the circumplex model predicts worse outcomes concerning mental health for family members compared to mid-range or balanced families.

*Family cohesion* describes the experience of emotional closeness among family members to each other. Some indicators of family cohesion include number of shared friends, amount of time spend together, loyalty to each other, communal decision-making processes and feelings of attachment. Too much cohesion leads to a controlling family system, in which family members give each other little personal space and have therefore too little independence (enmeshed system). Little time is spent apart, the focus is directed inwards the family systems, with rare social contacts outside the family. Also, there is a high demand for consensus and loyalty. Too little cohesion, on the other hand, results in extremely disengaged

family systems, wherein family members act very independently. There is little time spent together and family members rarely share common interests. The family is not considered a source of support, which results in feelings of separateness and high disinterest for other family members or family matters in general. A balanced amount of cohesion allows family members to develop as individuals, while maintaining a feeling of connectedness to their family.

Research suggests that family cohesion may be associated with shame-proneness (Olson, 1989; 2000; et al., 2019). For instance, disengaged families have been associated with reported loneliness and low sense of coherence among children and adolescents (Pulakos, 1996; Sharabi et al., 2012). This might result from the child's experience that parents express little interest and care for his or her needs. The child or adolescent might conclude that his or her needs are not worth caring for, which might result in a global self-perception of being unworthy, ultimately fuelling feelings of shame. Similarly, in enmeshed family system the adolescent has no space for developing autonomy, as other family members demand a high interdependence and cohesion. Consequently, social inadequacy, insecurity and loneliness outside the family might develop into more global feelings of low self-worth and shame.

*Family flexibility* describes the ability of a family to adjust to new or difficult circumstances successfully. It is therefore an indicator of how well families can balance maintaining stability of the family system and incorporating necessary changes to the system. Indicators of family flexibility include power distribution, role diversity, control styles, family and relationship rules, and conflict resolution styles. Chaotic family systems (too high flexibility) result in a distinct lack of structure and leadership. Decisions pertaining to the family are made impulsively, roles shift constantly, thereby providing little security for individual family members. Rigid family systems (too little flexibility), on the other hand, are characterized by strict rules and demand for obedience. Oftentimes there is only one leader in the family, who synergizes responsibilities and power. Other family members have little say in family matters and are obliged to conform to the rules. Optimal family functioning is characterized by an even distribution of both stability and change. Roles and responsibilities are clear, yet allowing room for adjustment and flexibility while including all family members in democratic family decision processes.

As for children in rigid families, scientific research points toward similar assumptions concerning the relationship with shame-proneness. Within rigid family systems, adolescents typically develop fewer social skills and competencies, which can be seen as a result of stunted development of personal autonomy. Potentially they are therefore more sensitive to

social evaluation and more prone to experience shame in social situations. Oftentimes, shaming and devaluing the adolescents are strategies of parenting. Shame-proneness may likely be the fuel, as well as the outcome of such a system, as the child needs external approval to consider itself worthy and valuable (Sillars et al., 2005). Chaotic family systems, which allow for too much flexibility, may be associated with shame-proneness in adolescents via maladaptive parenting practices. According to Olson and Gorall (2006), chaotic family systems can either go in the direction of uninvolved or in the direction of permissive parenting. Either way, lack of clear rules may result in the adolescent being ill-prepared for difficult social encounters by limiting the adolescent's development of social skills and competencies, while simultaneously increasing its self-perception of being worthless and unlovable. Both scenarios hinder healthy autonomy development and might increase automatized shame reactions in social situations. Altogether, instability in parenting styles and methods, in terms of both imbalance in cohesion and in flexibility, can fuel negative self-evaluation and shame experiences in the adolescent (Salehifard et al., 2021) potentially leading to shame-proneness.

### ***Emotion Suppression as a Function of Family Imbalance***

Family functioning and parenting quality have been identified as the most influential factors in the development of successful emotion regulation strategies in childhood and adolescence (Eisenberg et al., 1998; Rutherford et al., 2015; Steinberg et al., 2006). Emotion regulation refers to a variety of processes that are included in the recognition, monitoring and modification of emotions (Thompson, 1994). To regulate emotions means to initiate, to enhance or to reduce emotions consistent with the requirements of the social context and own goals. Effectively adjusting the quality and intensity of emotions is crucial to emotional well-being (Gross & Jazaieri, 2014; Gross & John, 2003).

Emotion suppression constitutes the most frequently used form of emotion regulation among adolescents (Gullone et al., 2010; John & Gross, 2004). As it involves the active inhibition of verbal and non-verbal components of emotions, it is generally considered a maladaptive emotion regulation strategy (Webb et al., 2012). Research therefore indicates that chronic suppression of emotions may be related to both internalizing as well as externalizing problems in adolescents as well as preceding psychopathologies, such as eating disorders and depression (Aldao et al., 2010; Beblo et al., 2012; Gross & John, 2003; Polivy & Herman, 2002). A study by van Strien et al. (2019) investigated a serial mediation of emotion suppression, in which negative parenting styles, such as low emotional support and

hostility toward the child, predicted emotion suppression and difficulties in identifying emotions, ultimately predicting emotional eating in adolescence.

Research suggests that emotion suppression might be associated with family imbalance, that is with the degree of cohesion and flexibility within families. For instance, emotion suppression is shown to mediate the relationship between both enmeshed and disengaged family systems and depression in children (Lindblom et al., 2017). Similarly, parental warmth and emotional support as well as guidance have been shown to positively relate to adolescents' emotion regulation skills, fostering open attempts at coping with difficult emotions (Eisenberg et al., 1998; Houltberg et al., 2012; Morris et al., 2007). Conversely emotion-dismissing parenting styles, which can be found in disengaged family systems, is shown to promote avoidant emotion coping (Brody et al., 2014; Denham et al., 2003; Eisenberg & Fabes, 1994; Magai et al., 2004).

Emotion suppression may furthermore be associated to parental control behaviours, that are characteristic of rigid family systems in particular. While moderate levels of behavioural control are related to positive emotional and behavioural outcomes for adolescents (Galambos et al., 2013), extreme behavioural control is shown to lead to poorer emotion regulation skills, regardless of levels of maternal warmth (Manzeske & Stright, 2009). Similarly, Cui et al. (2014) found psychological and behavioural control by parents to be associated with avoidant coping strategies in adolescents. In a study by Jaffe et al. (2010) overprotecting and controlling parenting has been associated with the tendency to suppress emotions in 9-12 year old children, but only in cases where perceived parental warmth was low. Jaffe et al. (2010) point toward the importance of parental care when it comes to buffering the negative consequences of autonomy-diminishing parenting behaviours, which might lower children's self-confidence in effective emotion regulation.

Research supporting the idea that emotion suppression in adolescence might be associated with rigid families is found in a study Lee et al. (2015), who investigated the brain reactivity of healthy adolescents to maternal criticism. While listening to audio clips of their mothers criticising them activity in the dorsolateral prefrontal cortex and the caudal anterior cingulate cortex decreased—regions that are typically activated under cognitive control of emotions. Maternal warmth on the other hand has been associated with reduced activity in regions associated with self-referential processing when listening to maternal criticism. This points to the conclusion that maternal warmth may buffer the negative self-evaluation of adolescents following maternal criticism. In fact, in a warm parent-child relationship,

adolescents seem to take criticism less personal than when the relationship is characterised as less warm and loving, pointing to an adaptive feature in emotion regulation (Lee et al., 2015).

Similarly, permissive parenting styles and inconsistent parenting, which are characteristic for chaotic family systems, are shown to predict the use of emotion suppression in adolescents (Balan et al., 2007; Manczak et al., 2019). Presumably, chaotic and unstructured family environments represent a salient stressor for adolescent making up a family environment which is largely unpredictable and chaotic (Grolnick, 2003). Dealing with such a demanding environment requires an extensive amount of cognitive resources to deal with upcoming negative emotions, such as anger, fear or sadness. Consequently, fewer resources can be mobilized for implementing adaptive emotion regulation strategies, such as cognitive reappraisal (Repetti et al., 2002).

Altogether, negative parenting methods that reach into extremes, exerting behavioural and psychological control, characterized by little warmth or lack of emotional support, negatively affect adolescents' mental health by ways of influencing their emotional development and emotion regulation skills in particular (Brody et al., 2014; Cui et al., 2014). On the other hand, clear rules and communication of boundaries creates a balance which helps the child to feel comfortable with his or her own behaviour and emotion expression (Mirabile, 2014; Morris et al., 2007). In line with this, authoritative parenting, which has been attributed to balanced family systems in the circumplex model, is shown to predict lesser use of emotion suppression (Grolnick & Farkas, 2002).

### ***Shame-Proneness as Mediator***

A factor which might explain the relationship between family functioning and emotion suppression is shame-proneness (Schimmenti, 2012; Schimmenti & Pace, 2012). Research shows that negative emotion regulation strategies (e.g. self-blaming and catastrophizing) explain approximately 20% of the differences in shame-proneness in adolescents, making emotion regulation strategies an important factor in pathological displays of shame (Szentágotai-Tâtar & Miu, 2016). Also, emotion regulation strategies that are considered maladaptive (e.g. suppression), have been associated with shame-proneness in depressed adolescents (Hughes et al., 2011).

One explanation of the working mechanisms of shame-proneness as mediator of this relationship might be that parent's negative evaluation of or reaction toward the adolescent may evoke a sense of unworthiness. The adolescent may draw from this experience that his or her own emotions, especially if they are negative, are unacceptable, a sign of weakness, and cause negative reactions in others. The adolescent adopts a shameful attitude that is reflected

in a proneness to experience shame (Higgins, 1987). Research suggests that such a learned attitude may be related to attempts to avoid or even suppress these negative emotions (Rimes & Chalder, 2010). Having no platform to express or discuss difficult emotions, adolescents might feel the need to suppress their emotions altogether, thereby avoiding negative evaluation by their families.

A closer look at the conceptual definition of shame-proneness further points toward shame-proneness as mediator. Shame-proneness can be regarded as a trait-like feature of human personality and provides a blueprint according to which social situations, and specifically a person's role in them, are evaluated. This also means, that shame-proneness is a style of perceiving and evaluating the self, namely as potentially shameful, unworthy and flawed. On a behavioural level, this perception entails a tendency to hide oneself from the judging view of others, potentially extending to every part of the identity. Hiding emotions or suppressing them can be viewed as an adaptive step in a social environment, where adolescents fear social exclusion based on perceived negative judgment. This way, adolescents who grow up in a particular negative familial environment develop shame-proneness as a protective reaction to the unloving, unsupportive family climate. Suppressing negative emotions might be a necessary, and in this sense adaptive reaction in order to protect the self from further compromise.

Further support for the idea that shame-proneness may precede emotion suppression, is provided by a study on emotional discordance as it pertains to *experiencing* emotions relative to expressing emotions in female adolescents. Lanteigne and colleagues (2014) had female adolescents participate in a social stress task while measuring their bodily reactions, behavioural expressions and subjective experience of stress. They found that habitual shame was higher in participants where the subjective experience of stress was higher than the outward expression of stress; therefore, the outward experience of stress has been suppressed. Habitual shame here refers to the chronical feeling of inferiority and the experience of the need to hide. Lanteigne and colleagues (2014) conclude, that the capacity to synchronise internal stress experiences with the outward expression of stress is subject to social learning in the form of family rules and expectations. Shame may be a powerful predictor in the tendency to suppress negative emotions, even though the inner experience of the negative emotion remains.

### **Gender Differences in Shame-Proneness, Emotion Suppression and Family Functioning**

There is evidence pointing toward gender-related differences in the perception of family functioning. That way, girls reported positive family interactions as well as negative

family interactions more frequently than boys (Telzer & Fuligni, 2013). Furthermore, girls appear to be more negatively affected by negative relationships with their parents or by distress within their family (Romero-Abrio et al., 2019; Telzer & Fuligni, 2013). This might be explained by girl's greater need for close emotional bonds and emotional communication within families than boy's (Cyranowski et al., 2000; Rudolph, 2002). Supporting this assumption, negative family interactions have been associated with depression only in girls (Telzer & Fuligni, 2013). Similarly, positive parent-child relationships seem to buffer depressive symptomatology in girls (Moreira & Telzer, 2015; Telzer & Fuligni, 2013).

Additionally, gender socialization theory suggests that parents talk more frequently and more openly about emotion with girl than with boys (Brody, 2000; Fivush et al., 2000). Perry et al. (2017) suggest in this regard that girls may be more mortified and may experience more shame, when their parents do not respond to their negative emotions in an encouraging and attentive way, which is the case especially in imbalanced family systems. Additionally, results of a study by Gorbett and Kruczek (2008) indicate that female participants might be more sensitive to parental discouragement of open emotion sharing, in a sense that they feel more hurt and less cherished. This further supports the idea that girls might experience more shame-proneness as a backlash to imbalanced family environments.

Gender differences furthermore become apparent in the experience of shame-proneness, in that women appear to experience more shame than men (Adams, 2005; Ferguson et al, 2000; Kelly et al., 2008; Tangney & Dearing, 2002). One possible explanation is that women are more sensitive to social evaluation and thus experience more shame in face of negative social interactions (Kelly et al., 2008). Another possible explanation for this is provided by gender socialization theory, which posits that boys have been socialized to hide or abnegate their emotions. Indeed, boys who show shame or adopt submissive behaviours in social situations are more likely to be socially excluded as they are perceived to deviate from the gender norm (Adams, 2005). Additionally, girls are socialized to attend more frequently to the emotions of others and to be more sensitive to other people's feelings, making them more prone to shame in light of socially ambiguous situations (Elison et al., 2015; Ferguson et al., 2000).

Research suggests a paradox in the shame-emotion suppression link: If boys are indeed less shame-prone than girls, and shame-proneness is positively linked with emotion suppression, then one would expect boys to be less susceptible to suppressing their emotions than girls. However, boys appear to engage more frequently in emotion suppression than girls (Flynn et al., 2010; Rogier et al., 2017). While that is true, the effect of shame experiences on

emotion coping however might be more detrimental for girls than for boys. A study by Velotti et al. (2017) showed that adult women's greater characterological shame correlated positively with their tendency to suppress negative emotions. Furthermore, study results by Nyström and Mikkelsen (2013) suggest that adolescent girls are more prone to adopting avoidant and self-attacking coping strategies in the face of shame, while boys tend to exhibit externalizing and aggressive coping styles when experiencing shame. It might be suggested that adolescent girls therefore also more frequently suppress their emotions in the face of shame, more so than adolescent boys.

An explanation for the greater susceptibility of girls to adopt maladaptive coping strategies in the face of shame is provided by thoughts on gender differences in social norms concerning emotion disclosure. Although shame generally directs the attentional focus inwards, away from social cues, shame-proneness has the additional trait-like feature of making the individual highly sensitive to social evaluation. Therefore, girls, who are generally show more prone to shame, may be more worried about not "fitting in" the status quo of the female gender ideal. Overtly showing aggression, for instance, does not match the female gender ideal as propagated by society, making shame-prone girls especially restrained to disclose such emotions, and instead prone to suppress any sort of negative affective states.

Taking together, gender appears to have some regulating potential within the associative framework of family functioning, shame-proneness and emotion suppression. The association between family dysfunctionality and shame-proneness may thus be more negative in adolescent girls than in boys; a moderating effect of gender on the association between family functioning and shame-proneness has not been tested so far within the framework of the circumplex model. Furthermore, the association between shame-proneness and emotion suppression might be more negative for female than for male adolescents, based on girls' greater sensitivity to negative social encounters and emotion coping tendencies following shame. Therefore, chronic shame experiences tend to impact an individual's emotional coping style in different ways depending on his or her gender, with women being more negatively affected by shame-proneness than men.

### **Research Questions and Hypotheses**

Despite the established negative association between dysfunctional parenting practices and shame-proneness, little is known about the balance-based approach suggested in Olson's circumplex model of family functioning (2000) and shame-proneness in adolescents. Thus, most research on shame development has focused on early life experiences. However, research shows, that the impact of negative family circumstances and maladaptive family

structure may be carried on in children's development and be associated with emotional suppression in adolescence. It is the goal of this study to investigate whether shame-proneness is related to family imbalance in terms of family cohesion and family flexibility, as derived from Olson's circumplex model (2000), and further shed light on the underlying mechanism of emotion suppression and the potential moderating effects of gender.

### **Research Question 1: Family Functionality Predicts Shame-Proneness**

The present research will investigate the association between balance versus imbalance in the family system and their association with shame-proneness in adolescence.

Hypothesis 1.1: Balance in family cohesion is negatively associated with shame-proneness in adolescents. That is, higher ratio scores in family cohesion are expected to be associated with lower scores in shame-proneness.

Hypothesis 1.2: Balance in family flexibility is negatively associated with shame-proneness in adolescents. That is, higher ratio scores in family flexibility are expected to be associated with lower scores in shame-proneness.

### **Research Question 2: Shame-Proneness as a Mediator**

Secondly, the present study will attempt to test a mediating role of shame-proneness in the relation between family dysfunctionality and emotion suppression.

H2.1: Balance in family cohesion, or family flexibility, respectively, is negatively associated with emotion suppression in adolescents. That is, higher ratio scores in family cohesion, or family flexibility, respectively, is expected to be associated with lower scores in emotion suppression.

H2.2: Shame-proneness mediates the relationship between family cohesion, or family flexibility, and emotion suppression.

### **Research Question 3: The Role of Gender Differences**

Following the literature on gender differences in dysfunctional families, it will be investigated whether gender and family functionality interact in their relation to shame-proneness.

H3.1: Gender moderates the relation between family functioning and shame-proneness. It is predicted that the relation between family cohesion, or family flexibility, and shame-proneness is more strongly negative for female adolescents than for male adolescents.

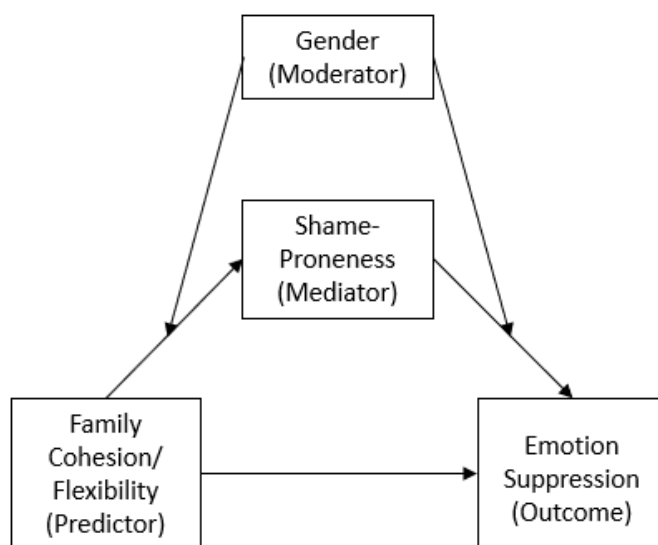
Furthermore, it will be investigated whether shame-proneness and gender interact in their relation to emotion suppression.

H3.2: Gender moderates the relation between shame-proneness and emotion suppression. It is predicted that shame-proneness and emotion suppression are more strongly positively associated for female adolescents than for male adolescents.

See Figure 1 for an overview of the hypothesized model of research question 3.

**Figure 1** Fehler! Ungültiger Eigenverweis auf Textmarke.

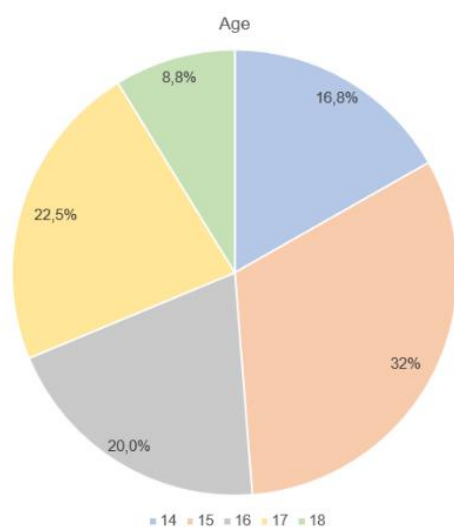
#### *Hypothesized Moderated Mediation Model*



### **Method**

#### **Participants**

A data set of  $N = 525$  participants was used for the analyses. Participants had a mean age of 15.74 ( $SD_{\text{age}} = 1.22$ ; see Figure 2). The majority of the participants identified as female (78.3%). About half of the participants indicated to live in Germany (55.8%, 39% in Austria, 5.1% in Switzerland). Demographic characteristics of the sample are displayed in Table 1.

**Figure 2***Distribution of Participants' Age (in %)***Table 1***Sample Characteristics for Education, Living Situation and Current Psychological Treatment*

| Variable                                      | n   | %    |
|-----------------------------------------------|-----|------|
| Current education                             |     |      |
| Apprenticeship                                | 15  | 2.9  |
| School                                        | 504 | 96.0 |
| Study                                         | 4   | 0.8  |
| None                                          | 2   | 0.4  |
| Living situation                              |     |      |
| With my parents                               | 376 | 71.6 |
| With my mother                                | 83  | 15.8 |
| With my father                                | 24  | 4.6  |
| Other                                         | 42  | 8.0  |
| Previous psychological treatment <sup>a</sup> | 72  | 13.7 |
| Depression                                    | 39  | 53.8 |
| Anxiety disorder/social phobia                | 17  | 23.4 |
| Borderline                                    | 5   | 6.9  |

| Variable                     | <i>n</i> | %   |
|------------------------------|----------|-----|
| Anorexia nervosa             | 6        | 8.2 |
| Suicidal thoughts/intentions | 5        | 6.9 |
| Trauma/PTSD <sup>b</sup>     | 6        | 8.2 |

<sup>a</sup> Reflects the number and percentage of participants answering “yes” to this question. Multiple answers were possible. Only those disorders are listed, which have been named 5 or more times. <sup>b</sup> Post-traumatic stress disorder.

## Measures

### *Family Adaptability and Cohesion Evaluation Scale IV*

The most recent adaptation of the Family Adaptability and Cohesion Evaluation Scale (FACES IV; Olson, 2011) was used to assess family functioning. In accordance with the circumplex model (Olson, 1989; 2000), two scales assess the balanced levels of cohesion and flexibility (balanced cohesion, balanced flexibility), and four scales assess the imbalanced levels (enmeshed, disengaged, chaotic and rigid), making up a total of 42 items. Items asking for cohesion include questions about the whether family members tend to spend too much time together or too little, or whether family members share some common activities or interests. Concerning family flexibility, items ask about the hierarchical structure of the family, whether discussions involve all family members or only the parents, and whether the consequences for breaking rules are rather strict or loose. Items are answered on a Likert scale (1 = *strongly disagree* to 5 = *strongly agree*).

Sum scores were computed for each scale (range: 5–35), with higher scores indicating higher occurrence. For statistical analyses, the raw scores of the two balanced scales (cohesion and flexibility) and the four imbalanced scales (enmeshed, disengaged, rigid and chaotic) have been transferred to ratio scores for cohesion and flexibility to allow for linear analyses. The cohesion and flexibility ratio score are calculated by dividing their balanced scores (balanced cohesion score and balanced flexibility score) by the mean of their two imbalanced scales (enmeshed and disengaged scale for family cohesion, rigid and chaotic for family flexibility). Ratio scores range from 0 to 10. A ratio score above 1 signals a rather balanced system, while a ratio score below 1 signals a rather imbalanced system. A score of 1 indicates an equal magnitude of balance versus imbalance in the family system. Validation measures for the FACES IV show Cronbach’s  $\alpha$  to vary between .77 and .89 for the different family types (Olson, 2011). Cronbach’s  $\alpha$  was used to assess the reliability of the FACES IV.

The results of reliability analyses of the current study indicate an acceptable internal consistency for the subscales balanced cohesion ( $n = 521$ ,  $\alpha = .87$ ) and disengagement ( $n = 521$ ,  $\alpha = .79$ ), and a questionable internal consistency for the subscales balanced flexibility ( $n = 522$ ,  $\alpha = .69$ ), enmeshment ( $n = 522$ ,  $\alpha = .50$ ), rigidity ( $n = 522$ ,  $\alpha = .68$ ) and chaos ( $n = 522$ ,  $\alpha = .67$ ).

### ***Test of Self-Conscious Affect for Adolescence***

The German version of the Test of Self-Conscious Affect for Adolescents (TOSCA-A; Tangney et al., 1991; Kronmüller et al., 2008) was used to assess shame-proneness. Each of the 15 items depict a social scenario which might evoke self-conscious emotions in the participant, for instance spilling a drink in a cafeteria. The participant is then asked to indicate the likelihood of his or her emotional response (shame, guilt, pride, externalizing or externalizing reaction). Items are answered using a Likert scale (1 = *very unlike me* to 5 = *very like me*). High scores on one answer dimension indicate an elevated tendency for responding in this particular way. Assessment of the German adaptation of the TOSCA-A concluded good internal consistency for shame, guilt and externalization scales (Cronbach's  $\alpha = .76-.83$ ) and an acceptable test-retest reliability ( $r_{tt} = .77-.91$ ) in a German sample of 8- to 18-year-olds (Kronmüller et al., 2008). In the current study, reliability analyses indicated an acceptable reliability and internal consistency for both the shame ( $n = 525$ ,  $\alpha = .87$ ) and guilt subscale ( $n = 525$ ,  $\alpha = .78$ ).

### ***Emotion Expression Scale for Children***

The German version of the Emotion Expression Scale for Children (EESC; Penza-Clyve & Zeman, 2002; Nitkowski et al., 2018) was used to assess emotion suppression. In a German validation study by Nitkowski et al. (2018), the initial two-factor structure (Poor Emotion Awareness and Expressive Reluctance) could not be confirmed, leading to a one-factor structure with 13 items labelled as Low Emotion Awareness/Suppression.<sup>3</sup> Items include questions about whether the participant ever encountered emotions, which he or she were unable to identify, or how the participant generally manages emotions; for instance if he or she tends to disclose emotions readily to others or tends to keep them to him- or herself. Items are answered on a 5-point Likert scale (1 = *not at all true* to 5 = *extremely true*). Sum scores are computed ranging from 13 to 65, with higher scores indicating higher emotion suppression. The one-factor model of the EESC showed a Cronbach's alpha of .83 in a

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<sup>3</sup> Own results of a Confirmatory Factor Analysis using SPSS AMOS (IBM, 2021) could not confirm a one-factor structure of the EESC (Appendix A). However, as the validation sample of Nitkowski et al. (2018) largely resembles the sample of the present study concerning age group and cultural background, the 13-item version of the EESC has been used.

sample of 10- to 15-year-old adolescents (Nitkowski et al., 2018). In the current analyses the reliability of the 13-item one-factor model was regarded as having acceptable internal consistency ( $n = 525$ ;  $\alpha = .88$ ).

### **Procedure**

A online cross-sectional study was conducted between December 2020 and May 2021 via SoSci Survey (<https://www.soscisurvey.de/en/index>). The population of interest were adolescents, 14-18 years of age, from the German-speaking part of Europe (Austria, Germany, Switzerland). Participants were mainly recruited via Social Media posts (see Appendix B). Additionally, email requests (see Appendix C) have been sent out to relevant organisations in Germany, Switzerland, and Austria, which work in the field of family or adolescent counselling. In both emails and social media posts the study flyer has been attached (see Appendix D). Participants were recruited via voluntary response sampling; there was no monetary reimbursement, however, participants were able to sign up for a prize draw for a €15 voucher for an online store of their choice (“ArmedAngels”, “Avocadostore” or “Amazon”). All data were collected anonymized and apart from the e-mail address for contact on study information or partaking in the prize draw; no personal data were stored.

The first page contained an information letter conveying limited information about the goal of the study, its duration and instructions on how to proceed. On the following page, participants were asked to agree to an informed consent (see Appendix E) conveying information about anonymous data collection. Furthermore, participants were explained that they had the opportunity to cancel their participation at any point throughout the study without having to fear any consequences. In order to quit, ticking the appropriate option shown at the end of each page led them directly to the debriefing, which provided further information on the study goal, as well as contact information of the researchers and supervisors.

If participants did continue, they were asked to fill out demographic details (i.e. age, sexual identity, level of education, place of domicile, information about living circumstances, prior psychological diagnoses) and answer questionnaires assessing shame-proneness, family cohesion and flexibility, and emotion suppression. At the end of the study, all participants were presented the debriefing. The survey took approximately 20 minutes to complete, as it was part of a larger project, and thus included also other questionnaires (see Appendix F).

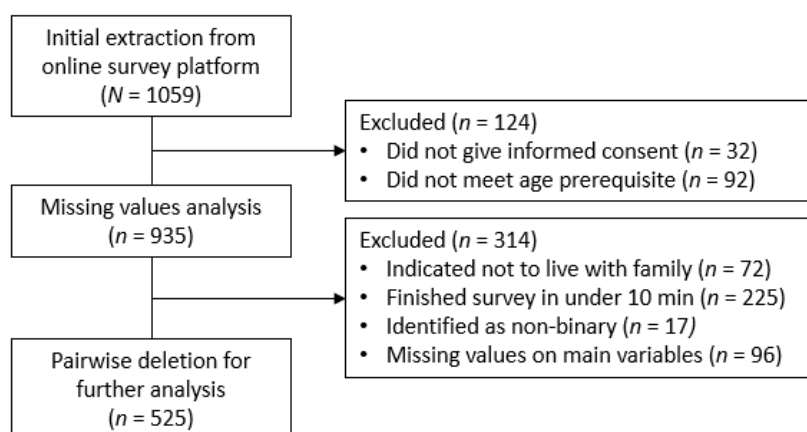
## Data Cleaning and Analysis

General data analyses were conducted with the software IBM SPSS 27 (IBM, 2020). For mediation analysis the PROCESS Macro for SPSS (v3.5; Hayes, 2012, 2017) has been used.

In total, 1059 cases have been retrieved from the online survey platform. First, 32 participants were excluded as they did not give consent to data collection. Another 92 participants were excluded as they did not pass the screening question concerning the prerequisite age. With the remaining 935 participants eligible for further analyses, a missing values analysis has been conducted according to Newman (2014). After missing values analyses an additional 72 participants were excluded as they indicated not living with their family, but either alone or with someone else. Two hundred twenty-two participants were excluded because they spend less than 10 min on the survey, which led to the conclusion that the answers were not answered conscientiously. From the remaining 638 cases, 17 participants identified as non-binary and were thus excluded from further analysis, as gender differences have been examined at a binary level. Another 96 participants were excluded, as they had a missing value for the main variables of analysis. The statistical analyses have been conducted with the remaining 525 participants. Listwise deletion was used for partial correlations. See Figure 3 for an overview of the data cleaning process.

**Figure 3**

*Exclusion Process and Sample Sizes Through Sampling Procedure and Data Analysis*



Before conducting the main analyses, the sum scores for the TOSCA-A and the EESC have been converted to z-scores. Similarly, the ratio scores for family cohesion and family flexibility, as drawn from the FACES IV, have been converted to z-scores. Z-scores have a mean of 0 and a standard deviation of 1. Regarding the interpretation of the results, a positive z-score indicates a raw score above the mean, while a negative z-score indicates a raw score below the mean. The unit of measurement is thereby standard deviations. Partial correlations, controlling for guilt-proneness, have been computed for shame-proneness, emotion suppression, family cohesion, family flexibility and gender.

As for the regression hypotheses, assumptions of linearity, outliers, independence of residuals, normality, multicollinearity and homoscedasticity have been tested in accordance with Ellis (2016) and Field (2019).

For the first research question, hierarchical regression analyses have been conducted with family cohesion and family flexibility as predictors and shame-proneness as the outcome. Guilt-proneness was included as a predictor in order to control for the shared variance within shame-proneness. The predictors were included as blocks in the model. In the first block, guilt-proneness was included as a predictor, in the second block family cohesion and family flexibility were included to isolate how much variance in shame-proneness is accounted for by family cohesion and flexibility, independent of guilt-proneness. The significance of the  $R^2_{\text{change}}$  has been interpreted as a measure of model fit.

The indirect effect of family functioning on emotion suppression through shame-proneness was analysed using the PROCESS macro tool by Hayes (v3.5; 2012, 2017). The conceptual model of mediation assumes causal relationships between variables, wherein the paths between variables (a, b and c') are interpreted as the direct effect of one variable onto another. For instance, the a-path is interpreted as the effect of X (i.e. family cohesion/flexibility) on M (i.e. shame-proneness). The mediational effect, that is the indirect effect of X on Y via the mediator, is described by the product of the a- and b-path.

Unstandardized path coefficients for total, direct, and indirect effects were interpreted using confidence intervals (95% CI based on bootstrapping with 5000 models). Bootstrapping yields the advantage of making no assumptions about the form of the sampling distribution (Preacher et al., 2007). Effects were considered significant if the confidence interval did not include zero. The hypotheses have been tested with the model for simple mediation (i.e. model 4) using family cohesion, and family flexibility, respectively, as the predictor, emotion suppression as the outcome and shame-proneness as the mediator.

For the third research question, a moderated mediation analysis using the PROCESS macro tool by Hayes (v3.5; 2012, 2017) was performed. In the appropriate model assessing moderated mediation (i.e. model 58), or conditional indirect effects, family cohesion, or family flexibility, respectively, were considered the predictors, emotion suppression the outcome and shame-proneness the mediator. Gender was included as a variable moderating both indirect paths, from family cohesion, or family flexibility, respectively, to shame-proneness, and from shame-proneness to emotion suppression. Significance interpretation was again based on 95% bootstrap CI (5000 iterations).

The decision to examine conditional indirect effects of gender in a separate moderated mediation analysis are based on work by Preacher and colleagues (2007), who suggest to “clarify the nature of key relationships” (p. 193) before adding complexity to a model. Also, in case initial mediation analysis show a non-significant mediation through shame-proneness, moderated mediation is still possible to conduct as “a significant unconditional indirect effect does not constitute a prerequisite for examining conditional indirect effects” (Preacher et al., 2007, p. 211).

## **Results**

### **Preliminary Analyses**

#### ***Missing Values Analysis***

A missing values analyses has been conducted with 935 participants which met the inclusion criteria for the study (informed consent, age). Values that indicated no response from participants have been treated as system missing values in IBM SPSS 27 (IBM, 2020). Since answers on the survey were not forced, participants had the opportunity to leave items or entire constructs unanswered. This makes it difficult to investigate a specific drop-out pattern. However, from missing values pattern analysis it becomes apparent, that the missing values correspond with the questionnaire length. That is, the further participants went on with the survey, the more missing values have been registered. While there were 818 valid responses registered for the example item of the TOSCA-A, which was the first questionnaire after the demographics, only 581 completed the last item of the EESC, which was the last questionnaire in the survey.

The percentage of respondents who are partial-respondents was more than 10%. Little’s Missing Completely At Random test revealed furthermore that missing data did not show a systematic pattern of missingness ( $\chi^2 = 4053.81$ ,  $df = 4006$ ,  $p = .295$ ), so it is assumed that the data are not missing at random or systematically. As the overall response rate was

above 30% ( $N=1059$ ,  $n_{\text{complete responses}} = 564$ ,  $n_{\text{partial responses}} = 371$ ) no sensitivity analysis has been conducted.

### ***Descriptive Statistics***

Means, standard deviations and partial correlation coefficients and their significance for gender, family cohesion, family flexibility, shame-proneness and emotion suppression, as controlled for by guilt-proneness, can be found in Table 2. Both family cohesion and family flexibility are moderately negatively correlated with shame-proneness (see Appendix I for scatterplots). When the balance regarding family cohesion, or family flexibility, respectively, increases, the shame-proneness decreases. Furthermore, gender appears to be moderately associated with shame-proneness. Lastly, emotion suppression and shame-proneness are strongly positively correlated. Increasing shame-proneness is associated with increases in emotion suppression.

Furthermore, family cohesion and family flexibility appear to be strongly positively correlated with one another. As the imbalance regarding family cohesion increases, so does the imbalance regarding family flexibility. Following Olson's circumplex model (1989; 2000; et al., 2019) and derived hypotheses, this has to be expected: Dysfunctionality on one dimension likely influences dysfunctionality on the other dimension. There appears to be seldomly dysfunctionality on only one dimension.

**Table 2**

*Means, Standard Deviations and Intercorrelations for Study Variables Controlled for Guilt-Proneness*

| Variable               | <i>M</i> | <i>SD</i> | 1.     | 2.      | 3.      | 4.     | 5. |
|------------------------|----------|-----------|--------|---------|---------|--------|----|
| 1. Gender              | -        | -         | -      |         |         |        |    |
| 2. Family cohesion     | 2.10     | 1.16      | -.044  | -       |         |        |    |
| 3. Family flexibility  | 1.54     | 0.70      | -.041  | .688**  | -       |        |    |
| 4. Shame-proneness     | 3.20     | 7.54      | .208** | -.351** | -.308** | -      |    |
| 5. Emotion suppression | 41.16    | 11.35     | .158** | -.414** | -.326** | .556** | -  |

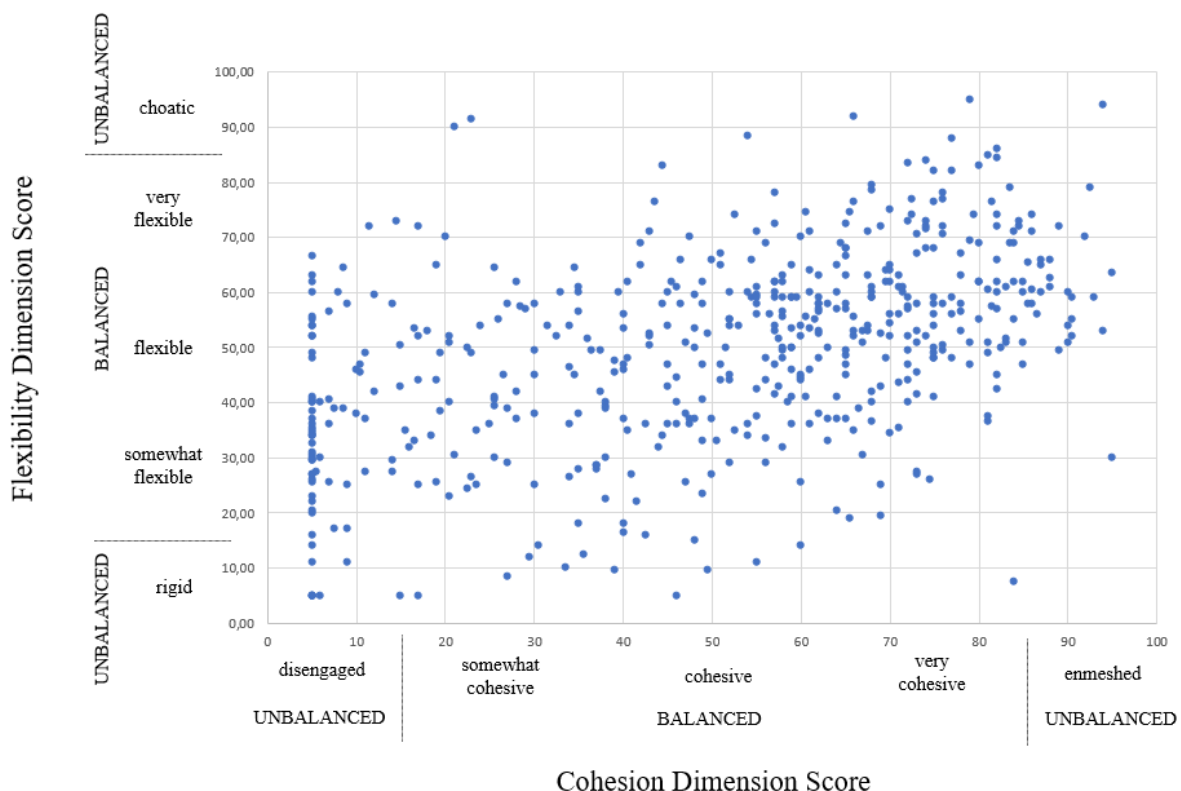
*Note.* Intercorrelations are provided for z-converted variables, while means and standard deviations are computed for sum scores, or ratio scores concerning family cohesion and flexibility.  $N = 522$ .

\* $p > .05$ , two-tailed. \*\* $p > .001$ , two-tailed.

In accordance with Olson et al. (2019), the participants' dimension scores of family cohesion and family flexibility have been plotted within a scatterplot depicting the circumplex model (see Figure 4).

**Figure 4**

*Scatterplot of Cohesion Dimension Score and Flexibility Dimension Score<sup>a</sup>*



*Note.* Dots represent participants who fall within different family systems according to the circumplex model. Adapted from “Circumplex Model of Marital and Family Systems: An Update”, by D. H. Olson, L. Waldvogel, and M. Schlieff, 2019, *Journal of Family Theory & Review*, 11(2), p. 200 (<https://doi.org/10.1111/jftr.12331>). Copyright 1999-2022 by John Wiley & Sons, Inc.

<sup>a</sup> Dimension Scores can be used to plot families onto the circumplex model. The Cohesion dimension score is comprised of the enmeshed scale, the balanced cohesion scale and the disengaged scale. The flexibility dimension score is comprised of the rigid scale, the balanced flexibility scale and the chaotic scale. Dimension scores range from 0 to 100. Ranges 0 to 15 and 85 to 100 represent the extremely imbalanced family systems chaotic, rigid, disengaged and enmeshed.

### **Assumption Checks**

Normality of the dependent variable shame-proneness was assessed consulting test statistics and histograms. Normality of shame-proneness appears to be violated as indicated by a significant Shapiro-Wilk test,  $SW = .990$ ,  $p = .001$ , which provides more power than the Kolmogorov-Smirnov test (Moni & Shuaib, 2015). Visual investigation of the histogram showed no clear violation of normality (see Appendix G). Visual investigation of the normal P-P plot indicated normal distribution of the residuals (see Appendix H). The assumption of linearity has been assessed consulting scatterplots of shame-proneness and the independent variables family cohesion and flexibility. Linearity does not appear to be clearly violated (see Appendix I, Figure I1 and I2). Homoskedasticity of the residuals has been tested by plotting the predicted standardized values against the standardized residuals. The scatterplot revealed no violation of homoskedasticity (see Appendix J). One outlier has been identified using casewise diagnostics for standardized residuals (*Std. Residual Min* =  $-2.95$ , *Std. Residual Max* =  $3.42$ ). However, the case was considered not influential, as indicated by Cook's distance (*Min* =  $.00$ , *Max* =  $.05$ ), and therefore remained in the analysis. The Durbin-Watson statistic of  $1.82$  indicates independence of residuals. Pearson correlations indicated no correlation between predictor variables, cohesion and flexibility, higher than  $.7$ , indicating no violation of multicollinearity. This assumption is supported by a Variance Inflation Factor (VIF) above  $10$  and a tolerance score above  $.02$  (Cohesion,  $VIF = 1.93$ ,  $Tolerance = 0.51$ ; Flexibility,  $VIF = 1.90$ ;  $Tolerance = 0.52$ ).

### **Multiple Linear Regression Analysis**

Multiple linear regression analysis was used to develop a model for predicting shame-proneness from family cohesion and family flexibility. Guilt-proneness was included as a predictor to control for its suggested effect.

The results of the two steps of the hierarchical regression analysis are shown in Table 3. The first step of the hierarchical regression analysis showed that guilt-proneness is a significant predictor of shame-proneness and explains approximately 20% ( $f^2 = .257^4$ ) of the variance in shame-proneness. The second step of the regression analysis showed that family cohesion and family flexibility are significant predictors of shame-proneness. Including the second set of predictors led to a significant change in explained variance in shame-proneness by approximately 10% ( $f^2 = .117$ ).

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<sup>4</sup> For calculating effect size in the regression analysis the formula  $f^2 = R^2/1 - R^2$  has been used.

**Table 3**

*Hierarchical Regression for Predicting Shame-Proneness From Guilt-Proneness, Family Cohesion and Family Flexibility*

| Predictor                                                                                                                                          | $\beta$ | $p$  |
|----------------------------------------------------------------------------------------------------------------------------------------------------|---------|------|
| <i>Step 1, <math>R^2 = 0.20</math>, <math>\Delta R^2 = 0.20</math>, <math>F(1,523) = 135.17</math>, <math>\Delta F(1,523) = 135.17^{**}</math></i> |         |      |
| Guilt-proneness                                                                                                                                    | .453    | .000 |
| <i>Step 2, <math>R^2 = 0.31</math>, <math>\Delta R^2 = 0.10</math>, <math>F(2,521) = 78.06</math>, <math>\Delta F(2,521) = 39.54^{**}</math></i>   |         |      |
| Guilt-proneness                                                                                                                                    | .495    | .000 |
| Family cohesion                                                                                                                                    | -.238   | .000 |
| Family flexibility                                                                                                                                 | -.114   | .024 |

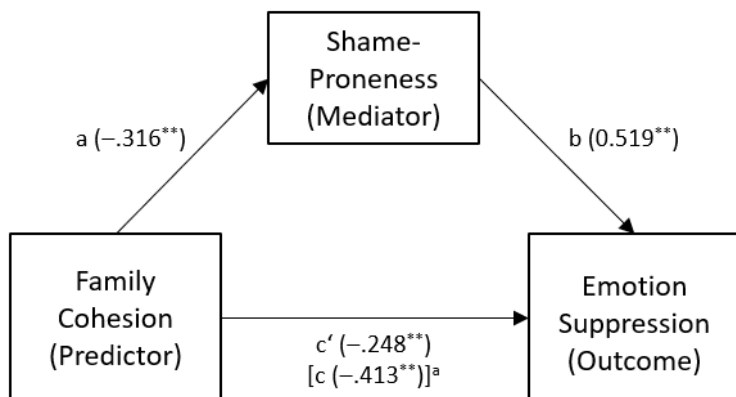
<sup>\*\*</sup> $p < .001$ , two-tailed.

### Simple Mediation Analysis

Results of the simple mediation analyses with family cohesion as the predictor revealed that family cohesion was a significant negative predictor of shame-proneness,  $SE = .036$ ,  $p < .001$ , 95% CI  $[-.388, -.243]$ . Approximately 30% of the variance in shame-proneness was explained by family cohesion ( $R^2 = .303$ ). Shame-proneness was a significant positive predictor of emotion suppression,  $SE = .041$ ,  $p < .001$ , 95% CI  $[.438, .600]$ . The effect of family cohesion on emotion suppression was significantly negative,  $SE = .039$ ,  $p < .001$ , 95% CI  $[-.491, -.334]$ , and remained significant after controlling for the effect of shame-proneness,  $SE = .037$ ,  $p < .001$ , 95% CI  $[-.321, -.175]$ , indicating partial mediation. Approximately 37% of the variance in emotion suppression was accounted for by the predictors ( $R^2 = .378$ ). The mediation by shame-proneness was significant, *indirect effect* =  $-.164$ ,  $SE = .023$ . See Figure 5 for a model display.

**Figure 5**

*Model Summary of Simple Mediation Between Family Cohesion and Emotion Suppression by Shame-Proneness*



*Note.* Model summary: ab-path (indirect effect of X on Y) 95% CI  $[-.212, -.120]$ . Coefficients presented are standardized regression coefficients.

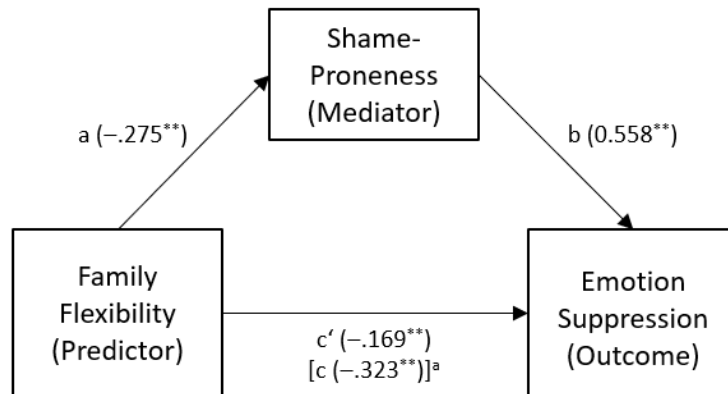
<sup>a</sup> Standardized regression coefficient neglecting the effect of shame-proneness.

\*\* $p < .001$ , two-tailed.

As for the second mediation analyses results indicate that family flexibility was a significant negative predictor of shame-proneness,  $SE = .037$ ,  $p < .001$ , 95% CI  $[-.348, -.202]$ , and explained approximately 28% of the variance in shame-proneness ( $R^2 = .281$ ). Shame-proneness was a significant positive predictor of emotion suppression,  $SE = .041$ ,  $p < .001$ , 95% CI  $[-.476, .639]$ . The effect of family flexibility on emotion suppression was significantly negative,  $SE = .041$ ,  $p < .001$ , 95% CI  $[-.403, -.242]$ , and remained significant after controlling for the effect of shame-proneness,  $SE = .037$ ,  $p < .001$ , 95% CI  $[-.242, -.096]$ , indicating partial mediation. Approximately 35% of the variance in emotion suppression was accounted for by the predictors ( $R^2 = .351$ ). The mediation by shame-proneness was significant, *indirect effect*  $= -.153$ ,  $SE = .022$ , 95% CI  $[-.199, -.111]$ . See Figure 6 for a model display.

**Figure 6**

*Model Summary of Simple Mediation Between Family Flexibility and Emotion Suppression by Shame-Proneness*



*Note.* Model summary: ab-path (indirect effect of X on Y) 95% CI  $[-.199, -.111]$ . Coefficients presented are standardized regression coefficients.

<sup>a</sup> Regression coefficient neglecting the effect of shame-proneness.

\*\*  $p < .001$ , two-tailed.

### **Moderated Mediation Analyses**

Moderated mediation was performed to investigate conditional indirect effects between variables using gender as a moderator. Results of the moderated mediation analyses with family cohesion as the predictor revealed that the interaction between family cohesion and gender was non-significant,  $\beta = -.013$ ,  $SE = .095$ ,  $p = .890$ , 95% CI  $[-.200, .174]$ , indicating no moderation of the direct effect between family cohesion and shame-proneness.

The interaction between shame-proneness and gender was non-significant,  $\beta = .005$ ,  $SE = .091$ ,  $p = .948$ , 95% CI  $[-.174, .186]$ , indicating that gender did not moderate the direct effect between shame-proneness and emotion suppression. The omnibus test of the indirect moderate effect of family cohesion on emotion suppression showed a non-significant effect,  $index = -.008$ ,  $SE = .054$ , 95% CI  $[-.108, .101]$ .

Results of the moderated mediation analyses with family flexibility as the predictor revealed that the interaction between family flexibility and gender was non-significant,  $\beta = -.079$ ,  $SE = .099$ ,  $p = .427$ , 95% CI  $[-.275, .116]$ , indicating no moderation of the direct effect between family flexibility and shame-proneness.

The interaction between shame-proneness and gender was non-significant,  $\beta = .002$ ,  $SE = .093$ ,  $p = .980$ , 95% CI  $[-.182, .186]$ , indicating that gender did not moderate the direct effect of shame-proneness on emotion suppression. The omnibus test of indirect moderate effect of family cohesion on emotion suppression showed a non-significant effect,  $index = -.043$ ,  $SE = .057$ , 95% CI  $[-.153, .073]$ . See Appendix K (Figures K1 and K2 for the model of with family cohesion, and Figure K3 and K4 for the model with family flexibility) for a visualization of the moderation by gender.

### Discussion

This research is an extension of the work by Olson (1989; 2000; et al., 2019), suggesting that internalized shame may be an important variable in adolescents' mental health, in adolescents' family experiences, in parenting practices and in the general family context. Shame-proneness was considered to be related to imbalance in the amount of cohesion and flexibility within the family context. It was expected that imbalance in either direction of cohesion and flexibility, that is both too much as well as too little cohesion or flexibility, are associated with a behavioural and emotional proneness to experience shame in arbitrary social situations. Additionally it was tested whether shame-proneness mediates the relationship between family cohesion and flexibility and emotion suppression. It was also suggested that this relationship varies for boys and girls. Gender was thus tested as a moderator.

#### Family Functionality Predicts Shame-Proneness

The first research question asked whether family functionality predicts shame-proneness. The first hypothesis of a negative association between balance in family cohesion and family flexibility, and shame-proneness has been confirmed. Results of hierarchical regression analyses showed that the ratio scores of family cohesion and family flexibility are negatively associated with shame-proneness in adolescents. Recalling that higher ratio scores are interpreted as more balance in a family system, these results indicate that a greater imbalance in terms of family flexibility or family cohesion is associated with elevated levels of shame-proneness in adolescents.

The results also show that cohesion and flexibility together explain about 10% of the variance in shame-proneness, which equals a small to medium effect size (Cohen's  $f^2 = .112$ ). The findings align well with the scientific picture regarding the relationship of family cohesion and flexibility with shame-proneness: In extremely cohesive (enmeshed) or incohesive (disengaged) families adolescents suffer either from high levels of

interdependence and control diminishing adequate social development outside of the family context, or from the parent's disinterest in their needs, which might result in a global negative self-perception of unworthiness (Grusec & Davidov, 2007; Legate et al., 2019; Pulakos, 1996; Sharabi et al., 2012). Both extremes are here shown to predict shame-proneness in adolescents that are exposed to arbitrary social situations. Similarly, extremely flexible (chaotic) and inflexible (rigid) families may predict shame-proneness either through demanding a high conformity from adolescents (rigid families), so that they develop fewer social skills and experience social inadequacy, or through uninvolved or permissive parenting, giving the child the perception of being unworthy of parental care (Mills, 2003; Parisette-Sparks et al., 2017; Salehifard et al., 2021; Sillars et al., 2005).

The present results may be interpreted in a way that lends credence to the functionalist perspective on shame. Families that display tendencies toward extreme structures are understood to have little acceptance of ambivalence among family members. This missing tolerance for disunity may contribute to feelings of insecurity and fear of standing out. From this standpoint, the proneness to react shameful in social situations can be understood as a preventive measure to shield oneself from the perceived evaluative view of others. However, there is ongoing discussion about the adaptive value of shame. According to Tangney and colleagues (1996; 2007b), shame may be considered a socially adaptive emotion in terms of its evolutionary value. However, current research shows evidence for a maladaptive impact of shame on psychological health that is valid “across methodological measures, diverse age groups, and populations” (Tangney et al., 2007b, p.27). From a social-adaptive perspective, shame is considered a maladaptive emotion triggering a self-directed inward focus of attention, thereby preventing the individual from taking reparative actions and potentially leading to social isolation.

Further perspectives on the functionalist approach to shame postulate that emotions are neither inherently adaptive nor maladaptive (Campos et al., 1994). Instead the flexibility in the adaptive value shame is determined by emotion regulation processes, i.e. whether the individual manages to cope with shame in a good or in a bad way. In line with this, Hibbard (1994) proposed a two-factor model, according to which shame is conceptualized as manifesting in two forms: A maladaptive, aggressive form and a more adaptive form. While the aggressive form is associated with intensely negative emotions, such as humiliation and disgrace, and is associated with various psychopathologies, the adaptive form involves embarrassment and blushing and evokes adaptive social functioning. Interestingly, a *balance* of aggressive and adaptive shame is associated with “normal” social functioning and well-

being (Hibbard, 1994), while the extreme forms (i.e. shame-proneness and shamelessness) predicted aggression and narcissism (Given-Wilson et al., 2011).

The current research extends scientific knowledge about the specific characteristics of family functioning. Not only is *imbalance* in the family system associated with increased proneness to shame, but balance is associated with decreased proneness to shame. The current study thereby extends findings by Mintz et al. (2017), who found no significant association between shame-proneness and positive parenting, and therefore concluded, that shame-proneness is the result of actively negative parenting. Of course, the FACES IV does not assess specific patterns of parenting, but instead sees parenting as a function of cohesion and flexibility. However, it can be concluded that a balanced amount of interdependence and independence, as well as structure and arbitrariness, are associated with shame-proneness. As family structure in the circumplex model (Olson, 1989; 2000; et al., 2019) has been mirrored in specific negative and positive parenting styles (Olson & Gorall, 2006), the present results can be seen as a first hint that also positive parenting is associated with shame-proneness.

Some concern could also be raised about the high interrelatedness between family cohesion and flexibility. The Pearson correlation coefficient and the VIF provided adequate indication for no violation of the multicollinearity assumption. However, suspicion could be indicated whether these two factors indeed measure different constructs, or whether cohesion and flexibility largely measure the same underlying construct of imbalanced families. A study by Joh et al. (2013) on the relationship between family cohesion, flexibility and problematic behaviour in adolescence could in fact not prove a curvilinear relationship between the factors. Other scholars also raised concern about the assumed curvilinearity of the circumplex model (Perosa & Perosa, 2001; Thomas & Ozechowski, 2007).

However, there are also differential results concerning family cohesion and flexibility. For instance, a study by Sharabi et al. (2012) found only family cohesion to be predictive of loneliness and low sense of coherence in adolescence, while family flexibility was not significant in hierarchical regression analyses. This suggests that there is indeed a differential association of both family factors with adolescents' development. This is also reflected in the results of the current study: Therefore, family cohesion appears to be a stronger predictor of shame-proneness and of emotion suppression than family flexibility. A plausible explanation for this is that in at least in extremely cohesive families the evaluation by family members is of very high importance, which can be ascribed to the high degree of interdependence. The effects of perceived negative evaluation on the adolescent's self-worth may thus be more grave in cohesively imbalanced families.

On a methodological note, assumption checks showed a statistical violation of normality of shame-proneness, although visual investigation of the histogram revealed approximately normal distribution. However, potential skewness of the distribution might limit confidence in the current results. Similarly, the reliabilities of the FACES IV scales showed only moderately adequate internal consistency for several scales. It is important to keep these limitations in mind, when interpreting the current findings.

### **Shame-Proneness as a Mediator**

The second research question asked for the mediation effect of shame-proneness within the relationship between family cohesion, or family flexibility, and emotion suppression. The first hypothesis, which suggests that balance in either of the two dimensions, cohesion or flexibility, is negatively associated with emotion suppression, has been confirmed. Family cohesion and family flexibility were significant predictors of emotion suppression. The direction of effect indicates, that the more balance there is in a family system, the less adolescents tend to suppress their emotions. Adolescents in families with a imbalance in family functioning in the areas of cohesion and flexibility may be more reluctant to share their emotions and tend to suppress them. These results align with scientific research suggesting that family cohesion and flexibility may predict suppression of thoughts and feelings via exerting emotional control, shaming, conditional care, and neglect (Balan et al., 2007; Brody et al., 2014; Denham et al., 2003; Eisenberg & Fabes, 1994; Magai et al., 2004; Manczak et al., 2019).

The second hypothesis of significant mediation by emotion suppression in the relationship between family functioning and shame-proneness has also been confirmed. The direction of the path coefficients point toward the interpretation that imbalance in family cohesion and flexibility increases shame-proneness, which in turn increases emotion suppression in adolescents. Thus shame-proneness plays a prominent role in the relationship between family dysfunctionality and emotion suppression in adolescents. The results furthermore indicate that for both mediation analyses the reported effect sizes were medium to large, ranging from  $-.248$  for the indirect effect of family cohesion on emotion suppression via shame-proneness (or  $-.169$  for the model with family flexibility) to  $.519$  for the relation between shame-proneness and emotion suppression (or  $.558$  for the model with family flexibility).

In the present study the directionality of associations has been statistically fixed to assume that shame-proneness mediates the relationship between family functionality and

emotion suppression. Although causality is a feature inherent to the model proposed by Hayes (2012, 2017), assumptions of causality cannot be proven. Therefore, it might also be the other way around and shame-proneness may be the outcome of emotion suppression. Research by Berking et al. (2008) for instance showed that the tendency to suppress negative emotions precedes emotional adjustment. In this regard shame-proneness may be interpreted as a form of emotional maladjustment in the sense that it is a by-product of a stable negative self-evaluation. Additionally, fearing negative evaluation of emotions and subsequent emotion suppression can trigger safety-seeking behaviours, such as social withdrawal, which may increase shame-proneness (Gross & John, 2003). Supporting this idea, emotion suppression draws the cognitive focus inwards, diminishing sensitivity to social cues. This might in turn increase insecurity in social interactions and lead to shame-proneness (Richards & Gross, 2000; Srivastava et al., 2009). In light of this research, it might therefore also be plausible that emotion suppression precedes habitual shame and shame-proneness.

Another concern is related to the use of the EESC by Nitkowski and colleagues (2018), which was created by summarizing the formerly two scales of Expressive Reluctance and Poor Emotion Awareness into one construct, namely Low Emotion Awareness/Suppression. The present study was unable to reproduce this factorial structure unambiguously. However, the merge of the two constructs under the concept of emotion suppression raises the question, whether adolescents are actively suppressing their emotions or whether they are numb to certain affective states, in which case they would fail to perceive their emotions in depth in the first place.

In line with these considerations, a closer evaluation of the impact of emotion regulation strategies in relation to shame may be valuable. Emotion suppression is considered part of response-focused emotion regulation strategies, indicating that what is altered is not the inner experience of the emotion itself, but merely its outward expression (Gross, 2002, 1998; Gross & Levenson, 1993; Schmeichel et al., 2006; Wenzlaff & Wegner, 2000). However, the two-fold distinction of emotion suppression blurs the line between antecedent-focused and response-focused emotion regulation. It is therefore not distinguishable, whether poor emotion awareness or expressive reluctance is associated with family imbalance and shame-proneness.

In a study by van Strien et al. (2019) negative parenting quality during the infancy stage was investigated in terms of its relation to emotional eating during adolescence. Interestingly the study conducted a serial mediation, where negative parenting predicted emotion suppression, which in turn predicted more problems in identifying emotions,

ultimately predicting emotional eating in adolescence. This suggests that being exposed to negative parenting in general might diminish the ability to correctly identify emotions later in life, as opposed to merely suppressing them. Future research should investigate the two-steps approach to emotion suppression in relation to family functioning and shame-proneness, one occurring before an emotion arises, the other occurring when the emotion is already there. Alexithymia, the inability to describe inner emotional states, could serve as an interesting scientific platform to investigate differences in emotion suppression in relation to shame(-proneness).

### **The Role of Gender Differences**

The third research question asked for a moderating effect of gender in the mediational model. The first hypothesis, that gender and family cohesion, or family flexibility, respectively, interact in their effect on shame-proneness, could not be confirmed. The positive relation between family functioning and shame-proneness was not stronger for female participants than for male participants. This finding is inconsistent with research suggesting that positive family interactions seem to be more important for girls than for boys and that girls might suffer more detrimental consequences following family conflict (Cyranowski et al., 2000; Rudolph, 2002; Telzer & Fuligni, 2013).

Interestingly, gender differences in family cohesion and flexibility were oftentimes assessed by looking at the parents' perception of family functioning. For instance, Barnes and Olson (1985) found that mothers judged their families to be more balanced in cohesion and flexibility than fathers did. Gender differences therefore appeared to emerge on the parent level, not among adolescents, where no gender differences were found. However, parents' perspective regarding family functioning is not to be taken as entirely objective. Research shows that adolescents rate their families to be less cohesive, less open in communication and more problematic than their parents do (Callan & Noller, 1986; Noller et al., 1992). Presumably, no gender differences in adolescents were found in the present study, because gender differences may become pronounced later in life, while for adolescents family and parents present a collective issue; the same considerations likewise apply to girls and boys.

The second hypothesis expected gender differences to moderate the mediation of shame-proneness in the association between family functioning and emotion suppression. Although the direction of effect supports the hypothesis, results did not reach significance level, indicating that shame-proneness is not stronger associated with emotion suppression for girls than for boys. This finding contradicts research, which posit that women who are more

shame-prone, tend to suppress negative emotions more than men (Nyström & Mikkelsen, 2013; Velotti et al., 2017).

That the current results failed to find an influential effect of gender might be due to the fact that the sample consisted of a group of adolescents who are part of a generation that breaks with traditional notions of gender roles. The current gender debate challenges formerly inviolable assumptions of what biological gender entails. Adolescents therefore consciously contradict gender conform stereotypes in an attempt to behave in accordance with their own subgroup. Furthermore, adolescents might question the role of biological gender, in the sense of denying biological gender to be a determinant of gender-specific emotion coping and feelings of shame. More generally however, examining gender as a dichotomous feature might not match the Zeitgeist of young adolescents and does not do the complexity of the topic justice. Instead, perceptions of gender role socialization, sexual identity and peer group acceptance of norm deviations need to be the focus of future research on gender differences.

Assessment of gender diversity allows to draw more well-grounded conclusions about possible gender differences and effects of gender socialization. The threefold assessment of gender in the current study (male, female, other) made it possible to gain more confidence about the results concerning *binary* gender differences, because individuals not identifying as binary have been filtered out. However, it is not say that individuals identifying as non-binary are not just as important in scientific research. Instead, especially in adolescent samples it might be fruitful to investigate non-binary experiences of family functioning, emotion coping and internalized shame; concepts which have been repeatedly associated with the development of sexual identity (Legate et al., 2019; Scheer et al., 2020). To do the complexity and importance of sexual diversity justice, it is necessary to conduct specific research and to formulate in-depth hypotheses about non-binary gender differences in terms of internalized shame experiences.

Results of post-hoc *t* tests give further insights into gender differences in shame-proneness and emotion suppression showed that there is a significant difference between boys and girls in emotion suppression,  $M_{\text{diff}} = -0.440$ , 95% CI  $[-0.642, -0.237]$ ,  $f(523) = -4.288$ ,  $p < .001$ , and in shame-proneness,  $M_{\text{diff}} = -0.647$ , 95% CI  $[-0.839, -0.455]$ ,  $t(523) = -6.653$ ,  $p < .001$ . Effect sizes are considered large for both emotion suppression, Cohen's  $d = 0.964$ , and shame-proneness, Cohen's  $d = 0.984$ . Girls therefore appear to show more emotion suppression and more shame-proneness than boys. Regarding shame-proneness, the result is

consistent with research on gender differences (Adams, 2005; Ferguson et al, 2000; Tangney & Dearing, 2002). Presumably, girls are sensitized to pay closer attention to other people's feelings and to act in a more considerate manner, while boys are less likely to be socially rewarded for aloofness and socially punished for it.

Similarly, results concerning emotion suppression also align with the expectations, that girls tend to engage more in emotion suppression of negative emotions. Although in general men tend to suppress their emotions more frequently and women are expected to show emotions more readily (Flynn et al., 2010; Rogier et al., 2017), girls might engage more frequently in emotion suppression, because they do not want to burden other people with their emotions, especially when they are negative. Similarly, the EESC asks for emotions that have a particularly negative valence, such as outward aggression. As this kind of emotion is less socially acceptable for girls to show, it might be that the answers on the EESC are sensitive to a form of social desirability to which girls are more likely to be subjected.

Other sources, however, point toward the idea that gender differences manifest not in the subjective experience of shame, but mainly in the way of coping with shame (Senécal et al., 2000; Szentágotai-Tátar & Miu, 2016). In this regard, in order to suppress shame female adolescents are said to engage more often in self-destructive behaviours and self-harming coping strategies (Nyström & Mikkelsen, 2012; Vagos et al, 2018). Males adolescent on the other hand have an externalizing shame coping style, characterized by aggression and delinquency (Garnefski et al., 2005; Heaven et al., 2009; Nyström & Mikkelsen, 2012). In this regard, Paulo et al (2020) found gender differences in adolescents' use of shame coping strategies and associated psychopathology, however, there was no influence of gender on the association between external shame itself and psychopathological symptoms.

In an attempt to make sense of these irregularities in research, findings by Benetti-McQuoid and Bursik (2005) suggest that women are found to experience more shame when scenario-based measures, such as the TOSCA (Tangney et al., 1989), are used, as they assess situational shame-proneness rather than a chronic, transgression-related experience of shame. Research by Mintz et al., (2017) supports this suggestion, although including gender in the model of predicting shame-proneness from negative parenting behaviours did not change the explained variance significantly. Clearly research on gender differences concerning shame-proneness and its relation to emotion regulation strategies are still in the fledging stages. Factors other than biological gender need to be reconsidered as potential moderators in this relationship, in order to acknowledge the complex processes of gender identity formation and gender socialization. Regarding the current study, it is important to note that the sample

consisted of more than three times as many female than male participants. Future research should try to secure a balanced sample regarding gender and also make use of different assessment measures of shame-proneness.

### **Strengths and Limitations**

The present study stands out with several strengths. Firstly, in accordance with Faul et al. (2009) an a-priori power analysis using *G\*Power* was conducted. This analysis revealed a necessary sample size of 107 in order to obtain statistical power of .95, with a medium effect size ( $f^2 = .15$ ). The actual sample size used in the current analysis exceeds these results by far, thus allowing for confident interpretation of the results.

Relations between variables have been assessed using partial correlations controlling for guilt proneness and including guilt-proneness as a covariate in regression analyses. This is in line with research suggesting a significant interrelatedness of the two constructs (Rüsch et al., 2007; Tangney et al., 1989). In fact, not assessing partial correlations may have yielded different results with regard to the association between shame-proneness with family structure. Mintz et al. (2017) for instance, found that parenting practices were only significantly negatively correlated with shame-proneness under partial correlations, that is, when controlling for guilt proneness., Mintz et al. (2017) conclude that families and parents may have a greater influence on the children's moral development than on their self-image. Although family functioning and shame-proneness were still moderately negatively correlated when guilt-proneness was controlled for, a combination of the TOSCA-A (which assesses the *affective experience* of proneness to shame and guilt) and other, more behaviour-focused assessments (e.g. the Guilt and Shame Proneness Scale, which differentiates subtypes of shame-proneness and their behavioural impact, Cohen et al., 2011) may be useful to further distinguish the emotional component of shame-proneness from its behavioural implications.

The present study has several limitations. This study implemented a cross-sectional design, which limits the evaluation of a temporal order of the associations. Therefore, based on the negative association between family functioning and shame-proneness, it cannot be concluded that family functioning influences shame-proneness in adolescence. It might just as well be that a strong tendency to react shameful influences the way family members interact with one another. For instance, shame-proneness might develop along with social insecurity in adolescence, leading to social withdrawal and deficient autonomy development. Parents might feel coerced to organized their family system in a structured manner, feeling the need to establish clear rules and demand obedience from their children. This would pave

the ground for what Olson conceptualized as a rigid family system, marked by low levels of flexibility.

Similarly, shame-proneness may not only be influenced or associated to the family environment. Considering the large proportion of unshared environmental influences in the genesis of shame found in the study by Nikolic et al. (2021), it is unlikely that the shared variance in shame is only accounted for by family factors alone. This is further supported by the finding that approximately 10% of the variance in shame-proneness was accounted for by family cohesion and flexibility. Indeed, shame experiences may play a large role outside of the family, considering that it is associated with bullying experiences in youth (Ahmed, 2006; Ahmed & Braithwaite, 2004; Strøm et al., 2018; Wu et al., 2021), as well as perceptions of low social rank (Matos et al., 2014; Weisman et al., 2011), and with the experience of traumatic life events and abuse (Stuewig & McCloskey, 2005; Szentágotai-Tătar & Miu, 2016), identifying shame-proneness as a large array of potential research fields.

An additional limitation arises from the mode of assessment of family functioning as global, neglecting to differentiate between the extreme forms of family functioning. Thus, the upper and lower extremes of family cohesion (enmeshed and disengaged) and family flexibility (rigid and chaotic) have been summarized into ratio scores reflecting imbalance in either dimension. From the study and its results alone it cannot be concluded, which specific family system is related to shame-proneness in adolescents. Given existing literature on the circumplex model, however, it appears that specific family system patterns are differentially associated with adolescents' emotional and social development (Salehifard et al., 2021; Sharabi et al., 2012; Parisette-Sparks et al., 2017).

In line with concerns about the interpretability of the current results regarding family cohesion and flexibility, not all clusters of the extremes of family functionality are represented in the sample at hand (see Figure 4). While the majority of participants fall into the more or less balanced levels of cohesion and flexibility, no adolescent seems to fall into the chaotically disengaged or the rigidly enmeshed family clusters. This means that these extremes of family functioning have not been covered within the scope of the current research. This also limits conclusions drawn from the current results regarding the association between imbalanced family systems and shame-proneness in adolescents, seeing as only one imbalanced level of family cohesion and family flexibility has been exploited fully.

In addition to methodological concerns regarding the circumplex model, the present study did not assess the external circumstances regarding the family. As pointed out by Olson (1989; 2000; et al., 2019) temporary shifts in cohesion and flexibility from balanced in the

direction of imbalanced levels is not considered maladaptive. In fact, certain external circumstances might make a shift from balanced flexibility toward a rigid family system unavoidable and—in terms of the well-being of all family members—might even be considered adaptive. The current study did not assess these temporary changes; For answering the items of the FACES IV no time reference (e.g. within the last 6 months) has been given to participants. Additionally, if external stressors would have been assessed, such as loss of a family member or familial conflicts, the interpretation of the results would have allowed for more refined conclusion regarding the relationship between family factors and shame-proneness in adolescents.

In line with this, only adolescents have been targeted as representatives of their family systems, limiting the generalizability of the results to entire families. Thus, results only concern the family functioning as it is perceived by adolescents. However, their perception often deviates from their parents' (Barnes & Olson, 1985; Callan & Noller, 1986; Noller et al., 1992), although reasons for that range from social desirability on part of the parents to rebellious motives on side of the adolescent. Since family functioning involves more than one perspective, it might be fruitful to investigate family functioning via observational methods instead of self-report questionnaires, which might, at least partially, be subject to effects of social desirability.

Another limitation concerns the sampling procedure of the current study. Shame is oftentimes considered a “hidden” emotion, which is less readily accessible to the own consciousness, because it is connected to the admission of the own self as wrong and inadequate (Eterović, 2020; Johnson-Laird & Oatley, 1989; Shaver et al., 1987). Hiding shame behind other affects, such as aggression or defiance, serves the adaptive function of leaving the self-worth more or less intact. For reasons pertaining to the way in which participation in the study was advertised, it might be that only those adolescents participated in the study that have a perceived conscious access to their own emotions and shame.

These considerations raise the question, whether self-conscious emotions can be adequately assessed using self-report questionnaires. This is shown in the study of Lanteigne and colleagues (2014) on the expressive suppression of shame, where it was shown, that the physical reactivity oftentimes does not match the outward display of affect. Research on self-conscious emotions relies on verbal report of inner experiences, making research methodologically difficult (Eterović, 2020; Johnson-Laird & Oatley, 1989). Supporting this claim, philology research pigeonholes shame under the construct of sadness in linguistic

placements and usage, which means that shame is described by means of phenomenological terms prototypically attributed to sadness (Shaver et al., 1987). This further endorses the conceptualization of shame as a hidden emotion.

### **Clinical Implications**

Research on shame-proneness and family functioning stand at the beginning, limiting precise implications for clinical practice. However, shame-proneness is a powerful determinant of difficulties in social functioning especially in adolescence. Although established as governing negative outcomes for well-being and mental health, the tendency to experience shame needs to be understood as an adaptive response of adolescents toward restricting familial environments. As such, clinicians and therapists need to be aware of the protective function of shame-proneness for adolescents' sense of integrity. This supports the idea that not the experience of shame itself is problematic, but the lack of options for action in face of imbalanced familial environments on the side of the adolescent. As shame-proneness has been established as a trajectory to the global tendency to suppress unwanted or negatively emotions, clinicians need to attend to the adolescent's style of coping with his or her emotions and actively encourage the open sharing of difficult emotions, both in therapy as well as within the context of the family.

By mapping families along the two dimensions cohesion and flexibility, the circumplex model offers a possibility to get an idea about how adolescents perceive their family system. Clinicians and therapists are thereby enabled to assess the adolescent's perception of family cohesion and flexibility in a structured manner. Although discussions are ongoing about the curvilinearity of the constructs, the circumplex model sensitizes clinicians and therapists to attend to nuanced differences in the amount of cohesion and flexibility; While assessments of family functioning oftentimes fall victim to prototypical ideas of linearity in family factors (i.e. the more the better), the FACES IV point toward systems adolescents might perceive as *too* cohesive or *too* flexible.

Crediting importance to the system-focused approach of interfamilial relations preventive measures concerning adolescents' mental health should take the parents' emotion socialization behaviour into account, because it fundamentally shapes emotion regulation capacities in adolescents (Hajal & Paley, 2020). Education of families, clinicians and adolescents concerning structural family functioning and its relationship with maladaptive shame holds the potential of improving overall well-being as well as adolescent communication behaviours concerning difficult emotions.

On a more global account, the development and expansion of a sustainable support system within the health care structure is needed in order to support adolescents during acute crisis. It is necessary to make sure that adolescents master developmental challenges and successful identity formation. Clinicians should respect adolescents' need for autonomy and the conflicts that might arise during this challenging stage of life. While mediating family sessions and conflicts clinicians need to make an effort in understanding both parents and adolescents and their individual challenges. In doing so, the family context can be reshaped and employed as a resource for adolescents.

### **Future Research Directions**

As this research was a first try in bridging the gap between aspects of family functioning according to the circumplex model (Olson, 1989; 2000; et al., 2019) and shame-proneness in adolescents, many opportunities for future research remain to be exploited. In the current study, only the family environment as a whole has been assessed in relation to emotion suppression and shame-proneness. Research by Legate et al. (2019) however indicates that mothers' and fathers' autonomy support are differentially associated with internalized shame in adolescents. While only for mothers a mediational relationship between autonomy support and internalized homophobia via shame was established, father's autonomy support only showed significant correlations with the constructs. This research shows that a distinction between adolescents' perception of fathers' and mothers' parenting is necessary; Longitudinal designs could additionally help to give more definite results concerning mediational analyses.

In line with this, it needs to be acknowledged that parenting is a dyadic experience. According to Bronfenbrenner's ecological systems theory (1979), not only does the family affect the child's beliefs and behaviours, the child also influences the parents' beliefs and behaviour. These bi-directional influences need to be assessed in greater detail. Research should, for instance, consider longitudinal designs of studies to examine early family functioning and developmental changes in shame-proneness. Furthermore, in order to disentangle bi-directional effects future research could investigate adolescents' temperament and specifically parenting-temperament interactions and their effect on family functioning and shame development in adolescence.

Advancing the mediational model of the current study, future research could venture a closer look at the relationship between shame-proneness and emotion suppression in its relation to psychopathological symptoms. Scientific research as well as data from the current study support the high relevance of shame in psychological disorders (Elison et al., 2014;

Fergus et al., 2010; Hejdenberg & Andrews, 2011; Mills et al., 2015; Muris et al., 2015; Troop & Redshaw, 2012; Rahim & Patton, 2015; Velotti et al., 2017). Emotion suppression might itself be a mediator in the relationship between shame-proneness and internalizing and externalizing symptoms. The present research findings might also be interpreted as indicative that being shame-prone activates avoidant emotion regulation tendencies on a global level, which may include shame itself. It might therefore be interesting to investigate the trajectory from shame-proneness to externalizing and internalizing psychopathologies via emotion suppression, especially focusing on the way of coping with shame.

Furthermore, the current sample consisted only of German, Austrian and Swiss participants. While in Western European cultures emotion expression is highly encouraged (Markus & Kitayama, 1991; Matsumoto, 1990; 1993; Oyserman et al., 2002; Wierzbicka, 1994), in Asian cultures interdependence and collectivism foster emotion suppression mainly for altruistic reasons with the main motive being the desire not to hurt others' feelings (Wierzbicka, 1994). Similarly, emotion suppression in western cultures is associated with insecure attachment and social distrust (Gross & John, 2003); an association that is less likely to hold water for Asian cultures. Likely, shame may be regarded as a social facilitator in these cultures: For instance, Japanese samples appear to show higher levels of external than internal shame, reflecting the high value of collectivistic approaches to social ecology (Gilbert, 1998, 2007; Matos et al., 2021; Wong & Tsai, 2007; Sznycer et al., 2012). Future research should investigate moderator effects of cultural diversity on the association between shame-proneness and emotion suppression.

Lastly, future research could advance statistical methods used in the current research to make more refined assumptions about the dimensions of the circumplex model and shame-proneness. As such, Structural Equation Modeling offers the opportunity of modelling and analysing direct and indirect relationships between various dependent and independent variables, allowing for causal inference (Gefen et al., 2000). In comparison to using PROCESS (Hayes, 2012, 2017) for examining (conditional) indirect effects, Structural Equation Modeling has the advantage of using latent instead of observed variables, which can be used as a basis for reducing random measurement errors (Cheung & Lau, 2015), and yields the possibility of greater flexibility in model specifications as well as in handling missing values (Hayes et al., 2017).

## Conclusion

The implications of the present research fall into line with current opinions favouring an integrative approach of theories toward self-conscious emotions and shame in particular (Dempsey, 2017). The main question of emotion research is therefore no longer whether shame is maladaptive or not, but in which specific circumstances and under which conditions it may be considered adaptive or maladaptive. This study constitutes a first attempt in research on the link between perceived dysfunctionality of adolescents' family systems and shame-proneness by approaching family functionality under the notion of balance versus imbalance as proposed by Olson's circumplex model (1989; 2000; et al., 2019). Findings showed imbalance in cohesion and flexibility to predict shame-proneness in adolescents, with shame-proneness significantly explaining the relation between family functioning and emotion suppression. Although gender did not significantly influence associations within the variable network, current gender debates on the interplay between biological and social gender point toward a gaining complexity of gender-related factors in the experience of self-conscious emotion.

The circumplex model raises the claim of unifying several operationalizations of family functioning into two factors. This could be judged as overambitious or even problematic per se, as various definitions and ideas exist on what constitutes harsh parenting, emotional climate or constricting family ties. Furthermore, research on family functioning is subject to time-specific changes: What might have been denounced as a permissive parenting style with chaotic family circumstances at the end of the last century, when Olson first developed the circumplex model, might stand out today as a modern approach to cohabiting and raising children. Likewise, perceptions of cohesion and flexibility entail a culture-specific dimension, which further adds complexity to the perceived adaptivity concerning family functioning and shame.

Additionally, the recognition within society of adolescents' need for autonomy and independence versus discipline lacks behind scientific research findings. This calls for advancements concerning open access to science, thus making research and its implications available for the general public. Nevertheless, this research raises awareness once more about the importance of family structure in adolescent emotional development and the need to find balance between giving support and taking responsibility, between setting boundaries and allowing latitude, and between autonomy support and parental control. The present findings suggest that feelings of shame may go beyond mere situational affective states, but might develop into the internalized behavioural tendency of being prone to shame across social

situations; that is shame may become a state of being, influencing the way we perceive ourselves, how we react emotionally and how we function socially. Or, as Ernaux summarises, “shame is certainly one of the most powerful emotions one can ever feel. You are completely dominated by it and it forces you to secrecy”<sup>5</sup> (Suhrkamp Verlag, 2018, 0:09; S. Große, Transl.).

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<sup>5</sup> Original text: “La honte est certainement le sentiment un des plus puissant qu’on puisse connaître. Dans la mesure où il remplit tout votre être et est il oblige aux secrets.”

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**Index of Abbreviations**

|           |                                                      |
|-----------|------------------------------------------------------|
| CFI       | Comparative Fit Index                                |
| EESC      | Emotion Expression Scale for Children                |
| FACES IV  | Family Adaptability and Cohesion Evaluation Scale IV |
| NFI       | Normed Fit Index                                     |
| RMSEA     | Root Mean Square Error of Approximation              |
| TLI       | Tucker-Lewis-Index                                   |
| TOSCA(-A) | Test of Self-Conscious Affect (for Adolescents)      |

## Appendix

### Appendix A: Analyses of Factorial Structure of the Emotion Expression Scale

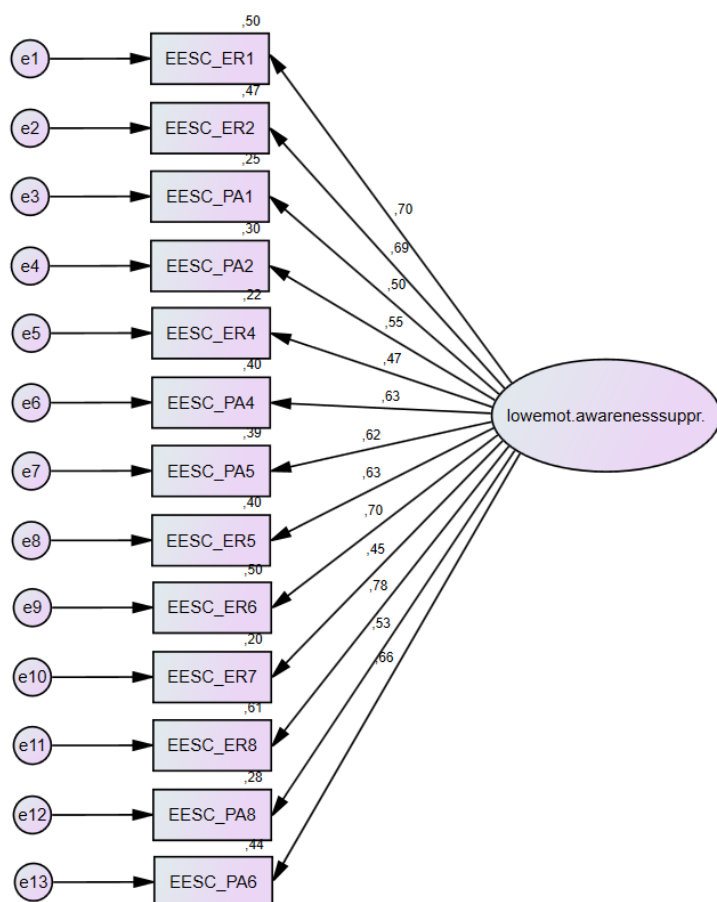
#### Appendix A

#### Factor Analysis of the Emotion Expression Scale

Confirmatory Factor Analysis (CFA) of EESC suggested poor model fit of one-factor model. Standardized factor loadings of each item onto the factor “low emotional awareness/suppression” is shown in Figure A1. Model fit was judged by the significance test of the Chi-Square statistic, the Normed Fit Index (NFI), the Tucker-Lewis Index (TLI), the Root Mean Square Error of Approximation (RMSEA) and the Comparative Fit Index (CFI; see Table A1).

**Figure A1**

*Standardized Factor Loadings*



**Table A1***Overview of Model Fit Indices for One-Factor Model*

| Measure    | Acceptable fit if | Model fit           |
|------------|-------------------|---------------------|
| Chi-Square | $p > .05$         | 729.215**           |
| RMSEA      | $< .08$           | .140                |
|            |                   | 90% CI [.131, .149] |
| CFI        | $\geq .90$        | .767                |
| TLI        | $\geq .90$        | .720                |
| NFI        | $\geq .95$        | .751                |

\*\*  $p > .001$ , two-tailed.

**Appendix B: Facebook-Post for Study Participation****Appendix B****Facebook-Post for Study Invitation**

Online-Studie „Sollte ich mich was schämen? Emotionsentwicklung in der Familie.“

Die Entwicklung des Schamgefühls hat seinen Ursprung in der Kindheit und Jugend, häufig spielt das Zusammenleben in der Familie eine wichtige Rolle. Ein ausgewogenes Maß an Schamgefühl hat für uns Menschen als Mitglieder von Gesellschaften seinen Sinn und Zweck. Sehr häufiges und starkes Schamempfinden kann allerdings negative Auswirkungen auf unser psychisches Wohlbefinden haben. Wir suchen Jugendliche zwischen 14 – 18 Jahren, die an einer Online-Studie der Fakultät für Psychologie (Universität Wien) teilnehmen. Wir interessieren uns dafür, wie bei dir in der Familie das Miteinander stattgefunden hat, und wie du mit unangenehmen Situationen umgehst. Als Aufwandsentschädigung verlosen wir Gutscheine im Wert von 15 Euro für einen Online-Shop deiner Wahl (Avocadostore, Armed Angels oder Amazon). Hier geht's zur Studie: <https://www.soscisurvey.de/emotionfamilie/H>

## **Appendix C: EMail Invitation for Study Participation**

### **Appendix C**

#### **EMail Invitation for Study Participation**

Sehr geehrte Damen und Herren,

mit diesem Schreiben möchten wir auf eine aktuelle Online-Studie der Fakultät für Psychologie der Universität Wien aufmerksam machen: „Sollte ich mich was schämen? Emotionsentwicklung in der Familie.“.

Dass psychische Probleme oder Störungen ihren Ursprung in der Kindheit haben, gilt mittlerweile als weitgehend anerkannt. Die Tendenz, häufig ein starkes Schamgefühl zu empfinden, wird in wissenschaftlichen Studien zur Psychopathologie von Kindern und Jugendlichen oft als Prädiktor für unterschiedliche psychische Leiden wie Depressionen oder Zwangsstörungen aber auch für aggressives Verhalten und Delinquenz identifiziert. Das heißt einfach gesagt, für Kinder und Jugendliche mit einer überdurchschnittlichen Neigung zu Scham, besteht ein höheres Risiko, diese Leiden auszubilden. Die Familie bildet einen der wichtigsten Rahmen für die Entwicklung unserer Persönlichkeit. Inwiefern diese bei der Entwicklung des Schamgefühls eine Rolle spielt, wollen wir mit dieser Studie untersuchen.

Die vorliegende Studie untersucht das Erleben Jugendlicher im Alter von 14 bis 18 Jahren mittels Online-Fragebögen (weitere Informationen entnehmen Sie bitte dem Anschreiben und Studienflyer im Anhang). Da Ihre Organisation Kinder und Jugendliche unterstützt und Familien eine Anlaufstelle bietet, wäre es uns eine große Hilfe, wenn Sie uns bei der Kontaktaufnahme zu unserer Zielgruppe unterstützen könnten. Mit Ihrer Mithilfe leisten Sie einen bedeutenden Beitrag zur kinder- und jugendpsychologischen Forschung.

Für Ihre Bemühungen und Ihre Unterstützung sind wir Ihnen sehr dankbar. Bei Rückfragen stehen wir jederzeit zur Verfügung.

Mit freundlichen Grüßen

Rahel Lea van Eickels, BSc MSc

Univ.-Prof. Dr. Martina Zemp

## Appendix D: Flyer

## Appendix D

## Flyer

# Jugendliche für Online-Studie gesucht



15 €

Gutscheine  
zu gewinnen

## Sollte ich mich was schämen? Emotionsentwicklung in der Familie

Diese Studie hat das Ziel, den Einfluss der Familie auf die individuelle Entwicklung des Schamgefühls und jugendliches Befinden zu untersuchen.

**Teilnahme:**

Wenn du teilnehmen möchtest, nutze den folgenden Link (Dauer: ca. 20 Min.):

<https://www.soscisurvey.de/emotionfamilie/>

**Gewinnspiel:**

Wir verlosen 10 Gutscheine im Wert von 15 € für einen Online-Store deiner Wahl („Avacadostore“, „Armed Angels“ oder „Amazon“).

**Teilnahmevoraussetzungen:**

- Alter zwischen 14 und 18 Jahre

**Studienleitung:**

Univ.-Prof. Dr. Martina Zemp,  
Rahel Lea van Eickels, BSc MSc

**Kontakt:**

emotion.familie.2020@univie.ac.at

## Appendix E: Informed Consent

### Appendix E Informed Consent

#### Teilnehmer\*inneninformation

„Sollte ich mich was schämen? Emotionsentwicklung in der Familie“

Liebe\*r Teilnehmer\*in,

wir laden dich herzlich ein, bei unserer Studie mitzumachen.

Wenn wir uns in der Anwesenheit anderer falsch verhalten haben, kann es sein, dass wir uns deswegen schlecht fühlen. Wir schämen uns. Uns interessiert, wieso manche Menschen mehr, manche Menschen weniger Scham empfinden. Wir würden uns freuen, wenn du uns hilfst, diese Frage besser zu verstehen.

Die Teilnahme an dieser Studie ist vollkommen freiwillig. Das heißt, du entscheidest selber, ob du teilnehmen willst. Wenn du während der Studie merkst, dass du doch nicht mehr mitmachen möchtest, kannst du die Teilnahme jederzeit und ohne Angaben von Gründen beenden.

#### 1. Warum machen wir diese Studie?

Wir wollen mehr über die Entstehung des Schamgefühls erfahren. Scham kann ähnlich wie andere Emotionen, zum Beispiel Wut, Freude oder Trauer eine Funktion für uns Menschen persönlich, aber auch für das Zusammenleben erfüllen. Eine Tendenz dazu, Scham häufig und stark zu empfinden, kann aber auch negative Auswirkungen auf unser Wohlbefinden haben. Es ist daher wichtig, mehr über die Entstehung von Schamgefühlen herauszufinden. Die Familie spielt eine große Rolle bei der Entwicklung unserer Persönlichkeit. Wir interessieren uns dafür, wie ihr zu Hause in der Familie miteinander umgeht und redet, und inwiefern dies einen Einfluss auf dein Schamempfinden hat.

#### 2. Wie läuft die Studie ab?

Wenn du zwischen 14-18 Jahren alt bist, freuen wir uns, wenn du bei der Studie mitmachst. Es werden ein paar Fragen zu deiner Person und zu deinem Erleben des Alltags in deiner Familie gestellt. Die Befragung dauert ca. 35 Minuten und kann bequem online von deinem Smartphone oder Computer aus erledigt werden.

#### 3. Was bringt deine Teilnahme an der Studie?

Durch die Teilnahme an dieser Studie hilfst du uns dabei, die menschliche Psyche grundsätzlich und die Entwicklung von Schamgefühl im Speziellen besser zu verstehen. Du

leistest damit einen wertvollen Beitrag für die Familienforschung im Bereich der Kinder- und Jugendpsychologie. Je besser wir die Entstehung von Emotionen verstehen, desto besser kann dieses Wissen dazu eingesetzt werden, Menschen zu helfen, welche unter psychischen Problemen leiden.

Im Anschluss an die Studie, kannst du dich auf der Homepage unseres Arbeitsbereiches (<https://kpkj-psy.univie.ac.at/elterninformation/>) über die Ergebnisse informieren. Auf Wunsch werden wir dir auch einen Bericht der Resultate zukommen lassen. Es handelt sich hierbei um keine individuellen Angaben, sondern ausschließlich anonymisierte Werte über die Gesamtgruppe. Es erfährt also abgesehen vom Forscherteam niemand, wer an der und Studie teilgenommen hat oder was du angegeben hast.

#### **4. Was ist, wenn es dir beim Beantworten der Fragen nicht gut geht?**

Falls es dir beim Beantworten unserer Fragen nicht gut geht, kannst du dich immer bei uns melden. Weiter unten findest du die E-Mail-Adressen, die du dann kontaktieren kannst. Für Notfälle haben wir am Ende dieses Informationsblatts einige Telefonnummern von Stellen angefügt, an die du dich wenden kannst, wenn du Unterstützung oder Hilfe benötigst.

#### **5. Wann kannst du die Studie früher beenden?**

Du kannst mit dem Beantworten der Fragen im Internet immer aufhören, wenn du nicht mehr willst oder kannst. Das hat keinerlei negative Folgen für dich.

#### **6. Was passiert mit Deinen Antworten?**

Niemand wird erfahren, welche Antworten du auf die Fragen gegeben hast, da deine Teilnahme „anonym“, also geheim ist! Wir können nicht erkennen, wer du bist und welche Antworten du gegeben hast. Das bedeutet auch, dass wir deine Antworten nicht mehr nachträglich löschen können.

Deine E-Mail-Adresse wird nicht gemeinsam mit deinen Daten gespeichert, zu keinem anderen Zweck verwendet oder weitergegeben und nach Ende der Studie gelöscht.

#### **7. Was gibt's für die Teilnahme?**

Nach Beendigung der ersten Befragung kannst du an einer Verlosung von 10 x 15 € Gutscheinen teilnehmen. Du hast dabei die Wahl, ob Du einen Gutschein für Armed Angels (Modemarke), Avocadostore (Onlinehandel) oder Amazon erhalten möchtest. Deine dabei angegebene E-Mail-Adresse wird nicht gemeinsam mit deinen Daten gespeichert, zu keinem anderen Zweck verwendet oder weitergegeben und nach der Verlosung gelöscht.

**Falls du weitere Fragen hast:**

Wenn du im Zusammenhang mit dieser Studie noch weitere Fragen hast, oder über die Ergebnisse informiert werden möchtest, schreibe uns bitte eine E-Mail an [emotionfamilie.kpkj@univie.ac.at](mailto:emotionfamilie.kpkj@univie.ac.at).

**Das Studienteam**

|                                |                  |
|--------------------------------|------------------|
| Rahel Lea van Eickels, BSc MSc | Studienleitung   |
| Univ.-Prof. Dr. Martina Zemp   | Projektleitung   |
| Max Tonne, BSc                 | Studienmitarbeit |
| Saskia Große, BSc              | Studienmitarbeit |

**Kontakt:**

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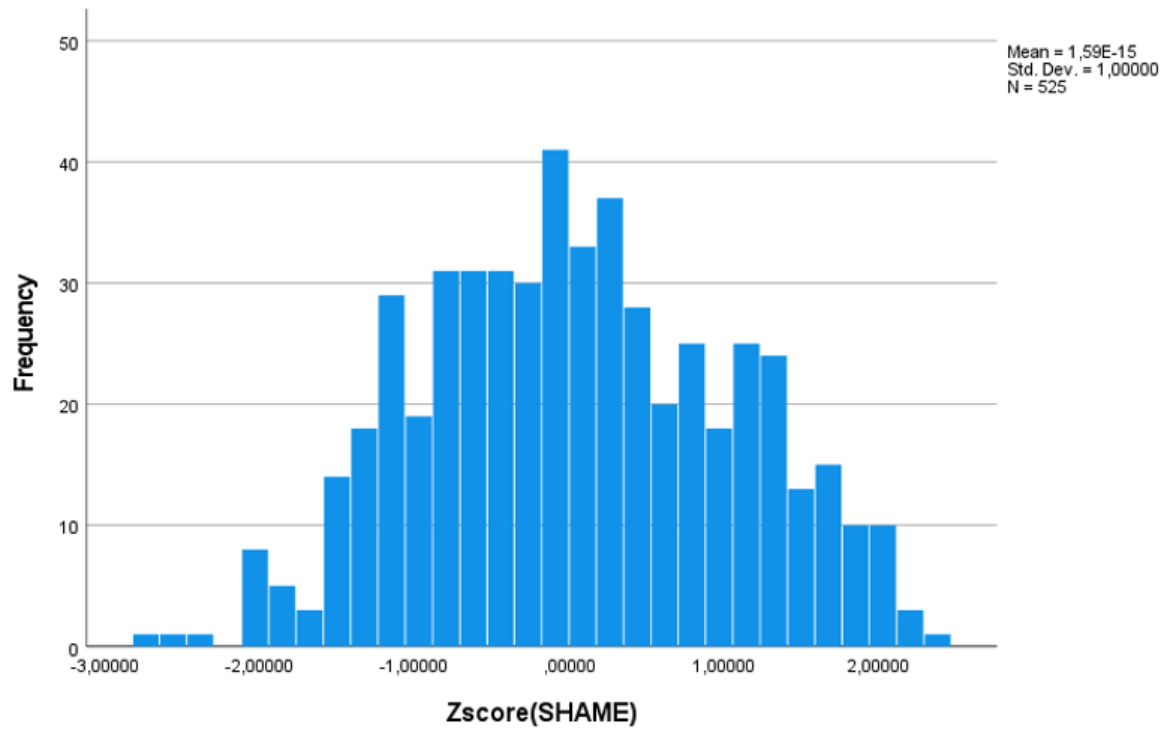
## Appendix F: Complete Overview of Questionnaires

### Appendix F Complete Overview of Questionnaires

| Author<br>(year)                                                            | Title                                                                                        | Variables                                                                              | Items | time<br>in<br>min. |
|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-------|--------------------|
| research<br>group                                                           | Demografische Angaben                                                                        | Soziodemografische<br>Angaben                                                          | 9     | 1                  |
| Olson<br>(2011)                                                             | FACES IV (Family Adaptability<br>and Cohesion Scale IV)                                      | Erfassung von Kohäsion,<br>Flexibilität                                                | 42    | 5                  |
| Tangney et<br>al. (1991);<br>Kronmüller<br>et al. (2008)                    | TESE-KJ (Tests zur Erfassung<br>selbstwertbezogener Emotionen<br>für Kinder und Jugendliche) | Erfassung von Scham in<br>verschiedenen<br>Alltagssituationen                          | 15    | 5                  |
| Goodman<br>(1997) <sup>a</sup> ;<br>Woerner, et<br>al., (2002) <sup>b</sup> | SDQ (Strength and Difficulties<br>Questionnaire)                                             | Emotionale und<br>Verhaltensprobleme                                                   | 25    | 5                  |
| Penza-<br>Clyve &<br>Zeman<br>(2002);<br>Nitkowski,<br>et al. (2018)        | EESC (Emotion Expression<br>Scale for Children)                                              | Erfassung zweier<br>Emotionsregulationsstrate-<br>gien (Expression und<br>Suppression) | 13    | 3                  |
| Allan und<br>Gilbert<br>(1995) <sup>c</sup>                                 | Social Comparison Scale                                                                      | Erfassung zur subjektiven<br>Wahrnehmung des<br>sozialen Ranges                        | 11    | 3                  |
| <b>TOTAL</b>                                                                |                                                                                              |                                                                                        | 115   | 22                 |

<sup>a</sup> Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry*, 38(5), 581-58. <https://doi.org/10.1111/j.1469-7610.1997.tb01545.x> <sup>b</sup> Woerner, W., Becker, A., Friedrich, C., Klasen, H., Goodman, R., & Rothenberger, A. (2002). Normierung und Evaluation der

deutschen Elternversion des Strengths and Difficulties Questionnaire (SDQ): Ergebnisse einer repräsentativen Felderhebung [Normative data and evaluation of the German parent-rated Strengths and Difficulties Questionnaire (SDQ): Results of a representative field study]. *Zeitschrift für Kinder- und Jugendpsychiatrie und Psychotherapie*, 30, 105–112. <http://dx.doi.org/10.1024//1422-4917.30.2.105> °Allan, S., & Gilbert, P. (1995). A social comparison scale: Psychometric properties and relationship to psychopathology. *Personality and Individual Differences*, 19, 293-299. [https://dx.doi.org/10.1016/0191-8869\(95\)00086-L](https://dx.doi.org/10.1016/0191-8869(95)00086-L)

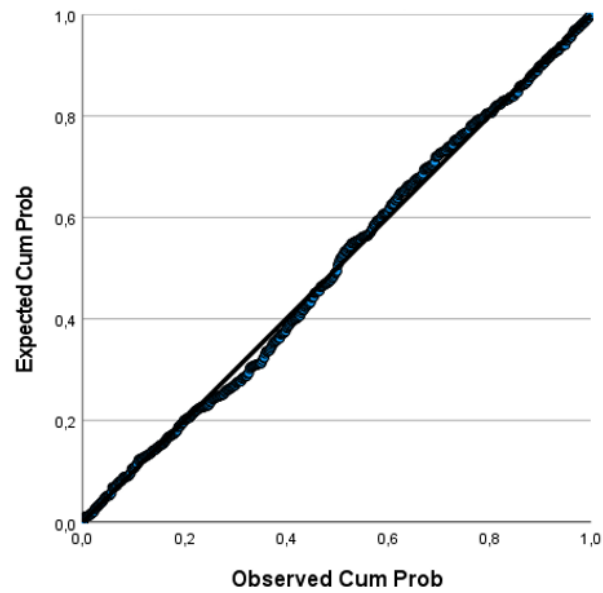
**Appendix G: Normality Assumption****Appendix G****Histogram of Shame-Proneness Indicating Normal Distribution**

## Appendix H: Normality Distribution of Residuals

### Appendix H

#### Normality P-P Plot of Regression Standardized Residuals

(Dependent Variable: ZscoreSHAME)



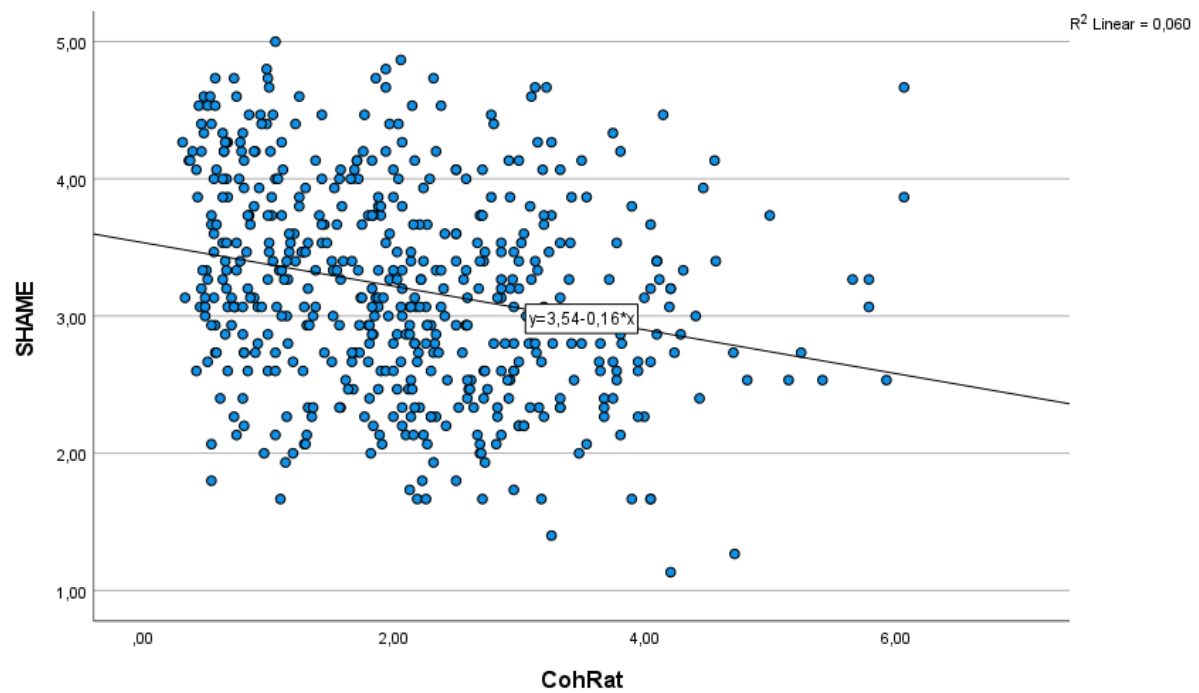
## Appendix I: Linearity Assumption

### Appendix I

#### Linearity of Relationship Between Shame-Proneness and Family Functioning

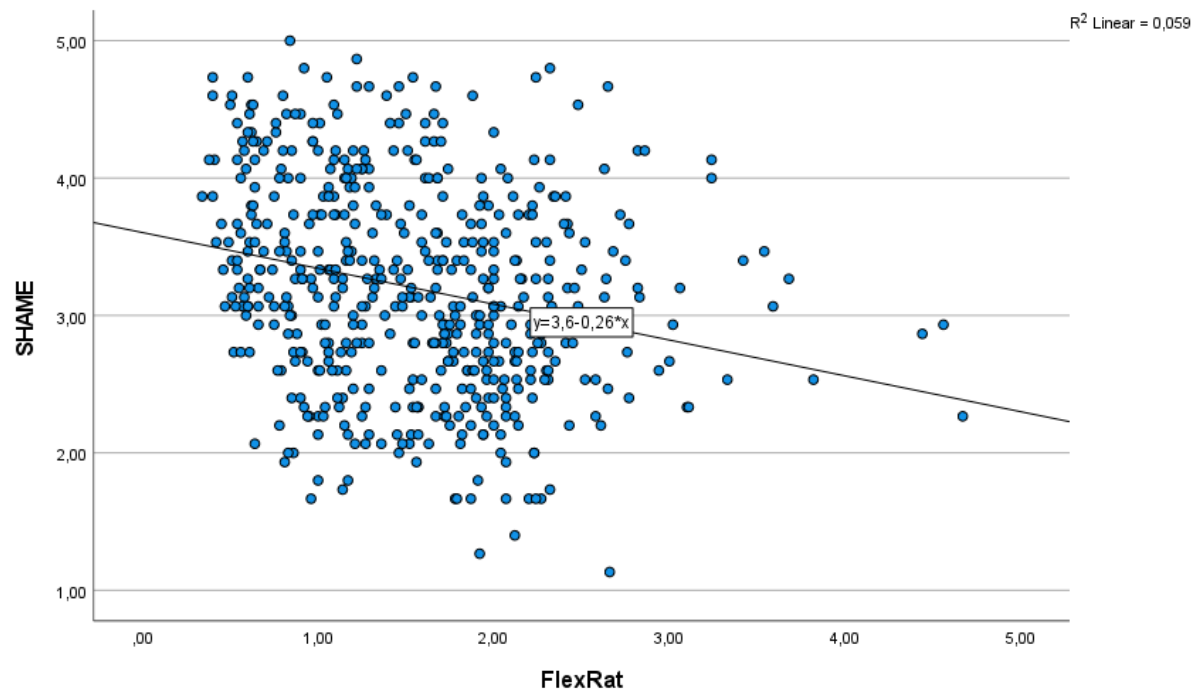
**Figure I1**

*Scatterplot Depicting the Linear Relationship Between Shame-Proneness and Family Cohesion*



**Figure I2**

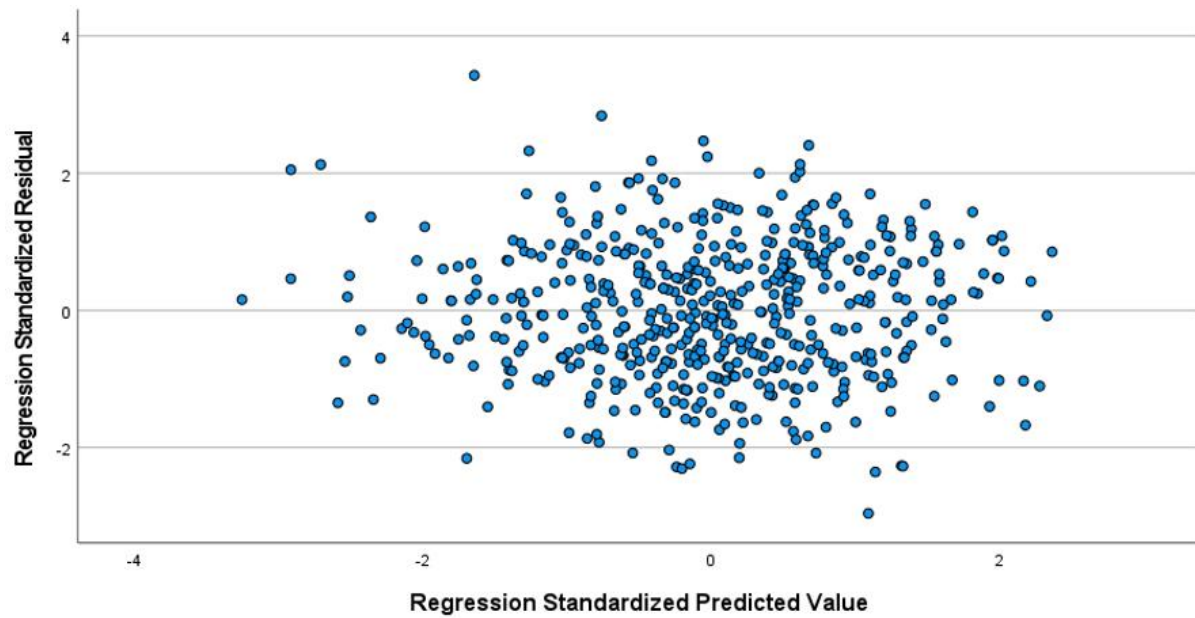
*Scatterplot Depicting the Linear Relationship Between Shame-Proneness and Family Flexibility*



## Appendix J: Homoskedasticity Assumption

### Appendix J

#### Scatterplot of the Residuals Indicating Heteroskedasticity (Dependent Variable: ZscoreSHAME)



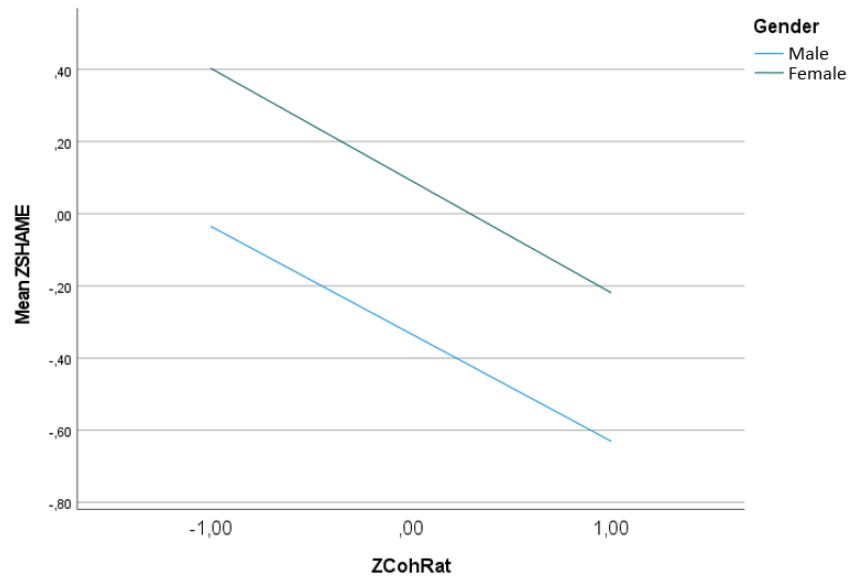
## Appendix K: Interaction Plots for Moderated Mediation Analyses

### Appendix K

#### Interaction Plots for Moderated Mediation Analyses

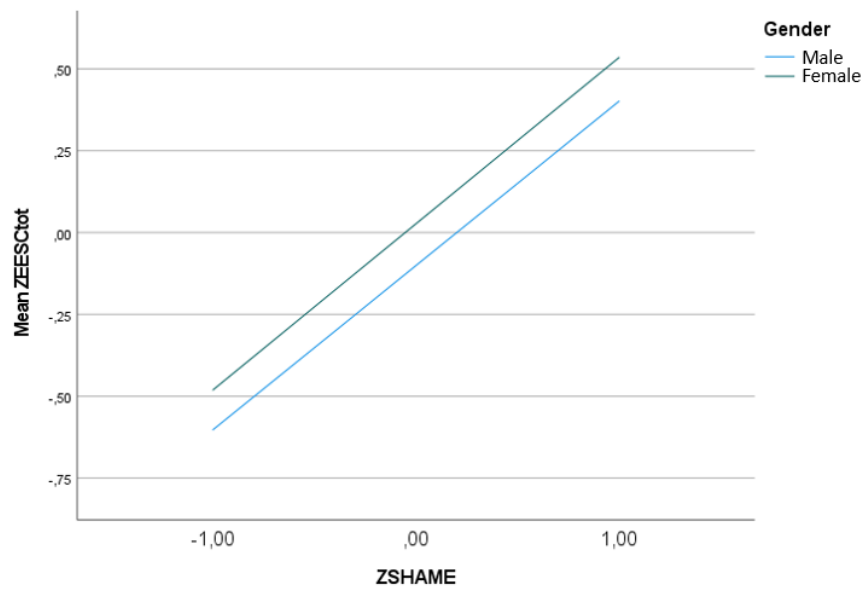
**Figure K1**

*Interaction Plot of the Direct Effect of Family Cohesion on Shame-Proneness by Gender*



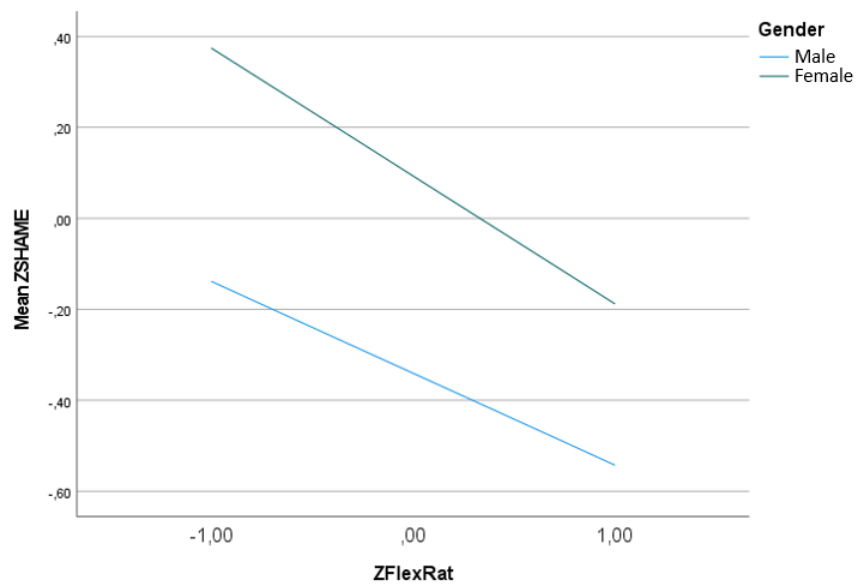
**Figure K2**

*Interaction Plot of the Direct Effect of Shame-Proneness on Emotion Suppression by Gender*  
(Family Cohesion as Predictor)



**Figure K3**

*Interaction Plot of the Direct Effect of Family Flexibility on Shame-Proneness by Gender*



**Figure K4**

*Interaction Plot of the Direct Effect of Shame-Proneness on Emotion Suppression by Gender*  
(Family Flexibility as Predictor)

