



Anonymous birth: Biographical knowledge and dyadic coping in adoptive mothers and fathers

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Abstract

Research on adoptive parents of anonymously born children is still scarce. Open issues are (1) examining how much biographical information is available to adoptive parents, (2) considering differences between adoptive mothers and fathers, and (3) understanding what affects their dyadic coping. Hence, this study set out to compare adoptive mothers' and fathers' mental health, attachment styles, dyadic coping, and biographical knowledge, and to identify predictors of dyadic coping. 62 mothers and 40 fathers (mean age: 46 years) raising an anonymously born adoptee answered online or paper-pencil versions of the *Brief Symptom Inventory*, *Vulnerable Attachment Style Questionnaire*, *Dyadic Coping Inventory*, *Child Behavior Checklist*, and a checklist of biographical data. Descriptive analyses showed that biographical knowledge was generally low in adoptive parents. More information was available on the birth mother than the birth father, with letters being the most common memorial. Furthermore, student t-tests revealed few differences: adoptive mothers reported to be more anxious and rated their ability to communicate stress and common dyadic coping as higher than did adoptive fathers. Finally, a hierarchical linear regression identified knowledge of more biographical data, parents' older age as well as child's younger age and higher psychopathology scores as predictors of better adoptive parents' dyadic coping. These findings highlight the difficult task of gathering biographical information whilst maintaining the birth mother's anonymity. They also stress the need of further research which may inform policies tailored to the specific needs of adoptive parents in the context of anonymous birth.

Keywords Anonymously adopted children and adolescent · Adoptees · Adoptive parents · Gender

Introduction

Adopting a child is considered a major event in a couples' life (Bird et al., 2002). In contrast to biological parents, adoptive parents are faced with challenges which are specific to the context of adoption and may exacerbate the demands of parenthood, as well as impede adjustment to the parental role (Calvo et al., 2015; Canzi et al., 2019b). In particular, stress

may stem from prior experiences of infertility (Daniluk & Hurtig-Mitchell, 2003), from the adoptee's possible history of early life adversities (e.g. Smith et al., 2018), the child's older age at adoption (e.g. Bird et al., 2002; Canzi et al., 2019c), prevailing developmental delays (Viana & Welsh, 2010), medical problems (e.g. Judge, 2003), and emotional and/or behavioral difficulties (e.g. Canzi et al., 2019c).

Additional strain may come from the fact that in some cases of adoption, determining the adoptee's history is difficult (Bird et al., 2002), and contact with birth families is impossible. Particularly, in the context of safe relinquishment (Orliss et al., 2019) or anonymous birth (Grylli et al., 2016) which allow the safe abandonment of infants without legal prosecution, biographical data is often unknown. Limited biographical knowledge and lack of birth family contact, however, are thought to bear unique challenges not only for the anonymously born child, but also for adoptive parents (e.g. Orliss et al., 2019). While some research exists on semi-open international adoptions (e.g. Hails et al., 2019), studies on closed adoption forms like anonymous birth are still scarce.

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Furthermore, there is a pending need to include the unique perspective of adoptive fathers to better understand an adoptive couple's functioning and coping with the stress of parenting (Grotevant et al., 2019).

Hence, the current paper introduces a cross-sectional study on adoptive mothers and fathers of anonymously born children. Following a comprehensive overview of the existing literature, the focus is put on examining adoptive parents' biographical knowledge of the adoptee's birth parents and on evaluating possible differences between adoptive mothers and fathers regarding their mental health, attachment styles and dyadic coping. Additionally, possible predictors of adoptive parents' dyadic coping are analyzed.

Biographical Knowledge in Anonymous Adoption

Currently, there is consensus that knowing about their birth families and maintaining some form of contact with them is beneficial to the adopted child (Von Korff & Grotevant, 2011). Biographical knowledge and contact are thought to promote not only an adoptive identity formation (Farr et al., 2018) and more positive family communication, but also to reduce the risk of externalizing problems (Grotevant et al., 2019). However, this type of openness is not always possible: Apart from international adoptions, where the availability of facts about the birth family may be limited (see Bird et al., 2002; Roberson, 2006; Smith et al., 2018), safe surrender programs like anonymous birth typically go along with even less background information and no birth family contact at all (see Orliiss et al., 2019).

These programs allow for placing the newborn in a baby hatch or for anonymously delivering the child in a hospital without risking legal penalty (Grylli et al., 2016; Orliiss et al., 2019). In contrast to baby hatches, where no information is typically conveyed, anonymously delivering the child in a hospital offers the opportunity to (at least) record medical facts related to the birth process. Also, the birth mother is encouraged by hospital and juvenile custody service staff to leave information about herself (e.g. in the form of a letter or photograph, Grylli et al., 2016). However, anecdotal evidence shows that biographical information left by the birth mother/the birth parents is limited, and establishment of contact with the birth family is impossible (see Galliez et al., 2019).

Overall, there is a lack of data on safely surrendered children (Orliiss et al., 2019), and even less is known about the impact of the type and extent of biographical knowledge on adoptive parents of anonymously born children. Studies on more open forms of adoption (international or domestic) provide some indication about the nature of this association: while they generally show that attitudes towards openness – be it biographical knowledge or communicative openness (Henze-Pedersen, 2019) – vary greatly across adoptive families (Grotevant et al., 2019), research has also found adoptive

mothers to report more negative or ambiguous feelings about birth mother contact than adoptive fathers (Farr et al., 2018). Consequently, further studies are needed to establish what and how much adoptive parents know about the biographies of their anonymously born children, and to determine whether this knowledge is associated with better parental coping.

Differences between Adoptive Mothers and Adoptive Fathers

Adoptive couples are faced with the task of promoting adequate adjustment and secure attachment of the adopted child, as well as to support the in understanding their adoptive identity (Hock & Mooradian, 2012; Roberson, 2006). Typically, adoptive mothers and fathers are both strongly engaged in these tasks (Canzi et al., 2019a), and past research emphasizes the specific contribution each parent makes to the child's upbringing and welfare: For instance, it has been shown that parents perceive the child's temperament and mental health differently (Felnhofer et al., 2019, 2020; Phares et al., 2005). Accordingly, it has been assumed that mothers and fathers may also perceive and handle parenting stress in a different manner. While some studies (e.g. Rosnati et al., 2013) support this, others (e.g. Ponnet et al., 2013) have failed to find a difference, leaving it an open issue in this research domain.

In the context of adoption, adoptive fathers seem to constitute a particular resource for the child's adjustment and development (Canzi et al., 2019a; Ferrari et al., 2015). Yet, most adoption studies focus only on adoptive mothers (Canzi et al., 2019b), strongly highlighting the necessity of considering both. It is expected that examining adoptive mothers and adoptive fathers separately, and comparing each of their perspectives will shed more light on the nature of how parents cope with the unique task of adopting an anonymously born child.

Adoptive Parents' Dyadic Coping

One crucial factor helping couples to deal with the demands of parenting – independent of whether they are the biological or adoptive parents –, is successful dyadic coping. Guided by the *Systemic Transactional Model* (STM, Bodenmann, 1995), an extension of Lazarus' and Folkman's (1984) individual-oriented stress model (Meuwly et al., 2012), dyadic coping describes a couple's ability to manage stress both on an individual as well as on a dyadic level (i.e. joint appraisal of, and response to stressors, Bodenmann et al., 2006). As such, it considers the interdependence of handling stress as a couple (Alves et al., 2020) and hence allows for a more in-depth analysis of relationship functioning. In the *Process Model of Parenting* (Belsky, 1984), stress is assumed to negatively impact parenting behaviors, with negative consequences not only for the parents' own well-being, but also for the child's

welfare (Bodenmann, 2008; Zemp et al., 2016). In the past, successful dyadic coping has been found to improve relationship satisfaction, marital quality (Falconier et al., 2015; Hilpert et al., 2016), dyadic adjustment and quality of life (Alves et al., 2020).

While a reasonable amount of data on adoptive parents' biographical knowledge of birth parents are available, dyadic coping in adoptive parents remains an understudied subject. To our knowledge, so far only two studies have examined dyadic coping in the context of adoption. Hock and Mooradian (2012) found that positive dyadic coping was linked to better co-parenting. Yet, this association was tested only in adoptive mothers, leaving open questions with regard to adoptive fathers. Canzi et al. (2019a), in turn, only interviewed prospective adoptive parents. Hence, their results are likely not comparable to those parents who are already in the midst of bringing up an adoptee. Furthermore, both studies only focus on a specific aspect of dyadic coping, not taking into account the range of factors which may possibly impact it (see Berg & Upchurch, 2007), such as contextual issues (e.g., socioeconomic status, biographical knowledge) and developmental factors (e.g., length of adoption).

Additionally, past studies (e.g. Canzi et al., 2019c) indicate that children's age at adoption and existing emotional and behavioral difficulties predict both adoptive mothers' and adoptive fathers' stress levels. Similarly, parental mental health has been discussed to significantly impact relationship quality and coping with stress (Viana & Welsh, 2010). Although a plethora of studies exists on birth parents' mental health and adjustment to parenthood, only few have examined these issues in adoptive parents (Anthony et al., 2019). Among these, one has found that adoptive parents with high depression levels prior to adoption later tend to exhibit more parenting stress (Goldberg & Smith, 2014). Finally, attachment style (Bowlby, 1973) may also impact parenting. Past research (Meuwly et al., 2012) suggests that those who perceive and receive more positive coping from their partner, recover faster from stress, and that this association is moderated by attachment style and gender: Hence, women with high attachment anxiety were less likely to benefit from dyadic coping regarding stress recovery. Generally, parents' own attachment experiences are thought to shape their behavior towards their child, with insecurely attached parents (i.e. dismissive, or ambivalent) exhibiting more difficulties in adequately responding to the children's needs (Caltabiano & Thorpe, 2007). Past adoption research has indeed found that successful caregiving may be dependent on the adoptive mother's secure attachment style (Kaniuk et al., 2004), yet, the scarcity of research on this subject – especially concerning adoptive fathers – precludes definite conclusions.

Objective

Raising an anonymously born child presents a unique challenge for adoptive parents. Due to the anonymity of safe relinquishment, background information is usually scarce, and contact with the birth family is not possible. While data for more open forms of adoption are available, research on safely surrendered children is insufficient (Orliss et al., 2019). Also, there is a pending need to expand the focus by including adoptive fathers when researching adoptive couples. Hence, this study set out to evaluate the extent of biographical knowledge in adoptive parents of anonymously born children. Furthermore, key factors of parental well-being were compared between adoptive mothers and fathers. Finally, possible predictors of dyadic coping were analyzed.

Methods

Procedure and Participants

This is a cross sectional study on mothers and fathers who had anonymously adopted a child. Participants were recruited via three private adoption services and six public adoption offices at the Austrian juvenile custody service, as well as via eight resident pediatricians in Vienna. Adoptive mothers and fathers with sufficient German language skills were eligible for participation. Written informed consent was obtained from adoptive parents prior to their participation. Both adoptive parents were invited to participate in this study; however, data were also included if only one parent took part. Upon agreeing to take part in the study, participants were free to choose whether they preferred to complete a paper-pencil, or an online version of the survey. If they preferred the paper-pencil questionnaires, they were sent via postal mail, including an addressed return envelope and the instruction not to include any personalized information (i.e., address) to ensure anonymization. For the online version, a link was provided which led to an online survey programmed via the open-source platform *SoSci Survey* (www.soscisurvey.de). Data were collected anonymously, and no sensitive information (i.e. IP-address) was stored. Participants did not receive any remuneration, and ethical approval was granted by the local institutional review board (#1354/2013).

Measures

The following demographic variables on the parents themselves, as well as on the adoptive child such as gender, current age, age at adoption, time since adoption, highest educational degree, marital status, years in relationship prior to adoption etc. were collected. In addition, participants completed the following questionnaires:

Biographical Knowledge Regarding Birth Circumstances and Biological Parents A questionnaire containing 40 checkboxes was constructed on the basis of past research (e.g., Wrobel & Grotevant, 2019) to assess whether adoptive parents had received any personal biographical information on the biological parents (i.e. age, country of origin, education, marital status, genetic diseases) or on the circumstances of the birth (i.e. birth date, place of birth, birth weight, type of delivery). Furthermore, adoptive parents were asked whether they had obtained any ‘memorials’ (i.e. photos, letters, statements for the abandoned child).

Parental Mental Health The *Brief Symptom Inventory* (BSI, Franke, 2000) was used to assess different aspects of parental psychopathology. This questionnaire consists of 53 items which are rated on a 5-point Likert scale (0 = not at all, 4 = very strongly). Item ratings are summed up to a total score representing global psychopathology, and nine subscales representing specific mental health (somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism). Higher values indicate higher levels of psychopathology. The internal consistency is excellent for the total score ($\alpha = .92$) and low to acceptable ($\alpha > .60$) for most subscales (see also Franke, 2000). Clinically relevant psychopathology scores were derived using gender and age specific T-scores, with T-scores ≥ 60 indicating clinically relevant mental health problems.

Attachment Style The *Vulnerable Attachment Style Questionnaire* (VASQ, Bifulco et al., 2003) assesses behaviors, emotions and attitudes related to attachment relationship styles using 22 items (rated on a 5-point Likert scale, 1 = strongly disagree, 5 = strongly agree) and results in two factors: the first factor (‘insecurity’) represents feelings and attitudes relating to discomfort with closeness to others (e.g. inability to trust, fear of being let down); the second factor (‘proximity seeking’) comprises other-dependence or approach behavior (e.g. relying on others to make decisions, being anxious when close people are away). Furthermore, items are aggregated to a total score with higher values indicating higher levels of vulnerable attachment. The internal consistency for this study was $\alpha = .82$ (insecurity) and $\alpha = .67$ (proximity seeking). The authors have proposed cut-off values of 30 for the insecurity subscale and 27 for the proximity-seeking subscale to define highly vulnerable attachment.

Dyadic Coping The *Dyadic Coping Inventory* (DCI, Bodenmann, 2008) was designed to measure perceived communication with the partner and dyadic coping in situations when one or both partners are stressed. This self-report questionnaire comprises 35 items which are rated on a 5-point

Likert scale (1 = very rarely, 5 = very often) and are summed up to ten subscores and a total score. Two subscales describe to which degree stress is communicated by oneself and by the partner. Two subscales assess supportive dyadic coping, which means that one partner provides problem- or emotion-focused support if needed. Two subscales assess the degree of delegated dyadic coping, which means that one partner takes over responsibilities to reduce the partner’s stress. Two subscales reflect the degree of negative dyadic coping (by oneself and the partner), which includes hostile, ambivalent, or superficial actions or words. Another subscale measures common dyadic coping, which means that both partners work together to handle stressful situations. The last subscale (‘evaluation of dyadic coping’) represents the satisfaction of the support one partner receives from the other partner. In addition to the subscales, a total score is computed. Coping levels are regarded average if this total score is above the cut-off of 111 (see Bodenmann et al., 2018). In this study, the internal consistency was $\alpha = .91$ for the total score and ranged between .61 and .86 for the subscales.

Adoptive Child’s Mental Health The *Child Behavior Checklist* (CBCL, 2 versions: < 4 years, Achenbach & Rescorla, 2000; ≥ 4 years, Achenbach, 1991) was used to assess adoptive mothers’ and fathers’ perceptions of their adoptive child’s mental health. This questionnaire encompasses a wide range of internalizing and externalizing behavioral problems (101 items in the version for younger children, 112 items in the version for older children) which are rated on a 3-point scale (0 = not true, 1 = somewhat or sometimes true, 2 = very true or very often true). For the purpose of this study, only the total problem score (sum of all items), representing the overall psychological burden, was used. Cronbach’s alpha of the total score was .96 (version for children < 4 years) and .88 (version for children, ≥ 4 years), respectively. We used T-scores based on gender and age specific norms, which allows for merging scores from the two CBCL versions. Higher scores indicate higher levels of adoptive children’s mental health problems. We additionally calculated z-scores to compare evaluations of adoptive mother and fathers.

Results

Data were analyzed using IBM SPSS Statistics 26 (SPSS, Inc. Chicago, USA). A significance level of $p < 0.05$ was used for all analyses. We calculated descriptive statistics (means, standard deviations, percentages) to describe the study population and biographical knowledge on biological parents (separately for adoptive parents’ gender). We used Student t-tests (for continuous variables, including effect sizes in terms of Cohen’s d) and χ^2 -tests (for categorical variables) to analyze differences between outcome variables obtained from

adoptive mothers and fathers. Furthermore, a hierarchical linear regression was performed to identify possible predictors of parental dyadic coping.

Sample

The participants' flow is shown in Fig. 1. Of 169 datasets received, 67 had to be excluded due to incomplete data ($n = 51$). To ensure homogeneity of the sample and thus, comparison of the data, reports from adoptive parents whose adoptive child had been placed in a baby hatch ($n = 16$) were excluded from the analysis. Finally, data from 62 adoptive mothers and 40 adoptive fathers of anonymously adopted children ($n = 102$; 86.3% online questionnaire, 13.7% paper-pencil form) were included in the analysis. The age ranged between 34 and 77 years for mothers ($M = 45.35$, $SD = 6.30$) and between 33 and 62 years for fathers ($M = 46.45$, $SD = 6.52$). Overall, 55.7% of adoptive mothers and 57.5% of adoptive fathers had a university degree, the majority of participants were married, or lived in partnership, and 56.5% of adoptive mothers and 62.5% of adoptive fathers lived in an urban area (see Table 1). There were no significant differences between adoptive mothers and adoptive fathers with regard to key demographic variables, only the percentage of participants with full-time employment was significantly higher in adoptive fathers (85.0%) compared to mothers (17.7%). The parents' age when adopting the child was 38 years (mothers), respectively 37 years (fathers) on average. The average time since adopting the child was 6.82 years ($SD = 3.27$) in adoptive mothers and 7.42 years ($SD = 4.02$) in adoptive fathers. Adoptive children's overall age ranged between 2 and 17 years ($M = 6.04$, $SD = 3.52$). Their mental health problems were rated within the norm of the general population of children (T-score $M = 50.28$, $SD = 12.18$) with no differences emerging between adoptive mothers' and fathers' evaluations (z-scores: mother: $M = 0.01$ ($SD = 0.95$), father: $M = -0.02$ ($SD = 1.08$); $t(100) = 0.136$, $p = .892$, $d = 0.03$).

Biographical Knowledge Regarding Birth Circumstances and Biological Parents

The biographical knowledge regarding birth circumstances, or the biological parents was generally low among adoptive parents (see Table 2). Of the 40 factors assessed, on average, adoptive mothers reported to know only of $M = 10.42$ ($SD = 4.91$) factors, while fathers knew of $M = 10.00$ ($SD = 4.35$) factors ($t(100) = 0.440$; $p = .661$, $d = 0.09$). On average, 93.5% of adoptive mothers and 95.0% of fathers were able to name at least some background information on birth circumstances, with no difference between parents. While the knowledge of any personal information on the biological mother was reported by 72.6% of adoptive mothers and 77.5% of adoptive fathers, personal information on the

biological father was scarce among adoptive parents (mothers: 17.7%, fathers: 22.5%). Memorials of the biological mother (such as photos, letters) were available to 69.4% of adoptive mothers and to 60.0% of adoptive fathers, with letters being by far the most commonly relayed memorial. Memorials of the biological father, in turn, were rarely available (1.6% and 5.0%).

Differences between Adoptive Mothers and Fathers

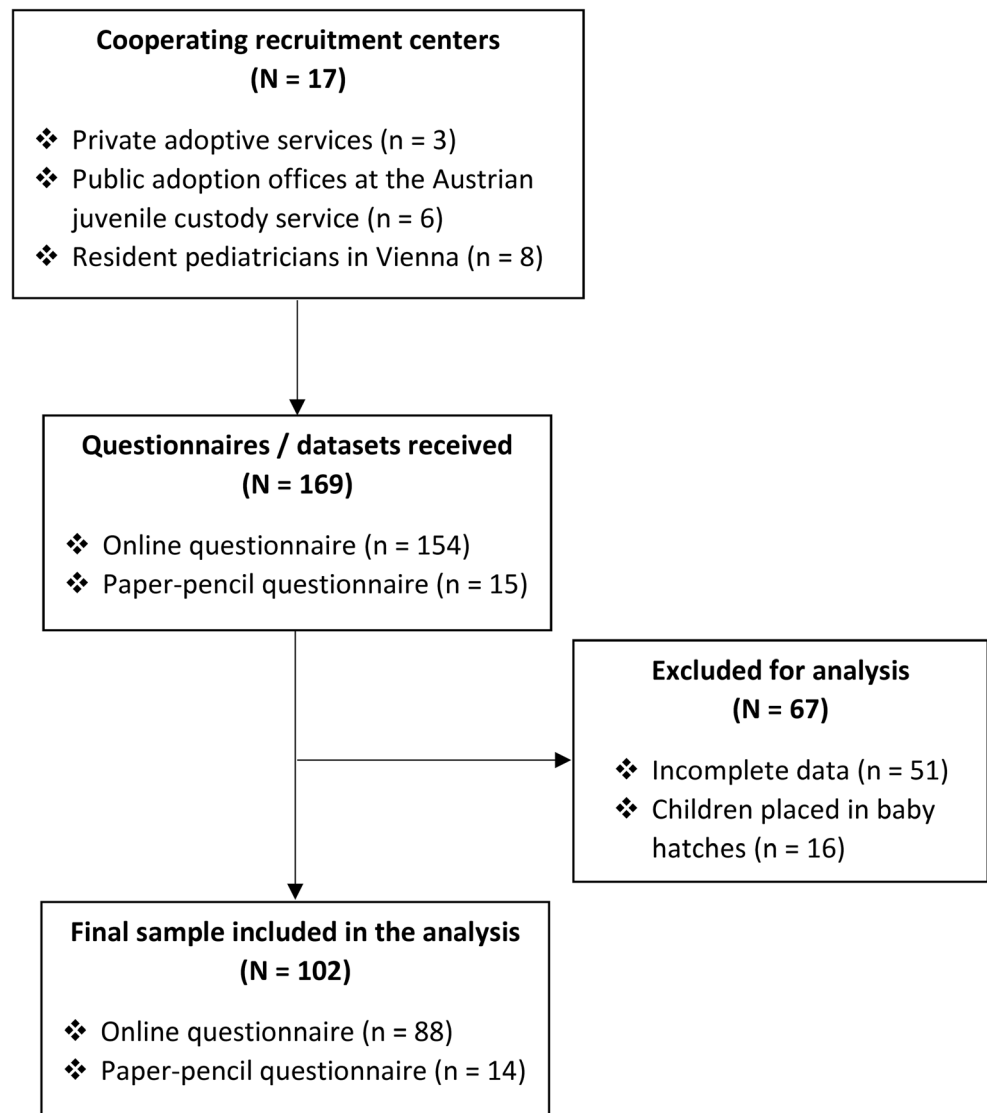
As assessed by the BSI total score, there was no significant difference ($t(97) = 0.767$, $p = .445$, $d = 0.16$) between adoptive mothers' ($M = 7.20$, $SD = 7.30$) and fathers' ($M = 6.05$, $SD = 8.26$) psychopathology. When considering the subscales, higher levels of anxiety were observed in adoptive mothers as compared to adoptive fathers ($t(100) = 2.330$, $p = .022$, $d = 0.48$), all other subscales were non-significant. With regard to dyadic coping, adoptive mothers and fathers showed similar total DCI scores ($t(96) = 1.328$, $p = .187$, $d = 0.27$). Yet, significantly higher levels of stress communicated by oneself ($t(97) = 3.273$, $p < .001$, $d = 0.67$) and common dyadic coping ($t(97) = 2.225$, $p = .028$, $d = 0.46$) were reported by adoptive mothers as compared to adoptive fathers. No significant parental differences were observed for the total VASQ score, or any of the subscales. See Table 3 for more details.

Additionally, we compared all total scores to the according clinical cut-offs to assess whether adoptive parents fell into the clinical problem score range. Regarding parental psychopathology, 3.3% of adoptive mothers 2.6% of adoptive fathers showed clinically relevant scores ($\chi^2(1) = 0.048$, $p = .827$). Regarding dyadic coping, below average scores were observed in 18.6% of adoptive mothers and 20.5% of adoptive fathers ($\chi^2(1) = 0.052$, $p = .819$). Vulnerable attachment in terms of insecurity was found in 15.3% of adoptive mothers and 10.3% of adoptive fathers ($\chi^2(1) = 0.510$, $p = .475$), while vulnerable proximity seeking scores were observed in 40.7% of adoptive mothers and 38.5% of adoptive fathers ($\chi^2(1) = 0.048$, $p = .826$).

Predictors of Dyadic Coping

Finally, we performed hierarchical linear regression models to analyze whether the total number of known background factors, the adoptive child's psychopathology, parental psychopathology and parental attachment style predicted parental dyadic coping when controlling for adoptive parents' and child's gender and age, as well as time since adoption. Model fit parameters and regression coefficients of the final models are shown in Table 4. A higher number of known background factors was significantly associated with better dyadic coping ($\beta = .251$, $p = .013$) when controlling for parent's and child's gender and age, and time since adoption. Furthermore, higher levels of a child's psychopathology was

Fig. 1 Participants' flow



significantly associated with worse dyadic coping ($\beta = -334$, $p = .002$). There was a tendency for a similar relationship between parental psychopathology and dyadic coping, but this association did not reach statistical significance ($p = .067$). Moreover, the adoptive parents' and the adoptee's age significantly predicted dyadic coping. The parents' gender was not significantly associated with dyadic coping when controlling for the other predictors in the model. All sets of predictors in the model explained 34.6% of the variance in dyadic coping.

Discussion

Given the insufficient data on anonymously born children, and in view of the particularities surrounding this type of adoption (i.e., limited biographical information), the current study had the goal of exploring the field. The main objectives were to examine how much biographical information is

available to adoptive parents, to evaluate differences between adoptive mothers and adoptive fathers, and to better understand what affects their dyadic coping.

Biographical Knowledge

Generally, biographical knowledge was low in our adoptive parent sample. On average, adoptive mothers and adoptive fathers were able to name only 10 out of 40 biographical factors. Among these, there was more information available on the birth mother than on the birth father. Particularly, demographic data, such as the birth mother's age and education were more accessible to adoptive parents than specifics of the birth mother's personal details (e.g. talents), or medical histories (e.g. genetic diseases). In comparison, no information at all was available on the biological father's health.

The lack of knowledge about the birth parents' health and/or pre-existing illnesses is particularly relevant, as past studies

Table 1 Sample characteristics of adoptive mothers, adoptive fathers, and adopted children

	Adoptive mothers (N=62)	Adoptive fathers (N=40)	Group difference	
			Test statistic (df)	p
Age (mean, SD)	45.35 (6.30)	46.45 (6.52)	$t(98)=0.829$	.402
Highest educational degree				
University degree (N, %)	34 (55.7%)	23 (57.5%)	$\chi^2(1)=0.031$	.861
Below university degree (N, %)	27 (44.3%)	17 (42.5%)		
Missing (N, %)	1			
Marital status				
Married or living in partnership (N, %)	62 (100%)	39 (97.5%)	$\chi^2(1)=1.565$	.211
Divorced or widowed (N, %)	0 (0.0%)	1 (2.5%)		
Age at adoption (mean, SD)	38.39 (5.50)	36.91 (6.89)	$t(93)=1.148$	.254
Years in relationship prior to adoption	13.46 (5.14)	12.56 (4.79)	$t(88)=0.810$	.420
Time since adoption in years (mean, SD)	6.82 (3.27)	7.42 (4.02)	$t(92)=0.788$	.433
Employment status			$\chi^2(2)=44.853$	< .001
Full employment (N, %)	11 (17.7%)	34 (85.0%)		
Part-time employment (N, %)	41 (66.1%)	4 (10.0%)		
Other (N, %)	10 (16.1%)	2 (5.0%)		
Size of residence ^a			$\chi^2(1)=0.367$	.545
Urban (N, %)	35 (56.5%)	25 (62.5%)		
Rural (N, %)	27 (43.5%)	15 (37.5%)		
Gender - adoptive child			$\chi^2(1)=<0.001$	.987
Female (N, %)	34 (54.8%)	22 (55.0%)		
Male (N, %)	28 (45.2%)	18 (45.0%)		
Age – adoptive child (mean, SD)	5.76 (3.38)	6.48 (3.73)	$t(100)=1.004$	.318
CBCL total problems				
T-score (mean, SD)	50.18 (12.16)	50.45 (12.36)	$t(100)=0.110$	.913
z-score (mean, SD)	0.01 (0.95)	-0.02 (1.06)	$t(100)=0.136$	.892

Urban: > 10.000 inhabitants, Rural: ≤ 10.000 inhabitants

CBCL, Child Behavior Checklist

have shown that adoptees most frequently seek to learn more about their birth parents' medical and health histories (Wrobel & Grotevant, 2019). According to the *Adoption Curiosity Pathway* (ACP, Wrobel & Dillon, 2009) this need becomes particularly pressing with time, peaking during transition into adulthood (see Skinner-Drawz et al., 2011). Apart from the individual's curiosity to learn more about one's biography, research on international adoption indicates that unknown medical histories are associated with inherent risk factors to the child's development and welfare (Orliss et al., 2019). As such, inaccessible medical records may also pose a stressor to adoptive parents.

Generally, extant literature suggests that adoptive parents seek ways of making biographical information available to their adoptive child, and that they themselves are curious about the child's past (Shaw, 2011). Here, anonymous birth – in contrast to placement in a baby hatch – provides the advantage that the child's birth (e.g. type of delivery) may

be documented by hospital staff (Galliez et al., 2019; Grylli et al., 2016). This fact is also reflected in the current findings: The majority of adoptive mothers and fathers reported to possess such information. In addition, anonymously delivering women are encouraged to attend ante-natal care as early as possible (Grylli et al., 2016). This not only ensures adequate medical care, but also allows recording pregnancy related health issues. The present findings suggests that there may be room for improvement in informing and motivating anonymously delivering women to make use of this offer.

In addition to medical histories, finding out more about the birth parents' reason for giving the child up for adoption, or learning about the birth parent's personality and how she or he is doing, may also drive adoptees' and adoptive parents' curiosity (Wrobel & Dillon, 2009). In our sample, about 70% of adoptive parents reported to possess a memorial of the biological mothers, the most common form being a letter or a statement of reasons for leaving the child behind. However, only

Table 2 Biographical knowledge regarding birth circumstances and biological parents

	Adoptive mothers (N=62)	Adoptive fathers (N=40)	Group difference	
			Test statistic (df)	<i>p</i>
All background factors (sum) (Mean, SD)	10.42 (4.91)	10.00 (4.35)	$t(100)=0.440$	.661
Birth circumstances (sum) (Mean, SD)	5.76 (2.12)	5.50 (2.03)	$t(100)=0.661$	.542
Birth circumstances (any) (%)	93.5%	95.0%	$\chi^2(1)=0.093$	.761
Place of birth of adoptive child (%)	91.9%	92.5%		
Birth date of adoptive child (%)	90.3%	90.0%		
Birth weight of adoptive child (%)	88.7%	85.0%		
Type of delivery (%)	85.5%	85.0%		
Medical newborn screening (%)	80.6%	72.5%		
Duration of inpatients stay after delivery (%)	58.1%	60.0%		
Place of residence before adoption (%)	43.5%	35.0%		
Medical care during pregnancy (%)	16.1%	15.0%		
Time when pregnancy detected (%)	12.9%	7.5%		
Medical complications during pregnancy (%)	8.1%	7.5%		
Personal info of biol. Mother (sum) (Mean, SD)	2.81 (2.86)	2.43 (2.07)	$t(100)=0.728$	.468
Personal info of biol. Mother (any) (%)	72.6%	77.5%	$\chi^2(1)=0.310$	.578
Age (%)	56.5%	50.0%		
Country of origin (%)	41.9%	40.0%		
Physical Appearance (%)	37.1%	32.5%		
Citizenship (%)	32.3%	30.0%		
Education / Occupation (%)	29.0%	32.5%		
Marital status (%)	27.4%	20.0%		
Personal preferences (%)	17.7%	12.5%		
Medical information (%)	16.1%	10.0%		
Personal talents (%)	8.1%	5.0%		
Religious belief (%)	6.5%	7.5%		
Genetic diseases (%)	4.8%	2.5%		
Genetic link between biol. Parents (%)	3.2%	0.0%		
Personal info of biol. Father (sum) (mean, SD)	0.47 (1.14)	0.50 (1.09)	$t(100)=0.142$	.887
Personal info of biol. Father (any) (%)	17.7%	22.5%	$\chi^2(1)=0.349$	.555
Country of origin (%)	11.3%	12.5%		
Marital status (%)	8.1%	10.0%		
Age (%)	8.1%	5.0%		
Education / Occupation (%)	8.1%	5.0%		
Physical Appearance (%)	4.8%	5.0%		
Citizenship (%)	3.2%	5.0%		
Medical information (%)	1.6%	2.5%		
Personal talents (%)	1.6%	2.5%		
Genetic link between biol. Parents (%)	0.0%	2.5%		
Religious belief (%)	0.0%	0.0%		
Genetic diseases (%)	0.0%	0.0%		
Personal preferences (%)	0.0%	0.0%		
Memorials of biol. Mother (sum) (Mean, SD)	0.95 (0.82)	0.90 (0.93)	$t(100)=0.295$	.769
Memorials of biol. Mother (any) (%)	69.4%	60.0%	$\chi^2(1)=0.944$	.331
Letter (%)	35.5%	35.0%		
Photos (%)	9.7%	10.0%		
Statement reasons for leaving child behind (%)	50.0%	45.0%		
Memorials of biol. Father (sum) (Mean, SD)	0.02 (0.13)	0.05 (0.22)	$t(100)=0.983$	.328

Table 2 (continued)

	Adoptive mothers (N = 62)	Adoptive fathers (N = 40)	Group difference	
			Test statistic (df)	<i>p</i>
Memorials of biol. Father (any) (%)	1.6%	5.0%	$\chi^2(1)=0.977$	.323
Statement reasons for leaving child behind (%)	1.6%	2.5%		
Letter (%)	0.0%	2.5%		
Photos (%)	0.0%	0.0%		

Biol., Biological

about 50% of women left information on why she was not able to raise the child (Bonnet, 1999). This emphasizes the need to rework the processes surrounding anonymous delivery. Medical staff should strive to gather as much medical information as possible whilst maintaining the birth mother's anonymity.

Differences between Adoptive Mothers and Fathers

Only few differences emerged between adoptive parents in the present study: Adoptive mothers reported to be more anxious than adoptive fathers. Also, mothers rated their ability to communicate stress as better, and indicated the couple's capacity to conjointly cope with stress as higher than did adoptive fathers.

Higher levels of anxiety in adoptive mothers correspond with the consistently higher prevalence of anxiety disorders among women (McLean et al., 2011). However, comparisons of current and past results are complicated by the fact that only few studies focus on anxiety in adoptive parents; and those that do so, fail to analyze adoptive mothers and fathers separately (Anthony et al., 2019). One of the few existing studies (Mott et al., 2011) examined adoptive mothers and found their anxiety levels to be lower than those of birth mothers. This may be due to the fact that adoptive mothers – contrary to birth mothers – do not go through hormonal changes and the experience of delivery. Instead, however, they are confronted with other stressors such as infertility (Daniluk & Hurtig-Mitchell, 2003), the application for adoption, undergoing agency evaluations, as well as the fear that their application may be contested, or that the birth parents may reclaim the child (Anthony et al., 2019). As such, the role of anxiety in adoptive mothers – particularly in comparison to adoptive fathers – warrants further investigation.

Interestingly, while adoptive mothers reported more anxiety in our study, they also rated their ability to communicate stress and their common dyadic coping as higher than did adoptive fathers. Hence, women raising an anonymously born child reported to communicate their stress more often to their partner and to more frequently ask for their according support

than did adoptive fathers. Additionally, they assessed their conjoint coping strategies as more favorable than did adoptive fathers, i.e., stating more often that they – as a couple – engaged in mutual problem solving and emotion sharing.

Given that for women, in particular, both their own dyadic coping and that of their partner has been found to impact marital quality over time (Bodenmann et al., 2006), high coping scores for both the relationship dimension and themselves may be regarded a positive sign. Also, our findings support prior research on both non-adoptive couples (Bodenmann et al., 2006) and adoptive couples (Canzi et al., 2019a), which shows that the partner's coping is more important for women than vice versa. The current study for the first time not only investigated dyadic coping in parents who already raised an adopted child (in contrast to Canzi et al., 2019a, who examined prospective adoptive parents), but also made an effort to account for gender differences (Hock & Mooradian, 2012 only assessed adoptive mothers). As such, it sheds more light on a hitherto under-investigated subject.

Predictors of Dyadic Coping

In the current study, adoptees' psychopathology and age, as well as adoptive parents' age and biographical knowledge all emerged as significant predictors of adoptive parents' dyadic coping. Additionally, parents' mental health barely failed to reach significance, indicating a trend that worse parental mental health is associated with worse dyadic coping. Past data show an impact of parental psychopathologies on relationship quality and stress coping (Viana & Welsh, 2010), notably in the context of raising an adoptee (Goldberg & Smith, 2014). Yet, further research is needed to confirm this tendency.

The strongest predictor of parental dyadic coping was child psychopathology. The more externalizing and internalizing problems adoptive parents identified in their adoptive child, the less positive dyadic coping abilities they reported for themselves. It is known that health problems in children affect parents' stress levels and parental coping – not only in biological, but also in adoptive parents (Canzi et al., 2019c; Smith et al., 2018; Viana & Welsh, 2010). While this seems to be

Table 3 Difference between adoptive mothers and adoptive fathers regarding mental health, dyadic coping and attachment styles

Outcome variable	Adoptive mothers		Adoptive fathers		Test statistic		Effect size	
	Mean	SD	Mean	SD	<i>t</i> (df)	<i>p</i>	Cohen's <i>d</i>	95% CI
BSI – Total score	7.20	7.30	6.05	7.26	0.767 (97)	.445	0.16	[−0.25; 0.56]
Somatization	0.87	1.21	0.51	1.00	1.517 (97)	.132	0.31	[−0.09; 0.72]
Obsessive-Compulsive	1.32	1.80	1.03	1.55	0.830 (97)	.409	0.17	[−0.23; 0.57]
Interpersonal Sensitivity	0.68	0.95	0.51	0.89	0.898 (97)	.372	0.19	[−0.22; 0.59]
Depression	0.42	0.79	0.44	1.07	−0.103 (97)	.918	−0.02	[−0.42; 0.38]
Anxiety	0.87	1.16	0.39	0.71	2.330 (97)	.022	0.48	[0.07; 0.89]
Hostility	1.133	1.37	1.00	1.15	.503 (97)	.616	0.10	[−0.30; 0.51]
Phobic Anxiety	0.22	0.61	0.41	0.72	−1.437 (97)	.154	−0.30	[−0.70; 0.11]
Paranoid Ideation	0.90	1.40	0.77	1.27	0.472 (97)	.638	0.10	[−0.31; 0.50]
Psychoticism	0.13	0.39	0.33	1.06	−1.333 (97)	.186	−0.27	[−0.68; 0.13]
Total DCI Score	128.51	21.55	122.90	18.69	1.328 (96)	.187	0.27	[−0.13; 0.68]
Stress communicated by oneself	14.92	2.593	12.85	3.70	3.273 (97)	<.001	0.67	[0.26; 1.09]
Supportive dyadic coping by oneself	19.27	3.463	17.97	3.65	1.775 (96)	.079	0.37	[−0.04; 0.77]
Delegated dyadic coping by oneself	7.63	1.790	7.87	1.32	−0.732 (96)	.466	−0.15	[−0.56; 0.25]
Negative dyadic coping by oneself	17.29	2.901	16.51	2.99	1.279 (96)	.204	0.26	[−0.14; 0.67]
Stress communication of the partner	13.03	3.667	14.10	2.89	−1.531 (96)	.129	−0.32	[−0.72; 0.09]
Supportive dyadic coping of the partner	18.90	4.784	18.05	3.98	0.916 (96)	.362	0.19	[−0.22; 0.59]
Delegated dyadic coping of the partner	7.48	1.951	6.85	2.20	1.485 (96)	.141	0.31	[−0.10; 0.71]
Negative dyadic coping by the partner	16.88	3.691	16.97	2.69	−0.135 (96)	.893	−0.03	[−0.43; 0.38]
Common dyadic coping	17.00	3.849	15.26	3.75	2.225 (97)	.028	0.46	[0.05; 0.87]
Evaluation of dyadic coping	7.97	1.983	7.77	1.60	0.521 (97)	.603	0.11	[−0.30; 0.51]
Total VASQ score	48.90	9.43	48.13	8.33	0.414 (96)	.680	0.09	[−0.32; 0.49]
Insecurity	23.07	5.49	23.36	5.72	−0.253 (96)	.801	−0.05	[−0.46; 0.35]
Proximity Seeking	25.83	5.70	24.77	5.01	0.945 (96)	.347	0.20	[−0.21; 0.60]

Statistically significant differences ($p < .05$) are printed in bold

BSI, Brief Symptom Inventory; DCI, Dyadic Coping Inventory; VASQ, Vulnerable Attachment Style Questionnaire

true also for our sample, it must be noted that, in general, children's psychopathology scores were largely rated as clinically inconspicuous in our study (mean T-score around 50). Yet, a restriction is that the effects between parental dyadic coping and child psychopathology are likely bidirectional, with recent findings suggesting an influence of negative dyadic coping on internalizing and externalizing symptoms in children (Zemp et al., 2016). Longitudinal designs are needed to take this interdependence of child and parental well-being into account, and adoption services are called upon to implement interventions supporting not only adoptive parents but the whole family system (Hock & Mooradian, 2012).

In addition to child psychopathology, older parents' age and younger adoptees' age were both associated with better dyadic coping. Consistent with prior research on non-adoptive couples (Acquati & Kayser, 2019), older adoptive parents reported more successful dyadic coping than younger ones in our study. In general, coping abilities tend to increase with age, and vulnerability to distress is documented to decrease

with age (e.g. Revenson, 2003). Additional determinants of a couple's dyadic coping are contextual factors like finances and lifestyle (Acquati & Kayser, 2019). Adoptive parents represent a particular selection of couples, as they a priori tend to be older, financially secure (Calvo et al., 2015; Smith et al., 2018) and well-educated. Also, they have often been in a relationship longer and are screened beforehand regarding their fitness to become parents (Calvo et al., 2015; Lee et al., 2018; Roberson, 2006). Thus, they are likely to have a lengthy period of transitioning into parenthood. All of the above may act as protective factors with regard to the couple's relationship, as well as their ability to cope with parental demands.

With regard to the adoptive child's age as a predictor of dyadic coping, there are to our knowledge no definite accounts in the extant literature. Both are assumed to vary over time (e.g., Neece et al., 2012), as development-specific challenges such as the need to find out more about their biographies (see Skinner-Drawz et al., 2011; Wrobel & Dillon, 2009) are likely to exert an age-dependent influence on parental coping.

Table 4 Hierarchical linear regression analysis predicting parental dyadic coping

Outcome: Parental dyadic coping (DCI total score)				
Model summary	R	R ²	ΔR ²	Δp
Model 1 ^a	.241	.058	.058	.396
Model 2 ^b	.345	.119	.061	.018
Model 3 ^c	.543	.295	.177	<.001
Model 4 ^d	.588	.346	.051	.048
Regression coefficients (model 3)	b (SE)	Beta	<i>t</i>	<i>p</i>
Intercept	193.157 (22.50)		8.583	<.001
Gender (parent) ^e	5.851 (3.96)	.134	1.478	.143
Age (parent)	−1.127 (0.42)	−.319	−2.685	.009
Gender (child) ^e	−1.404 (3.85)	−.033	−0.365	.716
Age (child)	2.702 (1.23)	.457	2.205	.030
Time since adoption	−0.983 (1.23)	−.168	−0.798	.427
Number of known background factors	1.143 (0.45)	.251	2.531	.013
Adoptive child's psychopathology	−0.592 (0.18)	−.334	−3.228	.002
Parental psychopathology	−0.603 (0.33)	−.200	−1.855	.067
Parental attachment styles	−0.216 (0.23)	−.093	−0.931	.355

Statistically significant results ($p < .05$) are printed in bold

^a Predictors included: Gender, age (adoptive parents and children), time since adoption;

^b Predictors included: Gender, age (adoptive parents and children), time since adoption, number of known background factors;

^c Predictors included: Gender, age (adoptive parents and children), time since adoption, number of known background factors, child's psychopathology (CBCL total score);

^d Predictors included: Gender, age (adoptive parents and children), time since adoption, number of known background factors, child's psychopathology (CBCL total score), parental psychopathology (BSI total score), Parental attachment style (VASQ total score)

^e 1 = male, 2 = female

Finally, biographical knowledge emerged as a predictor of dyadic coping. In other words, more biographical knowledge – represented by the higher number of mentioned facts – was significantly associated with better dyadic coping in adoptive couples. As mentioned above, adoptive parents have a vested interest in learning more about their child's past – to satisfy their own curiosity (Shaw, 2011) and to support their child in developing an adoptive identity (Farr et al., 2018). Not knowing about the adoptee's history may constitute a stressor (see Bird et al., 2002), and the ability to fill these gaps in knowledge may in turn reduce stress in adoptive couples. Accordingly, openness in adoption has been shown to positively impact family communication and stress (Grotevant et al., 2019). This study – to our knowledge – is the first to show that this is also true for adoptive parents' dyadic coping.

Limitations and Conclusion

A strength of the present study lies in the fact that it considers a previously understudied sample, i.e., adoptive mothers and adoptive fathers of an anonymously born child. It focuses on key variables which are known to shape parental ability to cope with stress, and it accounts for possible mother-father-

differences. Apart from these assets, however, there are also several limitations to this study.

Most importantly, a cross-sectional design is not fit to capture changes over time. Stressors are expected to vary over time and hence, longitudinal studies are needed to better reflect the processual nature of adoptive parenting. Similarly, causal relationships cannot be determined based on a single assessment. Also, claims about influences of pre-existing mental health issues or pre-adoption attachment styles are precluded with the current design. In a similar vein, this study relied on independent samples. While these are valid for assessing differences between mothers and fathers, dyadic analyses would provide more insight into couple dynamics, particularly with regard to dyadic coping (Bodenmann et al., 2006). Also, they would allow for a more comprehensive analysis of parental accounts of child psychopathology. While in our study reports did not differ, past research (see meta-analyses of Achenbach et al., 1987, and Duhig et al., 2000) unanimously points at only moderate agreement between mothers and fathers. Additionally, self-report measures pose several limitations: Using the same source for reporting (e.g. on child psychopathology and one's own mental health) tends to inflate associations (Hails et al., 2019), and socially

desirable responses, poor self-reflection and misunderstanding of items may limit generalizability. Correspondingly, mailing questionnaires or using online tools limits the ability to determine who participated. Reverting to different sources and behavioral measures could counteract this problem in future research. Also, with a mean age of 6 years, the current sample of adoptees was quite young. This fact precludes conclusions about older adoptees (e.g. adolescents or those at the verge of transition into adulthood) who may face other challenges than younger adoptees. Finally, adding a parallelized control group of biological parents – instead of comparing scores to the norm population – would undoubtedly strengthen the study's validity (see Caballo et al., 2001).

Despite these limitations, the current results are both valuable in terms of guiding future research endeavors, and for improving social service policies tailored to the particularities of safe surrender programs like anonymous birth. Given the importance of biographical knowledge for both, adoptive children and adoptive parents, policies should include solutions for how to reach women who wish to deliver anonymously. Above all, knowledge on the possibility to anonymously attend pre-natal care and awareness of the significance of leaving biographical data or personal memoirs (letter, photographs) should be promoted. Similarly, medical staff should be trained in how to sensibly motivate anonymously delivering women to leave personal information whilst giving them the security of remaining anonymous. Furthermore, this underlines the need to strive for replacing baby hatches by anonymous birth practices, as the latter offer a greater chance of collecting biographical information. This is also crucial given that there are many countries which only have the option of placing a newborn in a baby hatch and do not promote anonymous birth (see <http://anonymegeburt.at/en/anogeb-ur-map/>).

To be able to develop and provide approaches which are tailored to the needs of affected women, research should strive to include these women in corresponding studies. At this point, there is only very limited data on anonymously delivering women and there is a definite lack of knowledge on their reasons for choosing anonymous birth and safe relinquishment (Bonnet, 1993).

The present study paved the ground for further research on the specific roles and needs of adoptive mothers and fathers. Particularly, the increased level of anxiety in adoptive mothers found in the current sample warrants further study with regard to its causes. Specific predictors of parenting fears in the context of adoption (e.g. the fear that the child may be reclaimed) should be evaluated separately to determine their impact. Also, these fears should be addressed by adoption services and prospective adoptive parents should be educated about the unique challenges linked to anonymous birth. Finally, the reciprocity regarding parents' and children's well-being warrants interventions which target the whole family system.

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Declarations

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

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