

MESTRADO EM PSICOLOGIA
PSICOLOGIA

Perceived Stress in Donor-Conceived People: the role of Disclosure Pathway and Identity

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M

2026



Universidade do Porto
Faculdade de Psicologia e de Ciências da Educação

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Identity**

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Junho 2026

Dissertação apresentada no Mestrado em Psicologia da Educação e do Desenvolvimento Humano, Faculdade de Psicologia e de Ciências da Educação da Universidade do Porto, orientada pela Professora Doutora *Mariana Veloso Martins* (FPCEUP).

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Agradecimentos

Dedico esta dissertação ao meu avô Fernando Pinto da Silva Ferreira.

Obrigado BU

Agradeço também aos meus pais, por me terem dado sempre todas as condições, ferramentas e liberdade para fazer aquilo de que mais gosto.

Resumo

A concepção por doação levanta questões psicológicas e relacionais associadas à revelação das origens, ao acesso à informação genética e à integração desta experiência na identidade. Embora a literatura tenha enfatizado a importância da revelação precoce e conduzida pelos pais, os testes genéticos diretos ao consumidor tornaram mais complexas as formas através das quais pessoas concebidas por doação (PCD) acedem à informação sobre as suas origens. Este estudo examinou a associação entre processos identitários e stress percebido em PCD, explorando também o papel do modo de revelação, do teste de ADN e do conhecimento da identidade do dador. A amostra inicial incluiu 164 participantes PCD; a regressão hierárquica final incluiu 100 participantes com dados válidos em todas as variáveis do modelo. Os resultados mostraram que o modo de revelação não diferenciou significativamente os participantes em stress percebido ou identidade, e que o stress percebido se associou de forma consistente aos processos identitários. A exploração ruminativa foi o preditor positivo mais forte do stress percebido, enquanto a abertura e compreensão emergiu como preditor negativo. Embora as variáveis contextuais relacionadas com a concepção por doação não tenham melhorado significativamente o modelo como bloco, conhecer a identidade do dador emergiu como preditor positivo no modelo final. Estes resultados sugerem que o stress percebido em PCD pode depender não apenas do modo como a revelação ocorre ou da disponibilidade de informação sobre o dador, mas sobretudo da forma como esta informação é processada, significada e integrada na identidade.

Palavras-chave: concepção por doação; identidade; stress percebido; revelação; dador.

Abstract

Donor conception raises psychological and relational questions associated with the disclosure of origins, access to genetic information, and the integration of this experience into identity. Although the literature has emphasized the importance of early and parent-led disclosure, direct-to-consumer genetic testing has made the ways through which donor-conceived people (DCP) access information about their origins more complex. This study examined the association between identity processes and perceived stress among DCP, while also exploring the role of disclosure pathway, DNA testing, and knowledge of the donor's identity. The initial sample included 164 DCP; the final hierarchical regression included 100 participants with valid data on all variables in the model. Results showed that disclosure pathway did not significantly differentiate participants in perceived stress or identity, and that perceived stress was consistently associated with identity processes. Ruminative exploration was the strongest positive predictor of perceived stress, whereas openness and understanding emerged as a negative predictor. Although donor conception-related contextual variables did not significantly improve the model as a block, knowing the donor's identity emerged as a positive predictor in the final model. These findings suggest that perceived stress among DCP may depend not only on how disclosure occurs or on the availability of donor information, but especially on how this information is processed, given meaning, and integrated into identity.

Keywords: donor conception; identity; perceived stress; disclosure; donor.

Índice

Introduction	1
Current Study.....	4
Method	6
Procedure and participants.....	6
Measures.....	6
<i>Sociodemographic and donor-conception questionnaire</i>	6
<i>Perceived Stress Scale</i>	6
<i>Dimensions of Identity Development Scale</i>	7
<i>Donor Conception Identity Questionnaire</i>	7
Data Analysis.....	8
Results	10
Descriptive Results	10
Group Differences by Disclosure Pathway	11
Associations between Perceived Stress and Identity	12
Predictors of Perceived Stress in DCP	14
Discussion	16
Limitations and Future Research.....	19
Conclusion.....	21
References	22

Introduction

Gamete donation refers to the use of sperm, oocytes, or embryos provided by a third party to enable conception in individuals or couples who are unable to conceive using their own gametes or embryos. It has become an important component of contemporary assisted reproductive technologies and is now part of a broader landscape of family formation, including heterosexual couples, single parents, and same-sex parent families (Freeman et al., 2016; Golombok, 2015; Imrie & Golombok, 2020). By separating genetic, gestational, and social parenthood, donor conception raises psychological and relational questions about origins, kinship, belonging, and identity (Golombok, 2015; Ravelingien & Pennings, 2013).

For donor-conceived people (DCP), information about the circumstances of conception may become part of their personal and family narrative, rather than merely medical or biographical information (Blyth et al., 2012; Turner & Coyle, 2000). Access to genetic origins can be psychologically meaningful when individuals seek to understand ancestry, family history, biological background, or connections to donors and donor siblings (Blyth et al., 2012; Freeman et al., 2009; Jadvá et al., 2009). In this sense, donor conception should be understood not only as a reproductive practice, but also as a developmental context in which disclosure, secrecy, openness, and identity integration may become relevant (Ilioi et al., 2017; Jadvá et al., 2009; Turner & Coyle, 2000).

Historically, donor conception often occurred within a culture of secrecy, with anonymous donation framed as a way of protecting parents, donors, and children from stigma or relational disruption (Darroch & Smith, 2021; Ravelingien & Pennings, 2013). This model has been increasingly challenged by research and advocacy emphasizing the relevance of genetic knowledge and the right of DCP to access information about their biological origins (Blyth et al., 2012; de Melo-Martín, 2014; Ravelingien & Pennings, 2013). The expansion of direct-to-consumer genetic testing has further transformed this context by making anonymity increasingly difficult to guarantee and by creating new routes through which DCP may discover their origins independently of parental disclosure (Darroch & Smith, 2021).

Research and professional guidelines generally emphasize early, gradual, and age-appropriate disclosure, suggesting that donor conception may be more easily integrated when it becomes part of the child's life narrative from an early age (Ethics Committee of the American Society for Reproductive Medicine, 2018; Ilioi et al., 2017; Kirkman-Brown et al.,

2022). Beyond timing, increasing attention has been given to the pathway through which DCP learn about their conception. Planned, parent-led disclosure within a supportive family context may have a different psychological meaning from accidental or indirect discovery, particularly when the information emerges outside a planned parental conversation (Hershberger et al., 2023; Ilioi et al., 2017; Zadeh et al., 2018). Disclosure is therefore not only a matter of age, but also a relational and communicative process through which information about donor conception is framed, explained, and integrated into the family narrative.

Parent-led disclosure is generally described as more favorable when it occurs in the context of openness, emotional availability, and ongoing communication. When parents discuss donor conception in an age-appropriate and supportive way, donor-conceived adolescents are more likely to describe family relationships as open and trusting, and to approach donor conception with curiosity rather than distress (Ilioi et al., 2017; Scheib et al., 2005; Zadeh et al., 2018). Professional recommendations similarly emphasize disclosure as an ongoing process, encouraging parents to revisit the topic over time as the child's understanding develops (Ethics Committee of the American Society for Reproductive Medicine, 2018; Kirkman-Brown et al., 2022). Intervention-oriented work has similarly highlighted the need to support parents in telling and talking with children about donor conception over time (Hershberger et al., 2023).

By contrast, accidental or indirect discovery may be more challenging because it can occur without preparation, parental support, or a coherent explanatory framework. Individuals who learn about donor conception through DNA testing, third-party disclosure, family conflict, or inconsistencies in family narratives may experience the information as both a new biographical fact and a disruption of trust and family meaning (Blyth et al., 2012; Darroch & Smith, 2021; Turner & Coyle, 2000; Zadeh et al., 2018). Nevertheless, the distinction between parent-led and accidental discovery should not be interpreted deterministically, as adjustment also depends on family communication, access to donor-related information, personal meaning-making, and broader identity processes (Jadva et al., 2009; Slutsky et al., 2016; Zadeh et al., 2018).

DNA testing and knowledge of the donor's identity are also relevant to contemporary donor conception experiences, particularly because they relate to access to donor-related information and to the possibility of identifying genetic connections. DCP may seek information about donors and donor siblings for several reasons, including curiosity, medical information, physical resemblance, ancestry, biological relatedness, and questions about identity (Blyth et al., 2012; Freeman et al., 2009; Jadva et al., 2009; Jadva et al., 2025). In this context, knowing the donor's identity may provide information that helps some individuals

clarify aspects of their origins, although the psychological meaning of this knowledge may also depend on whether it leads to contact, the nature of that contact, and the type of relationship that develops with the donor or other donor connections (Jadva et al., 2025; Scheib et al., 2005).

These experiences are closely linked to identity, as research suggests that donor-related information and donor connections may shape how DCP understand their origins, construct meaning around biological relatedness, and incorporate donor conception into their sense of self (Jadva et al., 2025; Slutsky et al., 2016). Identity development is a central developmental task, particularly during adolescence and emerging adulthood, and involves the construction of a coherent sense of self across personal history, relationships, values, and future goals (Erikson, 1968; Schwartz et al., 2011). Contemporary models describe identity formation as a dynamic process involving both exploration and commitment, through which individuals consider possible life directions, make choices, and evaluate whether those choices are personally meaningful over time (Luyckx et al., 2006; Luyckx et al., 2008).

Commitment-related identity processes, such as commitment making and identification with commitment, tend to be associated with higher well-being, self-esteem, and psychosocial functioning, whereas identity confusion and ruminative exploration are associated with psychological distress, anxiety, depressive symptoms, and perceived stress (Crocetti et al., 2008; Kroger et al., 2010; Luyckx et al., 2008; Schwartz et al., 2011). Ruminative exploration may be particularly relevant in the context of stress, as it reflects repetitive, worry-driven questioning that interferes with the consolidation of stable commitments and keeps identity-relevant questions unresolved (Luyckx et al., 2008; Schwartz et al., 2013). Together, these findings suggest that identity processes are closely linked to psychological adjustment, including perceived stress (Luyckx et al., 2008; Schwartz et al., 2011; Schwartz et al., 2013).

For DCP, identity development encompasses questions shared with other individuals, such as belonging, family relationships, and life narrative, but may also involve donor-specific questions concerning genetic origins, biological relatedness, and the personal meaning of being conceived through donation (Blyth et al., 2012; Jadva et al., 2009; Turner & Coyle, 2000). The concept of genealogical bewilderment captures one dimension of this experience: the sense of disorientation or incompleteness that can arise when knowledge of biological origins is absent or incomplete (Sants, 1964; Turner & Coyle, 2000). Qualitative studies with donor-conceived adolescents and adults have described feelings of curiosity, dislocation, and unresolved questioning, particularly when donor information was withheld, hidden, or discovered later in life (Jadva et al., 2009; Slutsky et al., 2016; Zadeh et al., 2018).

At the same time, donor conception should not be understood as inherently problematic. Many DCP show positive adjustment and integrate donor conception into their identity without major distress, especially when family communication is open and supportive (Golombok, 2015; Ilioi et al., 2017; Zadeh et al., 2018). Rather than assuming that donor conception itself leads to maladjustment, it is therefore more useful to examine how DCP process and integrate this aspect of their identity, and whether this process may be particularly relevant for understanding psychological outcomes.

Although general models of identity provide a useful foundation, they may not fully capture the specific meanings attached to donor conception. Donor conception identity refers to the ways in which DCP understand, evaluate, and incorporate being donor-conceived into their sense of self, encompassing both potentially challenging and affirmative aspects of this experience (Jadva et al., 2025; Slutsky et al., 2016). This distinction matters because two individuals may share similar disclosure circumstances yet differ substantially in how they interpret donor conception, how salient it becomes to their identity, and whether it is experienced as a source of concern, stigma, acceptance, or understanding (Jadva et al., 2025). Because broad identity processes do not fully capture these donor-specific meanings, the Donor Conception Identity Questionnaire was developed to assess them directly among DCP (Jadva et al., 2025).

This specificity is theoretically important because donor conception-related experiences may influence psychological adjustment through identity-specific processes, rather than through disclosure circumstances alone. A person who learned early may still experience unresolved questions or stigma, while someone who learned later may integrate the information coherently, depending on family communication, access to donor information, and personal meaning-making (Ilioi et al., 2017; Jadva et al., 2009; Zadeh et al., 2018). Donor conception identity, alongside broader identity processes, may therefore help explain perceived stress beyond disclosure pathway and other donor conception-related contextual variables.

Current Study

Building on this literature, the present study aims to contribute to a deeper understanding of perceived stress among DCP by examining the relative contribution of donor conception-related contextual variables, general identity processes, and donor conception-specific identity. More specifically, the study first sought to examine whether DCP who learned about their origins through parental disclosure differed from those who learned accidentally in levels of perceived stress and identity-related outcomes. Second, the study aimed to examine, through a

hierarchical regression model, whether perceived stress was better explained by donor conception-related contextual variables, broader identity development processes, or the specific integration of donor conception into the self. By comparing the explanatory contribution of these different domains, this study aimed to clarify whether perceived stress among DCP is better understood as a function of what happened in relation to disclosure and donor information, or of how these experiences are psychologically processed and incorporated into identity.

Based on previous research linking identity development to psychological adjustment, identity processes were expected to be associated with perceived stress among DCP. Specifically, ruminative exploration was expected to be positively associated with perceived stress, whereas commitment-related identity processes were expected to be negatively associated with perceived stress. Regarding donor conception-specific identity, concern and preoccupation and internalized stigma were expected to be positively associated with perceived stress, whereas pride and acceptance and openness and understanding were expected to be negatively associated with perceived stress. Given the more limited evidence concerning disclosure pathway, DNA testing, and knowledge of the donor's identity, these contextual variables were examined in relation to perceived stress and identity-related outcomes as part of the broader model.

Method

Procedure and participants

This study was conducted within the scope of the MyGENESIS project (Portuguese Science and Technology Foundation, 2023.14465.PEX) and followed a quantitative, cross-sectional design. Data were collected between December 2025 and March 2026 through an online questionnaire hosted on LimeSurvey. Participants were recruited through convenience sampling, mainly through dissemination on social media accounts created for the MyGENESIS project, as well as through online networks and communities related to donor conception. Before completing the questionnaire, participants were informed about the aims of the study, the voluntary nature of participation, the confidentiality of their responses, and their right to withdraw at any time without penalty. Informed consent was obtained electronically before participants accessed the survey. The study was approved by the Ethics Committee of the Faculty of Psychology and Education Sciences of the University of Porto (2025-10-02b).

The initial sample consisted of 164 DCP. Participants were eligible if they reported being conceived through gamete or embryo donation and were aged 18 years or older and were able to complete the questionnaire in English. Of the initial sample, 140 participants had valid data on perceived stress, 142 had valid data on the DIDS dimensions, and 137 had valid data on the DCIQ dimensions. Therefore, the main sample with valid data on the stress and identity measures consisted of 137 participants.

Measures

Sociodemographic and donor-conception questionnaire

Sociodemographic variables included age, gender, living situation, and employment status. Donor conception-related variables included disclosure pathway, DNA testing, and knowledge of the donor's identity.

Perceived Stress Scale

Perceived stress was assessed using the four-item version of the Perceived Stress Scale (PSS-4; Cohen et al., 1983). The PSS-4 assesses the extent to which individuals perceived their lives as unpredictable, uncontrollable, and overloaded during the previous month. Participants responded to each item on a five-point scale ranging from 0 (never) to 4 (very often). Items 2 and 3 were reverse coded, and a total score was computed by summing the four items. Higher

scores indicate higher levels of perceived stress. The original PSS-4 showed modest internal consistency, with a reported Cronbach's alpha of .60 (Cohen et al., 1983). In the present sample, internal consistency was acceptable, McDonald's $\omega = .77$.

Dimensions of Identity Development Scale

General identity processes were assessed using the Dimensions of Identity Development Scale (DIDS; Luyckx et al., 2008). The DIDS includes 25 items rated on a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The scale assesses five identity dimensions, with five items per dimension: commitment making, exploration in breadth, ruminative exploration, identification with commitment, and exploration in depth.

Commitment making refers to the extent to which individuals have made choices about important identity-related issues, whereas identification with commitment reflects the degree to which these choices are experienced as personally meaningful and congruent with the self. Exploration in breadth assesses the consideration of different identity alternatives, while exploration in depth assesses the evaluation and re-evaluation of existing commitments. Ruminative exploration reflects a repetitive, worry-driven, and unresolved form of identity exploration (Luyckx et al., 2008). In the original study, internal consistency was good across dimensions, with Cronbach's alpha values ranging from .79 to .86 in Sample 1 and from .80 to .86 in Sample 2 (Luyckx et al., 2008). In the present sample, McDonald's omega values were .95 for commitment making, .85 for exploration in breadth, .91 for ruminative exploration, .90 for identification with commitment, and .68 for exploration in depth. Mean scores were computed for each DIDS dimension, with higher scores indicating higher levels of the corresponding identity process.

Donor Conception Identity Questionnaire

Donor conception-specific identity was assessed using the Donor Conception Identity Questionnaire (DCIQ; Jadvā et al., 2025). The DCIQ assesses how donor-conceived individuals understand and integrate donor conception into their identity. The questionnaire was developed from previous research on donor conception and adoption identity and includes items rated on a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The final scoring structure includes four dimensions: concern and preoccupation, internalized stigma, pride and acceptance, and openness and understanding.

Concern and preoccupation includes eight items and reflects persistent thought, worry, or emotional involvement with donor conception. Internalized stigma includes five items and reflects shame, secrecy, discomfort, or negative self-evaluation associated with being donor conceived. Pride and acceptance includes six items and reflects positive feelings, acceptance,

and pride in being donor conceived. Openness and understanding includes four items and reflects comfort discussing donor conception and making sense of its meaning within one's life story (Jadva et al., 2025). In the original study, internal consistency was good for concern and preoccupation ($\alpha = .87$), internalized stigma ($\alpha = .88$), and pride and acceptance ($\alpha = .87$), and lower for openness and understanding ($\alpha = .57$; Jadva et al., 2025). In the present sample, McDonald's omega values were .84 for concern and preoccupation, .79 for internalized stigma, .86 for pride and acceptance, and .56 for openness and understanding. Negatively loaded items were reverse coded, and mean scores were computed for each DCIQ dimension, with higher scores indicating higher levels of the corresponding dimension.

Data Analysis

Data were analyzed using IBM SPSS Statistics. Composite scores were computed according to the scoring procedures of each measure as described above. Internal consistency was examined using McDonald's omega for the PSS-4, DIDS, and DCIQ dimensions.

Pearson correlations were conducted to examine associations between perceived stress, general identity processes, and donor conception-specific identity dimensions. The correlation matrix was computed using participants with valid data on the central stress and identity measures. Independent-samples *t* tests were conducted to examine whether perceived stress and identity variables differed according to disclosure pathway.

A hierarchical linear regression was conducted to examine predictors of perceived stress. The model was organized into four blocks. In Block 1, sociodemographic variables were entered: age, gender, living with a partner, and employment status. In Block 2, donor conception-related contextual variables were added: disclosure pathway, DNA testing, and knowledge of the donor's identity. In Block 3, general identity dimensions assessed by the DIDS were entered. In Block 4, donor conception-specific identity dimensions assessed by the DCIQ were added.

Several variables were recoded for the regression analysis. Gender was recoded as male/female, and participants who selected non-binary/another identity or preferred not to answer were coded as missing for this variable. Living situation was recoded as living with a partner versus not living with a partner. Employment status was recoded as employed versus not employed. Disclosure pathway was recoded as parent-led disclosure versus accidental discovery; participants who reported indirect discovery were coded as missing for this variable because the regression compared planned parental disclosure with accidental discovery. DNA testing and knowledge of the donor's identity were coded as binary variables.

For the hierarchical regression analysis, only participants with complete data on all variables included in the model were retained. Of the 137 participants with valid data on the central stress and identity measures, thirty-one participants were excluded because they had missing data on at least one variable required for the regression model. These variables included sociodemographic variables, donor conception-related contextual variables, and identity-related variables. After this step, three participants were excluded because gender was recoded as male/female and they had selected non-binary/another identity. A further three participants were excluded because disclosure pathway was recoded as parent-led disclosure versus accidental discovery and they had reported indirect discovery. Therefore, the final analytic sample for the hierarchical regression consisted of 100 participants.

Results

Descriptive Results

Sample characteristics are presented in Table 1. Participants had a mean age of 38, ranging from 19 to 81 years. Nearly 80% of the sample identified as female, and most participants had completed higher education. The sample was predominantly composed of participants conceived through sperm donation, and most had completed a DNA test and knew the identity of their donor. Parent-led disclosure was the most frequently reported disclosure pathway.

Table 1. *Sample Characteristics of the Study Sample*

Characteristic		<i>M (SD)</i>	Range
Age		38.31 (12.41)	19–81
Characteristic	Category	<i>n</i>	%
Gender	Female	107	78.1
	Male	26	19.0
	Non-binary/another identity	3	2.2
	Prefer not to say	1	0.7
Education	Did not complete secondary/high school	1	0.7
	Secondary/high school diploma	12	8.8
	Vocational/technical diploma/certificate	12	8.8
	Bachelor's degree	58	42.3
	Master's degree	41	29.9
Family type	Doctoral degree	13	9.5
	Heterosexual couple	111	81.0
	Same-sex female couple	14	10.2
	Single mother by choice	10	7.3
Donation type	Missing	2	1.5
	Sperm donation	128	93.4
	Egg donation	5	3.6
	Embryo donation	1	0.7
	Double donation	3	2.2
Donation arrangement	Anonymous	122	89.1
	Open/identity release	7	5.1
	Known donor	4	2.9
	Not sure/don't know	4	2.9
Disclosure pathway	Parent-led disclosure	78	56.9
	Indirect discovery	3	2.2
	Accidental discovery	47	34.3

	Missing	9	6.6
DNA test	No	14	10.2
	Yes	123	89.8
Known donor identity	No	26	19.0
	Yes	109	79.6
Living situation	Missing	2	1.5
	Alone	28	20.4
	With partner	67	48.9
	With parents/family	15	10.9
	With friends/roommates	10	7.3
Employment status	Missing	17	12.4
	Employed	90	65.7
	Unemployed	11	8.0
	Studying	8	5.8
	Employed and studying	10	7.3
	Retired	5	3.6
	Missing	13	9.5

Note. N = 137. Missing values are reported because some participants with valid data on the central study measures did not complete all sociodemographic or donor conception-related items.

Group Differences by Disclosure Pathway

Group differences for perceived stress and identity variables according to disclosure pathway are presented in Table 2. No significant differences were found between disclosure groups in perceived stress or in any of the DIDS and the DCIQ dimensions. These findings indicate that disclosure pathway, when considered as a binary distinction between parent-led disclosure and accidental discovery, was not associated with significant differences in perceived stress, general identity processes, or donor conception-specific identity.

Table 2. *Group Differences by Disclosure Pathway*

Variable	Parent-led <i>M</i> (<i>SD</i>)	Accidental <i>M</i> (<i>SD</i>)	<i>t</i>	<i>p</i>
<i>Stress and identity variables</i>				
Perceived stress	6.82 (3.16)	7.04 (3.33)	-0.37	.711
DIDS commitment making	3.56 (0.93)	3.76 (0.86)	-1.21	.229
DIDS exploration in breadth	3.46 (0.76)	3.54 (0.81)	-0.56	.573
DIDS ruminative exploration	2.86 (1.08)	2.83 (1.14)	0.15	.881
DIDS identification with commitment	3.41 (0.84)	3.56 (0.81)	-1.01	.316
DIDS exploration in depth	3.37 (0.72)	3.45 (0.63)	-0.60	.549
DCIQ concern and preoccupation	3.80 (0.75)	3.95 (0.73)	-1.10	.273

DCIQ internalized stigma	1.86 (0.80)	1.88 (0.70)	-0.12	.906
DCIQ pride and acceptance	3.53 (0.92)	3.30 (0.95)	1.33	.187
DCIQ openness and understanding	3.57 (0.79)	3.35 (0.76)	1.50	.135

Note. Group comparisons included only participants who reported parent-led disclosure or accidental discovery. Independent-samples *t* tests were conducted using available data for each outcome. DIDS = Dimensions of Identity Development Scale; DCIQ = Donor Conception Identity Questionnaire.

Associations between Perceived Stress and Identity

Pearson correlations were conducted to examine the associations between perceived stress, general identity processes, and donor conception-specific identity dimensions. Results are presented in Table 3.

Perceived stress was significantly and negatively associated with commitment making and identification with commitment. In contrast, perceived stress was significantly and positively associated with ruminative exploration and exploration in depth. The association between perceived stress and exploration in breadth was positive but did not reach statistical significance. Regarding donor conception-specific identity, perceived stress was positively associated with concern and preoccupation, and negatively associated with pride and acceptance and openness and understanding. Internalized stigma was not significantly associated with perceived stress at the bivariate level.

Correlations between general identity processes and donor conception-specific identity dimensions also showed relevant associations. Concern and preoccupation was positively associated with ruminative exploration and negatively associated with commitment making and identification with commitment. Both pride and acceptance and openness and understanding were positively associated with commitment making and identification with commitment, and negatively associated with ruminative exploration. Internalized stigma was positively associated with ruminative exploration and negatively associated with commitment making, identification with commitment, pride and acceptance, and openness and understanding.

Table 3. *Correlations Between Identity Variables and Perceived Stress*

Variable	Perceived stress	DIDS CM	DIDS EB	DIDS RE	DIDS IC	DIDS ED	DCIQ CP	DCIQ IS	DCIQ PA	DCIQ OU
Perceived stress	—									
DIDS CM	-.55***	—								
DIDS EB	.17	-.16	—							
DIDS RE	.62***	-.70***	.41***	—						
DIDS IC	-.62***	.73***	-.13	-.72***	—					
DIDS ED	.17*	.03	.48***	.25**	-.06	—				
DCIQ CP	.43***	-.28***	.28**	.33***	-.40***	.22**	—			
DCIQ IS	.10	-.17*	.03	.24**	-.28**	-.02	.10	—		
DCIQ PA	-.32***	.23**	.00	-.22**	.37***	.11	-.54***	-.48***	—	
DCIQ OU	-.29***	.24**	-.10	-.31***	.33***	-.09	-.32***	-.63***	.52***	—

Note. N = 137. PSS-4 = Perceived Stress Scale-4; DIDS = Dimensions of Identity Development Scale; DCIQ = Donor Conception Identity Questionnaire; CM = commitment making; EB = exploration in breadth; RE = ruminative exploration; IC = identification with commitment; ED = exploration in depth; CP = concern and preoccupation; IS = internalized stigma; PA = pride and acceptance; OU = openness and understanding. Correlations were computed using listwise deletion for the central stress and identity variables. * $p < .05$. ** $p < .01$. *** $p < .001$.

Predictors of Perceived Stress in DCP

Hierarchical regression analyses were conducted to examine predictors of perceived stress. Results for the hierarchical models are presented in Table 4, and final regression coefficients are presented in Table 5.

Table 4. *Hierarchical Regression Model Predicting Perceived Stress*

Model	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	ΔR^2	ΔF	<i>p</i> for ΔF
1. Sociodemographic variables	.341	.116	.079	.116	3.12	.018
2. Donor conception-related variables	.385	.149	.084	.032	1.17	.327
3. General identity processes	.712	.508	.440	.359	12.68	< .001
4. Donor conception-specific identity	.763	.583	.503	.075	3.75	.007

Note. N = 100. Block 1 included age, gender, living with partner, and employment status. Block 2 added disclosure pathway, DNA testing, and known donor identity. Block 3 added DIDS dimensions. Block 4 added DCIQ dimensions.

The first block, including age, gender, living with a partner, and employment status, explained a significant proportion of variance in perceived stress, $R^2 = .116$, $p = .018$. The addition of donor conception-related contextual variables in Block 2, namely disclosure pathway, DNA testing, and knowledge of the donor's identity, did not significantly improve the model, $\Delta R^2 = .032$, $p = .327$. This indicates that, as a group, these contextual variables did not explain additional variance in perceived stress beyond sociodemographic characteristics.

The addition of the DIDS dimensions in Block 3 substantially improved the model, $\Delta R^2 = .359$, $p < .001$. This was the largest increase in explained variance, indicating that general identity processes accounted for a considerable proportion of perceived stress beyond sociodemographic and donor conception-related contextual variables. Finally, the addition of the DCIQ dimensions in Block 4 also significantly improved the model, $\Delta R^2 = .075$, $p = .007$. The final model explained 58.3% of the variance in perceived stress, $R^2 = .583$.

Table 5. *Final Regression Model Coefficients Predicting Perceived Stress*

Predictor	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
Age	-0.02	0.03	-.072	-0.76	.447
Gender (female)	0.42	0.67	.054	0.62	.537
Living with partner (yes)	-0.53	0.53	-.078	-0.98	.330
Employed (yes)	-0.50	0.64	-.064	-0.78	.435
Disclosure pathway (accidental discovery)	-0.28	0.52	-.042	-0.53	.597
DNA test (yes)	-0.74	0.94	-.070	-0.79	.431
Known donor identity (yes)	1.58	0.71	.198	2.24	.028

DIDS commitment making	-0.27	0.45	-.071	-0.60	.551
DIDS exploration in breadth	-0.64	0.45	-.147	-1.47	.144
DIDS ruminative exploration	1.53	0.40	.511	3.81	< .001
DIDS identification with commitment	-0.36	0.54	-.085	-0.65	.515
DIDS exploration in depth	0.18	0.50	.032	0.34	.736
DCIQ concern and preoccupation	0.04	0.48	.021	0.20	.845
DCIQ internalized stigma	-1.25	0.46	-.273	-2.70	.008
DCIQ pride and acceptance	-0.77	0.41	-.208	-1.81	.074
DCIQ openness and understanding	-1.09	0.46	-.239	-2.35	.021

Note. N = 100. Binary predictors were coded as follows: gender (0 = male, 1 = female), living with partner (0 = no, 1 = yes), employment status (0 = not employed, 1 = employed), disclosure pathway (0 = parent-led disclosure, 1 = accidental discovery), DNA test (0 = no, 1 = yes), and known donor identity (0 = no, 1 = yes).

In the final model, knowledge of the donor's identity was a significant positive predictor of perceived stress, indicating that participants who knew the identity of their donor reported higher perceived stress. Ruminative exploration was also a significant positive predictor, indicating that higher levels of ruminative identity exploration were associated with higher perceived stress. In contrast, internalized stigma and openness and understanding were significant negative predictors of perceived stress. Although concern and preoccupation and pride and acceptance were significantly associated with perceived stress at the bivariate level, they were not significant predictors in the final regression model.

Overall, the hierarchical regression indicated that identity-related blocks accounted for substantial additional variance in perceived stress. Although disclosure pathway and DNA testing did not significantly predict stress in the final model, knowledge of the donor's identity was a significant predictor and should be interpreted with caution, given the imbalance between participants who did and did not know the donor's identity.

Discussion

The present study examined perceived stress among DCP by considering disclosure pathway, donor conception-related contextual variables, general identity processes, and donor conception-specific identity. Overall, the findings suggest that perceived stress was more closely linked to identity-related processes than to disclosure pathway alone. Although donor conception-related contextual variables did not significantly improve the regression model as a block, general identity processes accounted for the largest increase in explained variance, and donor conception-specific identity added further explanatory value. Taken together, these findings suggest that perceived stress among DCP may be better understood not through disclosure pathway alone, but through the way donor conception is interpreted and integrated into both broader identity processes and donor conception-specific identity.

Disclosure pathway was not associated with significant differences in perceived stress or identity-related outcomes, as participants who learned about their conception through parent-led disclosure did not differ significantly from those who discovered it accidentally. This finding does not mean that disclosure pathway is irrelevant, nor does it contradict literature emphasizing the importance of early, gradual, and parent-led disclosure (Ethics Committee of the American Society for Reproductive Medicine, 2018; Ilioi et al., 2017; Kirkman-Brown et al., 2022). Rather, it suggests that a binary distinction between parent-led disclosure and accidental discovery may not be sufficient to capture the psychological complexity of disclosure experiences. Disclosure is not only a single event, but also an ongoing relational and communicative process that may unfold differently across development (Ethics Committee of the American Society for Reproductive Medicine, 2018; Hershberger et al., 2023). Parent-led disclosure may vary in timing, emotional tone, parental openness, and continuity over time, while accidental discovery may occur in different circumstances, including DNA testing, family conflict, third-party disclosure, or inconsistencies in family narratives. Therefore, the psychological meaning of disclosure may depend not only on the disclosure pathway category, but also on the relational context, the quality of communication, and the individual's personal meaning-making.

The correlational findings further supported the relevance of identity processes for perceived stress among DCP. Perceived stress was closely associated with general identity processes, particularly through its positive association with ruminative exploration and its

negative associations with commitment making and identification with commitment. This pattern suggests that perceived stress may be higher when identity-related questions remain unresolved, repetitive, or worry-driven, and lower when individuals have made identity-related choices that are experienced as personally meaningful and coherent. This is consistent with identity development models linking ruminative exploration to distress and perceived stress, and commitment-related processes to better psychosocial adjustment (Luyckx et al., 2008; Schwartz et al., 2011; Schwartz et al., 2013). The positive association between exploration in depth and perceived stress may indicate that re-evaluating existing commitments can also be psychologically demanding, particularly when identity-relevant questions remain active. By contrast, exploration in breadth was not significantly associated with perceived stress, suggesting that considering different identity alternatives may have been less clearly related to perceived stress in this sample than the more ruminative or unresolved quality of exploration.

The correlations also showed that general identity processes and donor conception-specific identity were related but conceptually distinct. Concern and preoccupation was associated with higher levels of ruminative exploration and lower commitment making and identification with commitment, suggesting that donor conception-related concern may be connected to broader patterns of unresolved identity questioning. In contrast, pride and acceptance and openness and understanding were associated with stronger commitment making and identification with commitment, and with lower levels of ruminative exploration. This pattern suggests that a more accepting, open, and coherent integration of donor conception may be aligned with broader identity coherence. Internalized stigma was also associated with higher levels of ruminative exploration and lower commitment making and identification with commitment, as well as with lower pride and acceptance and openness and understanding. This suggests that internalized stigma may be linked to a less integrated and more conflicted way of relating to donor conception, characterized by greater unresolved questioning and lower acceptance or openness. Taken together, these associations suggest that donor conception-specific identity is closely linked to general identity development, while still capturing meanings that are specific to being donor-conceived, such as concerns about origins, stigma, acceptance, openness, and the integration of donor conception into the self (Jadva et al., 2025; Slutsky et al., 2016).

The hierarchical regression further clarified the relative contribution of contextual and identity-related variables to perceived stress. When disclosure pathway, DNA testing, and knowledge of the donor's identity were entered as a block, they did not significantly improve the model beyond sociodemographic variables. This suggests that, in the present sample, donor

conception-related contextual variables did not account for significant additional variance in perceived stress when considered together at this stage of the model. In contrast, adding general identity processes produced the largest increase in explained variance, suggesting that these variables contributed substantially to the model after sociodemographic and donor conception-related contextual variables had been considered. Donor conception-specific identity also added significant explanatory value after general identity processes were included. This indicates that, although broader identity development was central to the model, the specific ways in which DCP understand and integrate donor conception into their identity captured additional variance in perceived stress.

At the level of individual predictors, ruminative exploration was the strongest positive predictor of perceived stress in the final model. This finding is consistent with identity development models, as ruminative exploration reflects repetitive, worry-driven, and unresolved questioning that has been linked to difficulties in consolidating stable commitments (Luyckx et al., 2008; Schwartz et al., 2013). In the context of donor conception, such questioning may involve origins, biological relatedness, resemblance, donor information, donor siblings, medical history, and the meaning of family relationships. When these questions remain unresolved or become dominated by uncertainty, they may be accompanied by higher perceived stress (Luyckx et al., 2008; Schwartz et al., 2013).

Among the donor conception-specific identity dimensions, openness and understanding emerged as a significant negative predictor of perceived stress. This suggests that being able to discuss donor conception, make sense of its meaning, and integrate it into one's life story may be associated with lower perceived stress. Rather than reflecting simple positivity toward donor conception, openness and understanding may indicate that this aspect of personal history is part of a more coherent, communicable, and integrated self-narrative. This interpretation is consistent with research emphasizing that DCP vary in how they incorporate donor conception into their subjective sense of identity, and that donor conception may carry different meanings depending on family narratives, access to information, and personal meaning-making (Jadva et al., 2025; Slutsky et al., 2016; Turner & Coyle, 2000). Internalized stigma showed an unexpected pattern: although it was not significantly associated with perceived stress at the bivariate level, it emerged as a negative predictor in the final model. This result should be interpreted cautiously and should not be understood as indicating a protective role of stigma. Given that internalized stigma refers to shame, secrecy, discomfort, or negative self-evaluation associated with being donor-conceived, a protective interpretation would be theoretically inconsistent with the meaning of the construct (Jadva et al., 2025). This pattern may reflect a

suppression effect or shared variance between internalized stigma and other donor conception-specific identity dimensions, particularly pride and acceptance and openness and understanding.

Knowledge of the donor's identity also emerged as a significant positive predictor of perceived stress. This result should be interpreted with caution, given the imbalance between participants who knew and did not know the donor's identity. Nevertheless, it may suggest that knowing the donor's identity should not be understood as equivalent to resolution or reassurance. In the present sample, this variable indicated whether participants knew the donor's identity, but did not necessarily imply contact, an ongoing relationship, or a satisfying relational experience. Previous research suggests that donor-related information and connections may vary in their personal and relational meaning (Jadva et al., 2025; Scheib et al., 2005). Knowing who the donor is may answer some questions about genetic origins, but it may also introduce new identity and relational tasks, including questions about resemblance, belonging, family boundaries, expectations of contact, the donor's response, and the donor's place in the individual's life story. This may be particularly relevant in the context of DNA testing, which has created new pathways for identifying donors and genetic relatives outside planned family disclosure (Darroch & Smith, 2021). Thus, knowledge of the donor's identity should be understood not simply as access to information, but as a potentially complex experience that may require psychological and relational integration.

Overall, these findings suggest that disclosure pathway, DNA testing, and knowledge of the donor's identity should not be understood as isolated contextual indicators of perceived stress. Their relevance may depend on how these experiences are communicated, interpreted, and integrated into identity. This supports the importance of examining both broader identity processes and donor conception-specific identity when considering perceived stress among DCP.

Limitations and Future Research

Several limitations should be considered when interpreting these findings. First, the cross-sectional design does not allow conclusions about causality or directionality. Although identity processes were associated with perceived stress, it is not possible to determine whether difficulties in identity development contribute to stress, whether stress intensifies identity-related concerns, or whether both processes influence each other over time. In addition, the study relied on self-report measures, including retrospective reports of disclosure experiences,

which may be influenced by memory, current emotional state, and later reinterpretations of donor conception experiences.

Second, the sample was recruited through convenience sampling and may not be representative of all DCP. Participants who take part in research on donor conception may be more engaged with, interested in, or concerned about their donor conception history than those who do not participate. This is particularly relevant given the high proportion of participants who had completed DNA testing and knew the identity of their donor. Some variables were also unevenly distributed, resulting in small comparison groups and limiting the interpretation of findings related to DNA testing and donor identity knowledge. The final regression sample was also reduced due to missing data and listwise deletion, which may have limited statistical power, especially for contextual predictors and smaller subgroups.

Third, some complex donor conception experiences were necessarily simplified for quantitative analysis. Disclosure pathway was coded as parent-led disclosure versus accidental discovery, but this distinction did not capture timing, emotional tone, parental openness, family communication, or the continuity of disclosure over time. Similarly, knowing the donor's identity did not capture whether contact occurred, the quality or regularity of that contact, the donor's response, how long the participant had known the donor's identity, or whether contact met the participant's expectations. These aspects may be important for understanding why donor identity knowledge was associated with higher perceived stress in the present study.

Future research should therefore use longitudinal designs to clarify the direction of associations between identity processes and perceived stress. Larger and more diverse samples are also needed, particularly with more balanced groups of DCP who have and have not completed DNA testing, and who do or do not know the donor's identity. Future studies should also examine the circumstances and quality of disclosure, the route through which donor identity became known, the presence and quality of donor contact, and the extent to which these experiences are integrated into identity. Mixed-methods approaches may be especially useful, as qualitative data can help clarify the personal meaning DCP give to disclosure, donor information, genetic connections, and contact experiences.

From an applied perspective, these findings suggest that support for DCP and their families may benefit from moving beyond whether disclosure has occurred or whether donor information is available. Attention should also be given to how donor conception is discussed, emotionally processed, and incorporated into the individual's identity and family narrative.

Conclusion

The present study highlights the central role of identity processes in understanding perceived stress among DCP. Disclosure pathway did not significantly differentiate participants in perceived stress or identity-related outcomes, and donor conception-related contextual variables did not significantly improve the regression model as a block. In contrast, general identity processes accounted for the largest increase in explained variance, with ruminative exploration emerging as the strongest positive predictor of perceived stress in the final model. Donor conception-specific identity also added further explanatory value, particularly through openness and understanding, which was negatively associated with perceived stress. Knowledge of the donor's identity also emerged as a positive predictor, suggesting that knowing who the donor is should not be understood simply as resolving uncertainty, but as a potentially complex experience that may involve new identity and relational tasks. Overall, these findings support an identity-centered understanding of perceived stress among DCP, in which disclosure pathway and donor-related information are best understood in relation to how donor conception is emotionally processed, relationally situated, and integrated into identity over time.

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