



Daddy's Little Girl: The Role of Life History in Paternal Investment Towards Daughters

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Received: 20 February 2025 / Revised: 11 April 2025 / Accepted: 16 April 2025
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Abstract

Objectives This study examines the complex dynamics of father-daughter relationships, focusing on how life history factors are associated with paternal behaviors towards daughters. Drawing on Life history Theory and the Daughter-Guarding hypothesis, the research investigates how these factors contribute to father-daughter interactions, such as attachment, protection, support, and control received from fathers.

Methods Two surveys were conducted: one with 120 daughters aged 18–21 (Study 1) and another with 120 fathers (Study 2), both recruited through online platforms. Study 1 examined the relationship from the daughters' perspective, while Study 2 explored it from the fathers' perspective.

Results Fathers with higher education and stable financial backgrounds showed stronger attachment, support, and protection to their daughters. Additionally, daughters' self-perceived attractiveness was associated with paternal behaviors, suggesting that attractive daughters were more likely to receive support, protection, and develop stronger attachments to their fathers.

Conclusions The findings emphasize the need for further research into the relationships of these factors, particularly across diverse cultural and socioeconomic backgrounds, to better understand their role in shaping father-daughter relationships and the potential effects on female development.

Keywords Life history theory · Daughter-Guarding hypothesis · Daughter-Father relationships · Attachment · Support

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Parental investment refers to the amount of time, resources, and energy parents provide to their children (Trivers, 1972). The relationships daughters have with their fathers presents a unique avenue of research, as it has been suggested that fathers may affect the developmental trajectory of their daughters (Ellis et al., 1999). Paternal behaviors reflect and represent environmental cues that may be internalized in daughters as attachment styles. Attachment systems encode early childhood experiences and are sensitive to parental interactions, but the type of parental interaction and exposure to environmental harshness may promote different attachment systems (Szepeswol & Simpson, 2019). The impact of these dynamics on the daughter can be carried with her throughout her life, potentially affecting her own development and behavior. These factors shape the complex dynamics of parenting, impacting the father-daughter relationship, and potentially developmental milestones (Byrd-Craven et al., 2012).

Paternal behaviors are thought to impact the developmental trajectory of their daughters. Fathers serve as the first opposite sex interaction daughters engage in, which may serve as a proxy for future interactions. Much research has investigated the positive impacts of father involvement, such as increased independence, self-regulation skills (McWayne et al., 2013), and stronger attachment styles (Brown et al., 2012). Conversely, a large literature exists on the negative impacts associated with father absence, such as promoting earlier maturation and negative attachment styles (Belsky et al., 2012). This unique effect of limited paternal involvement presents a novel research trajectory on how paternal behaviors may impact daughters differently compared to overall parental investment.

Life History Theory (LHT) forms the basis of how certain factors, such as age, maturity, reproductive effort, and parental investment influence our relationships, individual reproductive success, and offspring behavior (Nettle & Frankenhuis, 2020). Organisms allocate resources across fundamental tasks, which result in resource allocation being devoted to one task at the expense of another (Del Giudice et al., 2015). In humans, the patterns of these trade-offs reflect one's life history strategy. Parental investment may initiate changes associated with sexual maturation, where lower parental investment may promote earlier sexual maturation (i.e., *faster life-history*), while higher parental investment may promote a more delayed sexual maturation (i.e., *slower life-history*) (Ellis et al., 2009). This effect, known as the Psychosocial Acceleration Theory, suggests that early exposure to unpredictability or harshness may accelerate maturation in offspring (Ellis et al., 2022). For instance, an absent father and lack of parental investment is thought to negatively impact a daughter's later mating choices and pair bonds (Belsky et al., 2012; Ellis et al., 2009). Early developmental stress and father absence is associated with a life history approach that is focused on quantity over quality with an emphasis on maximizing fitness with minimal parental investment (Webster et al., 2014). This illustrates how possible environmental factors in early life stages shape later reproductive strategies (Webster et al., 2014). Moreover, early childhood experiences may encode a developmental response system, or attachment, in children that represents the expectations of the environment (Szepeswol & Simpson, 2019). This system may serve as a proxy of the environmental cues that may facilitate life history strategies. For instance, slower life history strategies are associated with secure attachment styles

in stable and secure environments, while insecure attachment systems are associated with a faster life history strategy in unstable environments, with each calibrated to maximize fitness accordingly (Belsky et al., 1991). This may suggest that attachment styles are associated with other relevant parental behaviors, such as parental strictness and support.

Similarly, the Daughter-Guarding hypothesis highlights how daughters are more subjected to guarding, with fathers being more protective over daughters than they are with their sons. Considering that males do not have an obligatory parental investment (i.e., 9-month gestation), it may be in the best interest of parents to delay the sexual activity of their daughters to ensure a higher inclusive fitness and minimize the cost associated with paternal uncertainty experienced by males (Perilloux et al., 2008; Trivers, 1972). This protective behavior can sometimes stem to strict parenting, where a daughter's clothing choices and curfews have evolved from the father's 'protections' over their daughter's mating behavior and mate value (Sundin & Shackelford, 2020). Indeed, in order to protect the mate value of their daughters, fathers use strict parenting styles and utilize guarding practices to prevent their daughters from some social interactions (Flinn, 1988). In reference to cultural 'norms', daughters are more subject to protective behaviors in the form of arranged marriages, which have been shown to occur in around 69% of cultural societies, impacting daughters' mating choices and relationship views (Sundin, 2022).

Furthermore, economic factors can affect a father's upbringing and attitude towards his offspring. Research has widely shown that fathers with a low socioeconomic background tend to raise their daughters in a stricter environment (i.e., harsher, punitive) compared to those with a high socioeconomic background, which is often associated with more authoritative parenting (i.e., promoting warmth, independence) (Jeon & Nepl, 2016). Parents from a lower SES background also tend to provide less emotional support and warmth to their children (Labelle et al., 2024). This could be due to various factors, such as economic stress and a lack of social support from the father's parents, which in turn creates an absence of nurturing during adolescence, leading to strict behaviors towards his daughter. This can result in a stressed environment, often expressed through controlling or negative behavior. These relationships are thought to have downstream effects on the psychobiology of daughters. Negative relationships with fathers promote sensitivity to emotional control, lower inhibition, and higher baseline cortisol levels, reflecting a higher stress response system (Byrd-Craven et al., 2012). Other socioeconomic factors, such as education, are thought to stem negative relationships with offspring. Highly educated fathers better comprehend their child's personality, enabling a more nuanced approach to parenting, fostering healthier relationships, and reducing the likelihood of negative reflective behavior (Keshavarz & Baharudin, 2013). This may imply that educated fathers are raised in positive social environments, and therefore, have a greater understanding of the importance of affectionate and supportive behavior in a child's development.

Religiosity can promote behaviors that are in-line with a slower life-history trajectory. Religious individuals promote family values, extended prosociality, condemn promiscuity, and invest more in the family system (Baumard & Chevallier, 2015). Similarly, political orientation has been shown to be affected by parenting

systems, such as being aware of potential new threats that parents may face. Being aware of threats that may affect one's own children is associated with political orientation styles that are in line with social conservatism. Individuals that are more conservative may be more likely to regulate the behavior of their children, promoting monogamy and discouraging promiscuity (Kerry & Murray, 2021).

The current study aimed at exploring life history factors and the daughter-guarding hypothesis by examining paternal behaviors, such as attachment, control, support, and protection. Borrowing from life history theory, we can hypothesize that behaviors associated with slower life-history strategies (i.e., father's education, religiosity), and political orientation would be associated with stronger attachment, control, support, and protection to their daughters. Considering that daughters who are more attractive may be more likely to be guarded by their fathers, we also examined the role of daughter's self-perceived attractiveness and paternal behaviors. Therefore, in the current studies we explored daughter-father (Study 1) and father-daughter (Study 2) relationships and investigated the associations between fathers' life history factors and their paternal behaviors.

Study 1

Method

Participants

One-hundred and twenty-three undergraduate females ($M=21.8$, $SD=2.63$) from the University of Plymouth participated in this online study. The sample demographics were White ($N=111$), Mixed-Ethnicity ($N=6$), Asian ($N=5$), Black ($N=3$), Other ($N=1$), and one participant preferred not to disclose their ethnicity ($N=1$).

Materials and Procedure

Upon consent, participants completed a series of demographic questions (e.g., age, ethnicity) and scales identifying their relationship with their father. These scales included questions about how daughters perceive their father's control, support, and protection, and overall daughter-father attachment. We measured daughter-father attachment, support, and protection using 3-item scales for each construct, and control using a 2-item scale. All responses were measured using a 1–5 Likert scale (see Appendix). Attachment items included statements, such as, "How often would you say your father expresses his love and affection for you through words or actions?"; Control: "How often does your father express disapproval or try to influence your choices, such as career, social life, and relationships?"; Support: "How would you describe the overall impact of your fathers support on your self-esteem?"; and Protection: "Can you recall instances in which your father has taken steps to ensure your safety and well-being?". The scales used for attachment (*Cronbach's a*=0.85), control (*Cronbach's a*=0.74), support (*Cronbach's a*=0.90), and protection (*Cronbach's a*=0.87), all showed good reliability. Father's education was measured by asking, "What was the highest level

of education your father achieved?”, with response options ranged from “1 = less than high school” to “7 = doctorate”. Daughters reported their fathers’ political orientation on a 1–7 Likert scale, where “1 = very liberal” and “7 = very conservative”. Religiosity was measured by asking daughters, “How religious would you say your father is/was?”, where response options were “1 = not at all” to “5 = a great deal”.

Results

To test the hypothesis that life history factors were associated with the daughter– father relationship, we used Pearson’s correlations. Table 1 presents the zero-order correlations between the life history factors (e.g., father’s education, father’s religiosity), father’s political orientation, and daughter’s self-perceived attractiveness on the daughter– father relationship, control, support, and protection. Father’s education was positively associated with daughter’s attachment, support, and protection. Father’s religiosity was negatively associated with daughter’s protection, and the associations between father’s religiosity and attachment, control, and support were not significant. Father’s political orientation was not significantly associated with any of the dependent variables. Daughter’s self-perceived attractiveness was positively associated with attachment, support, and protection, and negatively associated with control. Lastly, daughter’s age was positively correlated with support and negatively correlated with protection. For the dependent variables, attachment, support, and protection were positively correlated with each other, but they were negatively correlated with control.

To further understand the relationships between life-history factors and paternal behaviors, linear regressions were used to predict attachment, control, support, and protection. Father’s education, religiosity, political orientation, daughter’s self-perceived attractiveness, and daughter’s age were entered as predictors. Table 2 presents the regression models for the outcome variables. The regression models were significant for attachment, support, protection, and marginal for control. Fathers with more education and who had daughters that were more attractive had a stronger

Table 1 Zero-order correlations between daughter–father relationships

	1	2	3	4	5	6	7	8
1. Father’s education								
2. Father’s religiosity	0.00							
3. Father’s political orientation	−0.01	0.03						
4. Self-perceived attractiveness	0.15	−0.09	−0.01					
5. Attachment	0.30***	−0.09	0.02	0.36***				
6. Control	−0.13	0.16	0.10	−0.20*	−0.26**			
7. Support	0.32***	−0.08	0.00	0.37***	0.89***	−0.32***		
8. Protection	0.28**	−0.19*	−0.05	0.31***	0.81***	−0.31***	0.82***	
9. Daughter’s Age	−0.16	0.10	0.12	−0.03	−0.06	0.18*	−0.07	−0.18*

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 2 Regression models presenting unstandardized betas predicting attachment, control, support, and protection in daughter-father relationships

	Attachment	Control	Support	Protection
Father's education	0.16*	-0.08	0.18**	0.15**
Father's Religiosity	-0.07	0.08	-0.05	-0.19*
Father's political orientation	0.03	0.10	0.007	-0.03
Self-perceived attractiveness	0.36***	-0.12	0.40***	0.28**
Age	-0.002	0.04	-0.006	-0.05
R^2	0.20	0.08	0.21	0.19
F	5.98	2.27	6.37	5.63
p	<0.001	0.05	<0.001	<0.001

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

attachment style and provided more support and protection to their daughters. For the model predicting paternal control, there were not any significant predictors.

Discussion

Study 1 investigated the daughter-father relationship using a life history framework. We examined the relationship between father's life history and parental behaviors (i.e., attachment, control, support, and protection) toward their daughters. Overall, fathers who were more educated had stronger attachments to their daughters and provided more support and protection. Daughters who reported their fathers as more religious received less protection from them. Additionally, daughters who self-reported higher levels of attractiveness were more likely to have stronger attachments to their fathers and were more likely to received support and protection from them.

The role of fathers' education, religiosity, and political orientation in parenting their daughters reflects an underlying role of life-history factors in paternal behaviors. Slower life history strategies are associated with prioritizing learning (Chang et al., 2021), promoting religious behaviors (Baumard & Chevallier, 2015), and more conservative ideologies (Kerry & Murray, 2021). In the current study, we find support that education, religion, and political conservatism are associated with paternal investment, in the form of attachment, support, and protection. However, in the case of fathers' religiosity, the relationship was in the negative direction, which contrasts with past research suggesting that religiosity is associated with more involvement in the daughter-father relationship (Lynn et al., 2016). The findings support research on life-history perspectives in human parental behaviors suggesting that slower life history-oriented individuals devote more investment in the form of developing stronger attachment styles and guarding their daughters (support, protection). Parental support is instrumental in predicting future social support in the developmental trajectory of offspring (Lukaszewski, 2015). The current findings extend the notion that slower life history strategies in fathers predict more investment towards their daughters.

Daughters who rated themselves higher on attractiveness were more likely to receive protection, support, and be more attached to their fathers. The association between self-perceived attractiveness and paternal behaviors may be due to women's mate value and the unique risks faced by young women. Young women's increased risk of being victims of sexual assault, such as rape—a constant evolutionary threat—may prompt parents to serve as proximate influences on their daughters' behaviors to prevent sexual victimization (Perilloux et al., 2008). Furthermore, mate value is intricately associated with self-perceived attractiveness. Any negative effect on her mate-value may damage her long-term reproductive opportunities and her parents' reproductive success if it prevents her from finding future mating opportunities (Perilloux et al., 2008). In line with the daughter-guarding hypothesis, parents can guard their daughters by protecting them and preventing them from engaging in early sexual behaviors, which can have negative consequences to her sexual reputation. Some research has shown that fathers engage in restrictive practices to prevent their daughters from socializing and interacting with the opposite sex (Flinn, 1988).

Nonetheless, life-history factors in fathers were not found to be associated with explicit control of their daughter's behaviors. This may suggest that daughters who received stronger attachments and more support and protection from their fathers promoted behaviors that did not warrant control. Considering that attachment, protection, and support negatively predicted control behaviors, it may suggest a trade-off between receiving supportive paternal interactions and controlling behaviors from fathers. In conclusion, Study 1 highlights the important factors involved in daughter-father relationships. Notably, daughters with more educated fathers demonstrated stronger attachment, and they reported more support and protection from them.

Study 2

Participants

Three-hundred and four men ($M=46.8$, $SD=7.83$) recruited from Prolific website participated in this online study. The sample demographics included White ($N=266$), Asian ($N=18$), Black ($N=13$), Mixed ($N=6$), and Other ($N=1$).

Method

Materials and Procedure

We measured father-daughter attachment, support, and protection using 3-item scales for each construct, and control using a 2-item scale. All responses were measured using a 1–5 Likert scale. Attachment items included statements, such as, “How comfortable do you think your daughter feels talking to you about personal issues or concerns?”; Control: “How often do you express disapproval or try to influence your daughter's choices, such as career, social life and relationships?”; Support: “How

would you describe the overall impact of your fatherly support on your daughter's self esteem?; and Protection: "Have you actively provided guidance on personal safety and precautionary measures? e.g. this could be guidance related to relationships, career or general safety concerns. The reliability for the scales were the following: attachment (*Cronbach's a*=0.71), control (*Cronbach's a*=0.51), support (*Cronbach's a*=0.72), and protection (*Cronbach's a*=0.59). Procedure was identical to Study 1.

Results

Table 3 presents the Pearson's correlations across the variables. Education was negatively associated with political orientation, suggesting that fathers who were more conservative obtained less education. Additionally, fathers who were educated and more conservative reported higher levels of income, while conservative men reported weaker attachments to their daughters. Fathers who reported more income also reported stronger attachments to their daughters. Across the dependent variables, attachment, support, and protection were positively associated with each other, and there was a weak association between protection and control. Support and attachment were not significantly associated with control behaviors towards daughters.

Linear regression models were run to investigate which factors best predicted attachment, control, support, and protection. Table 4 presents the linear regression models, and attachment was the only significant model. Fathers who reported more income were more likely to be attached to their daughters, while political orientation negatively predicted that relationship, where men who were more conservative were less likely to be attached.

Discussion

Study 2 examined life-history factors in father-daughter relationships by focusing on fathers' reported levels of attachment and behaviors directed to their daughters. Like Study 1, fathers who had stronger attachments to their daughters exhibited more support and protection, and there was a small association between protection and

Table 3 Zero-order correlations between father-daughter relationships

	1	2	3	4	5	6
1. Education						
2. Political orientation	-0.12*					
3. Income	0.20***	0.14**				
4. Attachment	-0.05	-0.11*	0.12*			
5. Control	0.03	0.06	-0.02	0.06		
6. Support	-0.05	-1.00	0.10	0.71***	0.10	
7. Protection	-0.06	-0.04	0.02	0.45***	0.12*	0.49***

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4 Regression models presenting unstandardized betas predicting attachment, control, support, and protection in father-daughter relationships

	Attachment	Control	Support	Protection
Education	-0.05	0.01	-0.03	-0.008
Income	0.12**	-0.02	0.08	0.02
Political orientation	-0.06**	0.03	-0.009	-0.01
R^2	0.04	0.006	0.02	0.03
F	4.61	0.69	1.72	0.22
p	0.003	0.55	0.16	0.82

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

controlling behaviors. These findings may indicate that fathers with stronger attachments may incorporate positive parenting strategies to their children, which is in line with theoretical approaches suggesting that environmental stability may facilitate a slower life history strategy (Belsky et al., 1991; Webster et al., 2014).

Like Study 1, we investigated the role of life-history factors in paternal behaviors. Fathers' income was associated with forming stronger attachments to their daughters, while political orientation negatively predicted attachment. No other significant predictors emerged across the models for support, protection, and control.

General Discussion

Across both studies, we show that life-history factors are associated with father-daughter relationships. In Study 1, as reported by daughters, fathers with more education were more attached to their daughters, and they provided more support and protection, while fathers' religiosity negatively predicted protection. Furthermore, attachment was positively associated with support and protection but not control. Similar findings across paternal behaviors were shown in Study 2. Attachment, support, and protection were positively associated with each other, while there was a weak correlation between protection and control. In Study 2, fathers' income was associated with a stronger attachment to their daughters, but there were no significant associations across support, protection, and control. These findings show some evidence that attachment is associated with support and protection but not control. Further, they suggest that some life-history factors are associated with positive paternal behaviors, most notably education in Study 1 and income in Study 2.

The findings are supportive of psychosocial acceleration theory, which posits that early exposure to harshness cues orients individuals to pursue a faster life history orientation (Cabeza de Baca & Ellis, 2017). Educational attainment and income levels in fathers were positively associated with prosocial behaviors to their daughters, most notably attachment, support, and protection in Study 1 and attachment in Study 2. Conversely, lower levels of fathers' education and income were associated with fewer prosocial behaviors. Early cues of resource unpredictability (e.g., income) may predict lower parental investment (Ellis et al., 2022), such as weaker attachment

systems. These early cues of immediate (i.e., parental interactions) environments may signal to daughters that ecological conditions are unpredictable, thereby shaping attachment styles that are calibrated to their immediate surroundings (Ellis et al., 2022).

Human attachment styles are mechanisms that are meant to detect cues from parents, the environment, and they can facilitate working models in social interactions (Chisholm et al., 1993). Life history theory has been used to explain variation in attachment, such that individuals along a slower life history strategy may develop stronger attachments and promote positive behaviors, while individuals along a faster life history strategy may develop weaker attachments. Further, this may suggest that environmental stability may drive individuals to invest more resources in parental investment, and individuals who have faced uncertainty may invest less in parental investment (Belsky et al., 2012). The use of life history theory in psychology (LHT-P) considers life-history strategies as predictors of developmental outcomes, along a *fast-slow* continuum, rather than traits measured as outcomes. This approach differs from life history theory in ecology, where the broader focus is on trade-offs in reproduction, growth, and maintenance (Sear, 2020). Moreover, it is unclear whether fathers' life history traits and environmental harshness are directly responsible for perceptions of attachment, support, protection, and control. It may be that fathers are genetically inclined to demonstrate fast-life histories and through heritability, their daughters display them as well, reflecting a shared life history trajectory. These conceptual uncertainties have led to increased criticisms of how environmental harshness, via mortality-morbidity risk or unpredictability, can lead to the adoption of faster life history strategies (Baldini, 2015; Sear, 2020; Stearns & Rodrigues, 2020), especially considering variation within species.

The current studies showed that attachment was associated with more positive behaviors, such as providing support and protection in the paternal-daughter relationship. Moreover, attachment was also associated with being less controlling. These findings support past research indicating that paternal investment is associated with many behaviors that can affect the developmental trajectory of daughters (Belsky et al., 1991; Byrd-Craven et al., 2012). It also indicates that attachment styles may be a product of the amount of resources and investment offspring receive from their parents, as attachment was associated with father's education in Study 1 and father's income in Study 2. Attachment styles are thought to be internal working models that are highly responsive to environmental cues, and they may be associated with life history factors (Del Giudice, 2009).

The current study is limited in that it mainly attempted to explore associations between life-history factors and daughter-father relationships. It did not collect information as to other markers of developmental trajectories, such as pubertal timing, sexual history, and life history effects of menarche in daughters. Research has shown that father absence and family dynamics affect the pubertal milestones of females, which may also have downstream consequences on their overall developmental trajectory (i.e., early sexual maturation, menstruation) (Belsky et al., 2010). Future research should take these variables into consideration, as it taps into parental guarding behavior and psychosocial acceleration. Further, we relied on self-reported measures of life-history factors, such as education, income, religiosity, and political

orientation. Perhaps, future studies can utilize established scales of life-history and early adversity on predicting paternal behaviors directed to daughters. Lastly, the generalizability and comparability of the study could be improved by incorporating established psychometric scales, such as attachment and life-history scales, to better capture different types of attachment styles related to fathers' life-history strategies.

To conclude, attachment in the daughter-father and father-daughter relationship was associated with more support, protection but less control. These findings point to the important dynamic between daughters and their fathers, shining insight into the daughter guarding hypothesis. Further, the findings highlight the importance of fathers' life history strategies and how they implement strategies in parenting their daughters. Understanding how these unique relationships may contribute to developmental milestones is an avenue of future research.

Appendix

Survey Items for Daughters

Attachment

1. How comfortable do you feel talking to your father about personal issues or concerns?
 1. Extremely uncomfortable
 2. Somewhat uncomfortable
 3. Neither comfortable nor uncomfortable
 4. Somewhat comfortable
 5. Extremely comfortable

2. How would you rate the emotional support and understanding you receive from your father?
 1. Extremely bad
 2. Somewhat bad
 3. Neither good nor bad
 4. Somewhat good
 5. Extremely good

3. How often would you say your father expresses his love and affection for you through words or actions?
 1. Never
 2. Sometimes
 3. About half the time
 4. Most of the time
 5. Always

Control

1. Does your father set strict rules or limitations on your behavior and activities?
 1. None at all
 2. A little
 3. A moderate amount
 4. A lot
 5. A great deal

2. How often does your father express disapproval or try to influence your choices, such as career, social life and relationships?
 1. Never
 2. Sometimes
 3. About half the time
 4. Most of the time
 5. Always

Support

1. Does your father actively listen to your concerns and provide emotional support when you need it?
 1. None at all
 2. A little
 3. A moderate amount
 4. A lot
 5. A great deal

2. How would you describe the overall impact of your father's support on your self-esteem?
 1. Terrible
 2. Poor
 3. Average
 4. Good
 5. Excellent

3. Would you say that your father has helped you overcome obstacles or achieve specific goal related milestones in your life?
 1. Never
 2. Sometimes
 3. About half the time
 4. Most of the time
 5. Always

Protection

1. Can you recall instances in which your father has taken steps to ensure your safety and wellbeing?
 1. Never
 2. Sometimes
 3. About half the time
 4. Most of the time
 5. Always

2. Has your father actively provided guidance on personal safety and precautionary measures? E.g., this could be guidance related to relationships, career or general safety concerns.
 1. Never
 2. Sometimes
 3. About half the time
 4. Most of the time
 5. Always

3. How does your father react when you're facing difficult or potentially risky situations, such as travel plans, or meeting new people?
 1. Terrible
 2. Poor
 3. Average
 4. Good
 5. Excellent

Survey Items for Fathers

Attachment

1. How comfortable do you think your daughter feels talking to you about personal issues or concerns?
 1. Extremely uncomfortable
 2. Somewhat uncomfortable
 3. Neither comfortable nor uncomfortable
 4. Somewhat comfortable
 5. Extremely comfortable

2. How would you rate the emotional support and understanding you give your daughter?
 1. Extremely bad

2. Somewhat bad
 3. Neither good nor bad
 4. Somewhat good
 5. Extremely good
3. How often would you say you express love and affection for your daughter through words or actions?
1. Never
 2. Sometimes
 3. About half the time
 4. Most of the time
 5. Always

Control

1. Do you set strict rules or limitations on your daughter's behavior and activities?
 1. None at all
 2. A little
 3. A moderate amount
 4. A lot
 5. A great deal
2. How often do you express disapproval or try to influence your daughter's choices, such as career, social life and relationships?
 1. Never
 2. Sometimes
 3. About half the time
 4. Most of the time
 5. Always

Support

1. Do you actively listen to your daughter's concerns and provide emotional support when it's needed?
 1. Not at all
 2. A little
 3. A moderate amount
 4. A lot
 5. A great deal
2. How would you describe the overall impact of your fatherly support on your daughter's self-esteem?
 1. Terrible

2. Poor
 3. Average
 4. Good
 5. Excellent
3. Would you say that you have helped your daughter overcome obstacles or achieve specific goal related milestones in her life?
1. Definitely not
 2. Probably not
 3. Might or might not
 4. Probably yes
 5. Definitely yes

Protection

1. Can you recall instances in which you have taken steps to ensure your daughter's safety and well-being?
 1. Definitely not
 2. Probably not
 3. Might or might not
 4. Probably yes
 5. Definitely yes
2. Have you actively provided guidance on personal safety and precautionary measures? E.g., this could be guidance related to relationships, career or general safety concerns.
 1. Never
 2. Sometimes
 3. About half the time
 4. Most of the time
 5. Always
3. How do you react when your daughter is facing difficult or potentially risky situations, such as travel plans, or meeting new people?
 1. Terrible
 2. Poor
 3. Average
 4. Good
 5. Excellent

Author Contribution Author Contribution: Conceptualization: R.G., E.W., S.P., F.P; methodology and data collection: E.W., F.P., Investigation: E.W., formal analysis: R.G., F.P., writing—original draft preparation: R.G., E.W., writing—review and editing: R.G., S.P., F.P.

Funding None.

Data Availability No datasets were generated or analysed during the current study.

Declarations

Ethical Approval Each member of the team involved in data collection adhered to the ethical principles of their respective Institutional Review Boards and received approval. Data collection was conducted in accordance with the Declaration of Helsinki as it pertains to research with human participants.

Informed Consent Informed consent was obtained from all subjects involved in the study.

Conflict of interest The authors declare no competing interests.

Clinical Trial Number Not applicable.

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