

Parental Bonding and Empathy in University Students: Demographic Analysis

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ABSTRACT

The aim of this research was to examine the demographic influence on the parental bonding and empathy in university students. Using convenient sampling, a sample size of 482 was achieved. Data were gathered using the Parental Bonding Instrument (PBI), the Interpersonal Reactivity Index (IRI), and a demographic questionnaire. Neural network analysis and descriptive statistics were performed with SPSS-21. The study results of normalized importance indicated that demographic factors have a significant predictive impact on parental bonding. Specifically, father occupation was the most significant predictor, closely followed by mother education, birth order, socioeconomic status, father education, gender, age, number of siblings' residential area, and family system. Further, demographic factors have been shown to have a significant predictive impact on empathy. Specifically, mother education was the most important predictor, followed by father education and career, gender, age, residential status, socioeconomic level, family structure, and number of siblings. The findings demonstrated that among university students, parental bonding and empathy were most strongly influenced by parental education and occupation, particularly the mother's education. Factors related to family structure, such as siblings, birth order, and place of residency, had little effect, but gender and age had considerable effects. This emphasizes how important socioeconomic class and family background are in forming emotional attachment and empathy.

Keywords: Parental Bonding, Empathy, University Students, Demographic Analysis

INTRODUCTION

University students sometimes have to master novel social situations and relationships, balance between their personal and academic lives, and create their identity (Arnett, 2000). Among other parental bonding is an important factor. The current study was conducted to foresee the parental bonding and empathy in university students and how different demographic influence on them. First look at the construct of parental bonding and empathy.

Childers (2010) defined parental bonding as the physical as well as emotional link that develops between a mother- children from birth. It improve one's quality of life and the love, pity, protection, patriotism, obligation, and concern that parents feel for their child define the emotional bond between them. Further, Warmth, affection, attentiveness, and engagement are characteristics of strong parental attachment. Constant emotional support, caring behavior, and effective communication are typically indicative of secure parental bonding (Bowlby, 1982). According to Ainsworth (1979), these relationships foster attachment and emotions of security, both of which are

essential for normal emotional development. On the other hand, inadequate bonding may manifest as inconsistent parenting, overprotection, or neglect, leading to unstable attachment patterns (Parker et al., 1979).

Strong parental ties can be formed or not by a variety of factors. According to Ainsworth et al. (1978), adequate parenting fosters trust, emotional stability in children. Further, the parents' mental health plays an important role in building good bonding. The quality of the link may be impacted by parents who, because of untreated mental health difficulties, are unable to give the required emotional support (Goodman et al., 2011). Moreover, the best results in terms of bonding are related with an authoritative parenting style that is warm and structured. On the other side, solid relationships can be impeded by authoritarian and lax parenting (Baumrind, 1991). Finally, cultural norms and ideas influence parenting activities, which in turn impact the kind of parental connection. Cultural variations affect the emphasis placed on parenting as well as the creation and maintenance of ties (Rothbaum et al., 2000).

Baumrind (1966) offered three types of parental relationships, one of which falls under the following categories: love, warmth, care, and control. Baumrind (1966) asserted that parents who are indulgent are affectionate and exert less authority over their children were having permissive parenting style. Whereas parenting in an authoritarian manner attempting to plan the child's actions in a conventional, problem-solving way. When their child shows no adjustment, parents seek the child's rejection and vocally coordinate give and take, explaining to them why the strategy works. Both independent will and limited similarity are valued by the authoritative guardian. While upholding the child's wishes, the authoritative approach enforces unambiguous rules. Though they maintain strict control, authoritarian parents remain kind to their children.

Other important factor understudy was empathy in university students.

The concept of empathy was initially used in a psychological context in the early 20th century by Lipps, a German psychologist who researched optical illusions and how people see other people. Following Lipps, the term "empathy" first appeared in English psychological research, most notably in Titchener's writings around 1909 (Brothers, 1989).

Empathy is characterized by the natural ability to identify and experience another person's feelings as well as the desire to consider their well-being (Decety et al., 2016). Being able to comprehend and experience the feelings of others is known as empathy (Uzefovsky & Knafo-Noam, 2016).

There are two types of empathy: emotional and cognitive. Affective and cognitive empathy were separated by the researchers. Affective empathy is the term used to describe feelings and sensations in response to another person's emotions. The ability to identify and understand another person's emotions is known as cognitive empathy (Ratka, 2018). Finally, behavioral empathy also exist here, different kinds of behavioral matching are occasionally called empathy. This involves mimicking the gestures or facial expressions of another individual (Bavelas et al. 1987).

Higher levels of empathy seen by Yaghoubi Jami et al. (2021a) among those who had gone through comparable psychological hardship. Those who had experienced the loss of a loved one highlighted how they could relate to others in like circumstances, feeling their grief and knowing how to ease it because of their personal experience. Lastly, it can be claimed that a variety of factors influence empathic sentiments and behaviors, including group membership (Tarrant et al., 2009), power status (Tullmann, 2020), moral qualities (Delgado et al., 2005), perception of emotional state (Gallese, 2003), and similarity (Eklund et al., 2009). Now let look at how demographics influence parental bonding and empathy.

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Let's now examine how demographics affect parental bonding. The demographic understudy were gender, age, socio-economic status, number of siblings, birth order, residential type, family system, father's occupation,

father's education and mother's education. Various researches reported a difference in parental bonding or care in terms of gender (Rikhye, et al., 2008; Worthen, 2011; Sun, et al., 2010; Wilhelm, et al., 2016). According to research, teenagers and young adults have a generally positive and stable relationship with their parents. Parents are shown to have a lasting impact on their children's development (Van Wel, et al., 2002). Further, it was stated that socio-economic status determined the parental behavior towards a child (McLoyd, 1990). A study on adult perceptions of parental behavior, sibling gender, and the number of siblings was carried out. According to the results, those who had older sisters thought their parents were less concerned, whereas those who had more brothers—especially younger brothers—thought their parents were less overly protective (Kitamura, et al., 1998). On account of residential type, Since familial networks appear to be reconstituted and assuming greater importance due to the gathering of multiple generations of family members, the results imply that a decline in family ties from traditional patterns may be more advanced in rural areas than in urban ones (Bultena, 1969). Despite having different structures, the nuclear and joint family models both make substantial contributions to the foundations of human civilization. Each presents particular difficulties and delivers special benefits. Whereas the joint family places more importance on support, cultural preservation, and the well-being of the whole, the nuclear family stresses autonomy, personal development, and privacy (Hassan, 2024). The premise of this study is that parents with higher levels of education can improve their relationships with their children. Positive father-child relationships and the father's educational background are significantly positively correlated, according to correlation research. This is similarly true for positive mother-child relationships and the mother's educational background. Additionally, findings indicate a strong beneficial father-child link with a mother's educational status. All of these show that the relationship between parents and children improves with parental education (Li & Zhan, 2023).

Now consider the role demographics and empathy in university students. Gender, age, socioeconomic position, number of siblings, birth order, residential type, family structure, father's work, father's education, and mother's education were the demographics under investigation. Gender disparities in empathy have been linked to physiological maturity, according to research. As people age, their hormones differ from those of men. Oxytocin levels are higher in women, which has been linked to emotional empathy. However, testosterone levels are higher in men, which has a detrimental effect on cognitive empathy. The gender role was another element. Women's gender roles are oriented toward others, which is closely linked to empathy. But the focus of man's gender role was on equity and justice, which has nothing to do with empathy. Following the acquisition of the gender role, men and women differ in their capacity for empathy, particularly emotional empathy. (Chen, et al., 2014). Further, result also confirmed that older adults shows more empathy (Schieman & Van Gundy, 2000). In the meantime, examining the relationship between altruistic conduct and socioeconomic level, the findings indicate that empathy plays a mediating role in enhancing altruistic behavior in high socioeconomic status (Liu, et al., 2023). The socioeconomic status include the factors of education, occupation and income. Moreover, result of another study shows that compared to firstborns, middle-born children seem to be more likely to sympathize (Kalliopuska, 1984).

Objectives

To evaluate the predictive effect of demographics on parental bonding and empathy.

Rationale of the study

The emotional and social development of an individual is significantly influenced by parental attachment. Empathy—the capacity to comprehend and experience another person's emotions—is one of the fundamental emotional qualities that are fostered by a safe and nurturing parent-child bond. Young adulthood is a critical time for empathy because it supports prosocial conduct, emotional control, and positive interpersonal interactions. Students at universities are in a developmental period where they are becoming more independent and interacting with people outside of their families. The degree of prior parental connection may have a big impact on their emotional development and empathy at this point. Furthermore, this association may be further shaped by

demographic factors such gender, parental education, financial status, family structure, and birth order, underscoring the significance of contextualizing these variables.

Few studies have looked at how demographic differences impact the relationship between empathy and parental bonding in young adults in non-Western environments, especially in Pakistan, despite the importance of empathy and family dynamics. By investigating the ways in which demographic characteristics affect university students' empathy and parental attachment, this study seeks to close this gap. The results could help educators, counselors, and legislators create student- and family-centered programs that support social connectivity and emotional health.

RESEARCH METHODOLOGY

Research Design

The cross-sectional research design was used in the current study.

Sampling strategy

In this study, university students were the population. University students 19 years and above, studying full time and enrolled in undergraduate degree programs were included in the study. Student's below age 19, part-time and graduate degree program enrolled were excluded from the study. Students who mention having in-depth psychiatric conditions and/or mental incapacities likely to interfere with the adequate completion of the questionnaires were also not taken for data collection. The sample consists of a total $N = 482$ university students (male = 221, female = 261) which are drawn through convenient sampling from the University of Gujrat. These respondents were recruited from the University of Gujrat. A maximum number of respondents fulfilling the criteria were approached for a diverse and representative sample.

Instruments

The following instruments were used to collect data from respondents.

Demographic Information Form

A socio-demographic form was developed. It includes variables of age, gender, socioeconomic status, residential, family system, father occupation, father education, mother education. Understanding the characteristics of the study sample and making sure it is representative of the larger community of university students depend on gathering demographic data. This data enables examination of how different demographic factors may affect the parental attachment, empathy, and alexithymia among university students.

The Parental Bonding Instrument (PBI)

This 25-item scale was created to gauge an individual's perceived level of parental connection toward oneself (Parker et al., 1979). Kendler (1996) approved a reduced 16 item variant, which was used in the current investigation. Three measurements have been recorded for this form: protectiveness items (8,9,13,19,23); authoritarianism items (7,15,21,25); and warmth and its items (1,4,5,11,12,17, 18). Rather than the two metrics, like over-security and care, that was indicated in the scale's initial version. The Likert scale has four points: strongly unlike = 0 and highly like = 4. Each thing is graded on this scale. At 0.76 for authoritarianism, 0.80 for protectiveness, and 0.61 for warmth, the Cronbach's α values on this scale showed good reliability.

Interpersonal reactivity index (IRI)

In 1980, Davis created the Interpersonal Reactivity Index (IRI). IRI is a multifaceted assessment of empathy that uses self-report questionnaires to target an individual and discover several cognitive and affective components. The IRI was created with 28 items in total, which were divided into four subscales: personal distress, fantasy,

empathy, and perspective taking. The IRI is Likert scale, where "Describes me very well" receives the greatest rating (five points) and "Does not describe me well" receives the lowest rating (zero). This test takes 10 to 15 minutes to complete. The IRI has 0.70 to 0.8 internal consistency.

Procedure

The sample for the present research was selected through a convenient sampling technique. The sample included both boys and girls. The research was presented to the Ethical Committee for approval to make sure it satisfies ethical requirements and protects the rights of the subjects. Take permission from the university authorities for conducting research amongst students. In this study, the sampling was performed by visiting different university places like various departments, cafes, libraries, halls, and grounds. Prepare an informed consent form that clearly states the purpose of the study, the procedure involved, measures that ensure confidentiality, and that the participation is purely voluntary. The study involved a cover letter and consent form, operationally defined as follows: Ensure written informed consent is obtained from all participants before they proceed, thus aware of and in agreement to participating in the study. These included demographic questions, followed by validated instruments: the Parental Bonding Instrument and the Interpersonal Reactivity Index. Especially took permission from authors of scales for using these. For the entire period of data collection, the participants received full support; their responses were live-monitored for incomplete or ambiguous entries. All data collected were anonymized. Data collection took 4 to 6 weeks, thus providing enough time for the realization of a heterogeneous and representative sample that would ensure the robustness of the analysis relating to parental bonding and empathy in university students.

Data Analysis

Demographic analysis of empathy and parental attachment was done by applying the relevant statistical techniques of descriptive statistics and neural network analysis. Analyses on data was taken in order to form conclusions and render decisions.

Ethical consideration

The study was entirely voluntary, and participants could leave at any moment without incurring any fees. Before providing written informed consent, they were given clear and intelligible information about the goals, methods, risks, and advantages of the study. Secure storage, coding, and limited access were used to protect and anonymize personal information.

Throughout the research procedure, honesty and transparency were upheld; no deceit or manipulation of data was employed. To preserve integrity and safeguard identities, data were appropriately reported in aggregate form, securely stored, and precisely recorded.

RESULTS

The result section presents a detailed description of the statistical analysis conducted in the research. All analysis was performed using the statistical package for the social sciences (SPSS, version 24) for Windows by using descriptive statistics and neural network was run to see the impact or predictive association of demographics and parental bonding and empathy among university students. The analysis provides importance ratios and normalized importance.

The demographic characteristics of the sample (N = 482) were analyzed. It consisted of males 45.9% and females 54.1%. The age distribution showed that a majority of participants were between 18-21 years (61.0%). Regarding socioeconomic status, the majority of participants identified as middle class and having siblings ranged from 0-5 (80.7%). Residential distribution indicated that majority lived in rural areas (54.4%) and came from nuclear families (58.1%). The occupations of fathers varied across different disciplines of businessman, farming, labor,

working abroad, private/government employment, other occupations, teaching, officers, doctor and had no occupation. The educational levels of majority fathers and mothers were matriculation.

Table 1: Relative Error of Predictive influence of demographics on parental bonding (n=482)

Relative error	
Training	Testing
1.00	0.99

It gave a smaller difference of relative error of training and testing, hence indicating the model as fit in the prediction of parental bonding by demographic variables.

Table 2: Predictive Importance of Demographics on Parental Bonding (n=482)

Variables	Importance	Normalized Importance
Gender	.104	69.7%
Age	.080	53.9%
Social economic status	.141	94.2%
No. Of Siblings	.054	36.5%
Birth order	.145	97.3%
Residential	.041	27.6%
Family system	.031	20.8%
Father occupation	.149	100.0%
Father education	.108	72.5%
Mother education	.146	97.9%

The significance and normalized significance of different demographic factors in influencing or forecasting the outcome variable are shown in the table (probably from a regression or decision tree analysis). The model's strongest predictive potential was demonstrated by the father's occupation, which appeared as the most significant variable with the highest normalized relevance (100%). Other highly significant characteristics that were shown to be important included the mother's education (97.9%), birth order (97.3%), and socioeconomic position (94.2%), indicating that the outcome was significantly shaped by the background and structure of the family. There was a discernible but less significant influence, with father's education (72.5%) and gender (69.7%) having a moderate level of importance. Age (53.9%) had a less contribution to the model than the factors mentioned above. When compared to other variables, the number of siblings (36.5%), residential status (27.6%), and family system (20.8%) had the least impact on the result.

Table 3: Relative Error of Predictive effect of demographics on empathy

Relative error	
Training	Testing
0.98	0.99

The relative error of training and testing again showed small difference confirming the model and stated the fact that empathy predicted by demographic variables.

Table 4: Predictive Importance of Demographics on Empathy (n=482)

Variables	Importance	Normalized importance
Gender	.148	84.8%
Age	.102	58.2%
Social economic status	.061	34.9%
No. Of Siblings	.030	17.1%

Birth order	.042	24.0%
Residential	.069	39.3%
Family system	.032	18.4%
Father occupation	.170	97.4%
Father education	.172	98.5%
Mother education	.175	100.0%

Based on their significance and normalized importance values, the demographic factors' relative contributions to the outcome variable are displayed in the table. Mother's level of education (100%) was the model's strongest predictor, with the highest normalized relevance. Father's occupation (97.4%) and father's education (98.5%) were closely followed, suggesting that parental occupation and education had the greatest impact on the result. Additionally, gender (84.8%) had a significant impact, indicating significant variations or predictive value according to gender. In comparison to parental variables, socioeconomic status (34.9%) and residential status (37.3%) contributed to the model, albeit not as much. The moderate-to-high relevance of age (58.2%) suggested a significant but non-dominant effect. Birth order (24.0%), family system (18.4%), and number of siblings (17.1%) had the least impact, indicating that they were not significant predictors in this research.

DISCUSSION

The study was conducted to examine the demographic influence on parental bonding and empathy using parental bonding instrument and interpersonal reactivity index. To gather information from 482 university students, convenient sampling technique was employed.

The aim of the research was to determine how the role demographics in predicting parental bonding. As shown by the relative errors, the predictive model performed very well in predicting parental bonding from demographic data with almost no difference in relative error of testing and training. The most important factor in predicting parental bonding was father's occupation followed by mother's education, birth order, and socioeconomic position, father's education, gender, age, number of siblings, residential status and family system. Indeed, these findings are in line with previous researches pointing out how the education and socio-economic level of the parents impact parent-child relations. For example, Conger and Donnellan (2007) described how socioeconomic conditions influence parenting practices, which in turn affect the development of emotional maturity in children. On the same note, McLoyd (1998) argued that economic hardship affects parenting practices and child outcomes. It further showed the impact of economic factors in shaping parental relationships and the value of a high importance value attached to socioeconomic status. This discovery is amplified by a research by Bradley and Corwyn (2002) in which they argue how socio-economic status impacts on parenting styles and child development. The moderate importance of father's education and gender may be interpreted to mean they play a role in parental bonding but to a smaller degree as compared to the other demographic factors. Age, number of siblings, residential status, and family system all had relatively low importance in predicting parental bonding. This agrees with Belsky (1984), who suggested that while all these factors might influence parenting, the importance awarded to such variables was often overshadowed by such major variables like socioeconomic status and the level of parental education.

This study also predict the ways in which empathy is effected by demographic factors. The training and testing relative error difference was almost zero as discussed above. Results showing the normalized importance of demographic factors in predicting empathy in university students. Mother's level of education was the strongest predictor of empathy followed by father's occupation, father's education, gender, socioeconomic status, residential status, age, birth order, family system and number of siblings. Research indicated that better-educated mothers use more empathic parenting styles, which foster empathy (Eisenberg & Lennon, 1983). Further, Walker, Costa and Miller (2010), found out that parents' education and professional backgrounds had significant influences on their children's emotional and social competence, including empathy. Further, gender was one of the more robust predictors of empathy in the current study and previous literature showed that women have more empathy

compare to men (Rueckert & Naybar, 2008). This gender gap might be explained by the fact that women are more talkative and socialization processes present them as more empathetic. In line with age literature confirmed that with age, people become more emphatic due to several social interactions and life experiences that increase their emotional perception (Davis & Franzoi, 1991). The prediction model was also contributed by residential status, 39.3 percent, and socioeconomic status, 34.9 percent, at a less significant rate. This is supported by research conducted by Piff et al., 2010, in which it is suggested that socioeconomic status affects sympathetic behavior. People coming from a higher socio-economic background are usually more empathic because they have been exposed to a larger number of social situations. Kennedy and Kramer (2008) showed that it is specifically birth order and parental education that have a direct influence on empathy.

CONCLUSION

The results show that university students' parental attachment and empathy are significantly shaped by demographic characteristics. The best predictors among all the factors were parental education and work, especially the mother's education. This suggests that parents who have more education and steady jobs may be able to help their children develop deeper emotional relationships and more empathy.

Age and gender also had a moderate impact, suggesting that different demographic groups differed in their perceptions of parental attachment and empathy. Family structure variables including the number of siblings, birth order, family system, and residential status, on the other hand, had little influence, indicating that although they might play a role in the setting, they are not as important in predicting parental bonding and empathy levels. Overall, the findings emphasize how important parental background and socioeconomic level are to young adults' emotional and empathetic development, as well as how crucial the family environment and educational setting are in forming emotional competences.

REFERENCES

- Ainsworth, M. D. S. (1979). Attachment as related to mother-infant interaction. *Advances in the Study of Behavior*, 9, 1-51.
- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Lawrence Erlbaum Associates.
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469-480.
- Baumrind, D. (1966). Effects of authoritative parental control on child behavior. *Child Development*, 37(4), 887-907.
- Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance use. *The Journal of Early Adolescence*, 11(1), 56-95.
- Bavelas, J. B., Black, A., Lemery, C. R., Mullett, J., Eisenberg, N., & Strayer, J. (1987). Empathy and its development. *Motor mimicry as primitive empathy*, 317-338.
- Belsky, J. (1984). The determinants of parenting: A process model. *Child development*, 83-96.
- Bowlby, J. (1982). *Attachment and loss: Vol. 1. Attachment* (2nd ed.). Basic Books.
- Bradley, R. H., & Corwyn, R. F. (2002). Socioeconomic status and child development. *Annual Review of Psychology*, 53, 371-399.
- Brothers, L. (1989). A biological perspective on empathy. *American Journal of Psychiatry*, 146(1), 10-19.

- Bultena, G. L. (1969). Rural-urban differences in the familial interaction of the aged. *Rural Sociology*, 34(1).
- Chen, W., Lu, J., Liu, L., & Lin, W. (2014). Gender differences of empathy. *Advances in Psychological Science*, 22(9), 1423.
- Childers, L. B. (2010). Parental bonding in father-son relationships. *Senior Honors Theses*. 115.
<https://digitalcommons.liberty.edu/honors/115>
- Conger, R. D., & Donnellan, M. B. (2007). An interactionist perspective on the socioeconomic context of human development. *Annual Review of Psychology*, 58, 175-199.
- Davis, M. H. (1980). Interpersonal reactivity index.
- Davis, M. H. (1996). *Empathy: A social psychological approach*. Westview Press.
- Davis, M. H., & Franzoi, S. L. (1991). Stability and change in adolescent self-consciousness and empathy. *Journal of Research in Personality*, 25(1), 70-87.
- Decety, J., Bartal, I. B. A., Uzefovsky, F., & Knafo-Noam, A. (2016). Empathy as a driver of prosocial behaviour: highly conserved neurobehavioural mechanisms across species. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 371(1686), 20150077.
- Delgado, M. R., Frank, R. H., & Phelps, E. A. (2005). Perceptions of moral character modulate the neural systems of reward during the trust game. *Nature neuroscience*, 8(11), 1611-1618.
- Eisenberg, N., & Lennon, R. (1983). Sex differences in empathy and related capacities. *Psychological Bulletin*, 94(1), 100-131.
- Eklund, J., Andersson-Stråberg, T., & Hansen, E. M. (2009). "I've also experienced loss and fear": Effects of prior similar experience on empathy. *Scandinavian journal of psychology*, 50(1), 65-69.
- Gallese, V. (2003). The manifold nature of interpersonal relations: the quest for a common mechanism. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences*, 358(1431), 517-528.
- Goodman, S. H., Rouse, M. H., Connell, A. M., Broth, M. R., Hall, C. M., & Heyward, D. (2011). Maternal depression and child psychopathology: A meta-analytic review. *Clinical Child and Family Psychology Review*, 14(1), 1-27.
- Hassan, M. J. (2024). A philosophical exploration on family: Nuclear vs joint. *The Academic: International Journal of Multidisciplinary Research*, 2(7), 257-266.
- Kalliopuska, M. (1984). Empathy and birth order. *Psychological reports*, 55(1), 115-118.
- Kendler, K. S. (1996). Parenting: a genetic-epidemiologic perspective. *The American journal of psychiatry*, 153(1), 11-20.
- Kennedy, J. H., & Kramer, L. W. (2008). Improving reading comprehension through cooperative learning. *Journal of Educational Research*, 79(3), 127-133.
- Kitamura, T., Sugawara, M., Shima, S., & Toda, M. A. (1998). Relationship of order and number of siblings to perceived parental attitudes in childhood. *The Journal of social psychology*, 138(3), 342-350.

- Li, C., & Zhan, Y. (2023). The influence of parents' educational background on parent-child relationship. In SHS Web of Conferences (Vol. 180, p. 02034). EDP Sciences.
- Liu, X., Zhang, Y., Chen, Z., Xiang, G., Miao, H., & Guo, C. (2023). Effect of socioeconomic status on altruistic behavior in Chinese middle school students: Mediating role of empathy. *International journal of environmental research and public health*, 20(4), 3326.
- McLoyd, V. C. (1990). The impact of economic hardship on Black families and children: Psychological distress, parenting, and socioemotional development. *Child development*, 61(2), 311-346.
- McLoyd, V. C. (1998). Socioeconomic disadvantage and child development. *American Psychologist*, 53(2), 185-204.
- Parker, G., Tupling, H., & Brown, L. B. (1979). A parental bonding instrument. *British Journal of Medical Psychology*, 52(1), 1-10.
- Parker, G., Tupling, H., & Brown, L. B. (1979). A parental bonding instrument. *British Journal of Medical Psychology*, 52(1), 1-10.
- Piff, P. K., Kraus, M. W., Côté, S., Cheng, B. H., & Keltner, D. (2010). Having less, giving more: The influence of social class on prosocial behavior. *Journal of Personality and Social Psychology*, 99(5), 771- 784.
- Ratka, A. (2018). Empathy and the development of affective skills. *American Journal of pharmaceutical education*, 82(10), 7192.
- Rikhye, K., Tyrka, A. R., Kelly, M. M., Gagne Jr, G. G., Mello, A. F., Mello, M. F., ... & Carpenter, L. L. (2008). Interplay between childhood maltreatment, parental bonding, and gender effects: Impact on quality of life. *Child abuse & neglect*, 32(1), 19-34.
- Rothbaum, F., Weisz, J. R., Pott, M., Miyake, K., & Morelli, G. (2000). Attachment and culture: Security in the United States and Japan. *American Psychologist*, 55(10), 1093-1104.
- Rueckert, L., & Naybar, N. (2008). Gender differences in empathy: The role of the right hemisphere. *Brain and Cognition*, 67(2), 162-167.
- Schieman, S., & Van Gundy, K. (2000). The personal and social links between age and self-reported empathy. *Social psychology quarterly*, 152-174.
- Sun, Q. W., Ng, K. M., & Guo, L. (2010). The link between parental bonding and adult attachment in Chinese graduate students: Gender differences. *The Family Journal*, 18(4), 386-394.
- Tarrant, M., Dazeley, S., & Cottom, T. (2009). Social categorization and empathy for outgroup members. *British journal of social psychology*, 48(3), 427-446.
- Tullmann, K. (2020). Empathy, power, and social difference. *The Journal of Value Inquiry*, 54(2), 203-225.
- Uzefovsky, F., & Knafo-Noam, A. (2016). Empathy development throughout the life span. In *Social cognition* (pp. 89-115). Routledge.
- Van Wel, F., Ter Bogt, T., & Raaijmakers, Q. (2002). Changes in the parental bond and the well-being of adolescents and young adults. *Adolescence*, 37(146), 317.
- Walker, L. J., Costa, M., & Miller, J. (2010). Developmental changes in moral reasoning across the adult lifespan. *Developmental Psychology*, 46(4), 829-834.

Wilhelm, K., Gillis, I., & Parker, G. (2016). Parental bonding and adult attachment style: The relationship between four category models. *Int J Womens Health Wellness*, 2(1), 2474-1353.

Worthen, M. G. (2011). Gender differences in parent–child bonding: Implications for understanding the gender gap in delinquency. *Journal of Crime and Justice*, 34(1), 3-23.

Yaghoubi Jami, P., Walker, D. I., & Thoma, S. J. (2021a). Young adults' empathic responses to others in psychological pain as compared to physical pain: does prior experience of pain matter? *Current Psychology*, 1–22.