

Effect of birth type, gender on psychological resilience

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ABSTRACT

Introduction: Every human being has experienced different stressful situations or hardships sometime in their life. For babies born via C-section this hardship can start at the time of birth. Over the last 10 years there has been an increase in the Cesarean birth type from 8.5% in 2005-06 to 17.5% in 2015-16. Past research has shown the difference in physiological development, increased risk of obesity and asthma, behavioral difficulties in children and adults born via cesarean birth type. **Method:** The present study aims to study whether there are any birth types and gender differences in Psychological resilience among adults. Online and in-person survey method was used to collect the data of 220 participants through snowball sampling. Resilience Scale (RS) by Wagnild and Young (1993) was used to measure Psychological resilience. **Results:** 173 participants reported that they were born with Vaginal Birth (78.63%) and 47 with Cesarean Section Birth (21.36%). There were 75% female (N = 165) participants and 25% male (N = 55) participants in this study. The Skewness and Kurtosis were calculated through SPSS 23rd version, which revealed the data was normally distributed. Thus, hypotheses were tested through Univariate Analysis of Variance. The mean difference between Vaginal Delivery (139.01) and Cesarean Section (136.82) was 2.37. The mean difference between female (137.82) and male (140.64) scores in Resilience Scale is 2.82. The test results of One way ANOVA revealed that there no significant differences in Psychological resilience of the participants based on their birth type ($F(1, 218) = .65, ns$) and gender ($F(1, 218) = 1.28, ns$). **Conclusion:** 1) There was no difference in Psychological resilience among Indian adults born with Vaginal Delivery and Cesarean Section delivery. 2) Male and female didn't differ in their Psychological resilience.

Keywords: Vaginal Delivery, Cesarean Delivery, Psychological Resilience

Psychological resilience is broadly defined as an ability, capacity of the individual to bounce back to prestressful state; that is coping with the situation effectively. People who are resilient tend to overcome effects of trauma, stress more easily and quickly compare to people who lack (Baumgardner, Masten, 2004). Since early research in 1960's till now numerous researchers have tried to explain it, factors that facilitate resilience and most importantly factors that can hinder the development of resilience. (Masten, 2001; Rutter 1990; Southwick, Bonanno, Masten., Panter -Brick , & Yehuda, (2013)) The protective factors at individual level are health, competence, positive coping, self -esteem, at

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Received: December 13, 2020; Revision Received: February 13, 2021; Accepted: March 03, 2021

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sociocultural level connectedness with family, caring mentors, supportive community (Ahern, 2006). The risk factors at the individual level can be risky behavior, early developmental traumas, at the environmental it can be level disasters, migration, and at societal it can be level culture, dangerous neighborhood, lack of opportunities for growth (Ahern, 2006; Feder, Nestler, Westphal, & Charney, 2010).

Psychological resilience

The Latin verb “Resilire” means to leap back. Concept taken from physics explains resilience as ability to recover its size and form after deformation (Fletcher & Sarkar, 2013). In 1990 Wagnild and Young identify resilience as personality characteristic that enhances individual adaptation. Based on this definition they developed Resilience Scale. This 25 item scale has two dimensions 1. Personal Competence and 2. Acceptance of self and life. After a qualitative study with 24 women who had adjusted to loss. The five factors emerged after analysis: (1) Equanimity or a balanced perspective of life experiences, (2) Perseverance or persistence in the face of adversity, (3) Self-reliance or a belief in one’s capabilities, (4) Meaningfulness or the realization that individual contributions are valued and (5) Existential aloneness (Scoloveno, 2017; Wagnild & Young, 1993). There has been a shift in conceptualizing resilience over the period of time. The paradigm has shifted from looking for risk factors to identify strengths to build resilience (Richardson, 2002). The current trend of biological model postulates the need to understand the role of genetics, neurobiology, changing neural pathways due to long lasting trauma. Studies have established that individuals with and without PTSD have different brain functioning and the way they respond to stressful situation. The multimodal nature of resilience has established the interaction between environmental factors, physiological factors and trait resilience. (Seligowski, Hill, King, Wingo & Ressler, 2020). Infancy is a critical period for development of stress response. Trauma in these early days can have lifelong impact on the way stressful situation are faced. This is a crucial period to develop secure attachment, emotional regulation and brain plasticity to learn about safety and threat (Feder, Fred-Torres, Southwick & Charney, 2019); As reported by Seligowski *et al* (2020) there is need to explore the role of various physiological aspects and its effect on developing and maintenance of resilience.

Birth type

Child birth is a difficult process for both mother and child. Cesarean deliveries are lifesaving surgeries. In recent years, it has been observed that the number of births with cesarean deliveries has increased up to 20-65 % (Verdult, 2009), in US from 6.7% in 1990 to 19.1% in 2014, in Asia it increased from 19.2% (Magne, Puchi, Carvajal, & Gottelan, 2017), in India was 17.2% (Radhakrishnan, 2017). There are various reason for opting cesarean delivery e.g. when mother’s age was above 30, religious beliefs, convenience (Verdult, 2009). What happens during the process of childbirth has an impact on a child's development in the first few weeks, months and sometimes throughout the life (Doherty & Hughes, 2014). The unexpected disconnection from the womb can be overwhelming for the baby, it can create a sense of helplessness, need to be rescued and difficulty in bonding with mother (Verdult, 2009).

Cesarean section has been directly or indirectly associated with poor cognitive function (Polidano, Zhu, & Bornstein, 2017), poor breast-feeding practices (Hobs, Mannion, McDonald, Brockway, & Tough, 2016), poor development of immune system, higher risk of allergies, diabetes, and asthma in later life (Leung, Leung, & Schooling, 2017). In a qualitative study these adults born through cesarean birth reported facing difficulties like

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being hyper alert, bonding deficiencies, difficulty in dealing with complications, need to be rescued, and increased chances of schizophrenia in adulthood (Chen & Tan, 2019; Shapira, 2017).

Gender and resilience

The role of gender in understanding resilience is important. Both male and female use different kinds of coping skills to deal with adversity (Sun, & Stewart, 2007). Women tend to seek more social support and express their emotions more often, whereas men tend to be more likely to engage in violence and behavioral manifestations of emotions. When it comes to facing disaster, women tend to be less resilient than men (Shean, 2015). The biological difference in response to the stress (Eckert, & McConnell- Ginet, 2013); the different social norms and expectation for both the gender (Bus & Bandura, 1999); and the difference in the cognitive schema of these genders (Miller, 2016) collectively contribute to the way male and female will react to the stress. While facing disasters, women tend to be more vocal for seeking help, whereas, men used more problem focused strategies, and were more resilient than female (Stratta, Capanna, Patriarca, Cataldo, Bonanni, Riccardi, & Rossi, 2012). However, in study by Morano (2010) indicated female used both emotion focused and problem focused strategy with significant difference in resilience. In 2008 the study by Fuller-Iglesias, Sellars, and Antonucci with older adults revealed no gender difference in resilience. In an exploratory study of 179 adolescents, it was seen there was a significant difference in the protective factors of male and female adolescents, but no significant difference in resilience. Family cohesion, communication, were strongly related to female (Grossman, Beinashowitz, Anderson, Sakurai, Finnin, & Flaherty 1992). Similar findings were reported by Sun & Stewart in 2007, where there is difference in the protective factors however the gender difference in resilience changed with increasing age. In a twin study of resilience Boardman, Blalock & Button (2008) reported, resilience is more heritable in men than women. In Indian study by Katyal (2014) reported no gender difference in undergraduate students after heartbreak, in another Indian study by Prabhu and Shekhar (2017) results indicated significant gender differences in resilience and perceived social support.; Sreehari & Nair (2015) reported gender difference in resilience but not in any protective factors like social relationship, caring adults. The gender difference in resilience is contextual in nature (Graber, Pichon, Carabion, 2015). The studies with resilience show mix results and in adults with C – section the domain of resilience in Indian context is yet to be explored. Considering these factors, the present study was undertaken to understand whether early trauma like cesarean birth can have impact on resilience and to see the gender difference.

Understanding these adversities, shortcoming, negative life events, and traumas is pivotal as it will help in developing better interventions for building resilience. One such event is cesarean birth. In this research an attempt was made to explore whether gender and birth type can influence resilience or not.

METHODOLOGY

The study has following objectives • To study differences in psychological resilience among young adults born with vaginal method and cesarean method. • To study gender differences in psychological resilience among young adults born with vaginal method and cesarean method.

Hypothesis: 1). 2) There will be difference in the score of resilience in male and female. Sample: The study was conducted on 220 adults aged 18 to 30 years. All the respondents

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were from urban, semi urban residential area of Maharashtra state of India. The online and in person survey was conducted in English language through snowball sampling.

Measurement Tool

Information about birth type, gender, education, date of birth collected through demographic form. The 25 item Resilience Scale by Wagnild and Young (1993) was used to measure the resilience. It is 7 points Likert scale, the responses ranges from 1 ‘Strongly disagree’ to 7 to ‘Strongly Agree’. High score indicates high resilience on this scale. Scoring was done by following the guidelines given by author of the scale. Summed up scores were taken for analysis. This scale has been used in research on adolescents, younger and older adults, people from different cultures, and at-risk population. These studies reported Cronbach's alpha between .72 and .94. (Wagnild & Young, 1993; Salisu & Hashim, 2017; Scoloveno, 2017; Fernandes, Amaral, & Varahao, 2018).

RESULTS

There are two independent variables with two levels each; (1) Birth Type - vaginal delivery (VD) and cesarean delivery (CS), and (2) Gender – Male and Female. The obtained data of 220 participants was analyzed using SPSS 23rd version. The data was tested for normality. To check the normality of the data Skewness and Kurtosis were taken into consideration.

Table No. 1: Descriptive Statistics for Birth type and Resilience.

Birth Type	N	Mean	SD	Skewness	Kurtosis
VD	173	139.01	16.96	-.140	-.287
CD	47	136.82	14.57	-.287	-.449

The first hypothesis states there is a difference in psychological resilience among adults born with vaginal delivery and cesarean section delivery. There were 220 participants in this research out of which 173 participants reported that they were born with Vaginal Birth (78.63%) and 47 with Caesarean Section Birth (21.36%) (Ref. Table No 1). The difference in the mean score of Vaginal Delivery (139.01) and Cesarean Section (136.82) was 2.37. The skewness (-.140) and kurtosis (-.287) of VD and skewness (.161) and kurtosis (-.449) of CD (Ref. Table No. 1) indicated data is normally distributed.

Table No. 2: One Way ANOVA Psychological Resilience in Vaginal Delivery (VD) and Cesarean Section (CS) Birth.

Source	df	Mean Square	F	Sig.
Birth Type	1	176.86	.651	.421
Error	218	271.87		

To analyze the statistical significance Univariate analysis of variance was performed. The analysis indicated the F value is not significant. $F(1,218) = .65, p = .42$ (Ref. Table No. 2). Thus, the hypothesis stating that ‘there will be difference in the score of resilience based on birth type that is vaginal and cesarean’ is rejected.

Table No. 3: Descriptive Statistics for Gender and Resilience.

Gender	N	Mean	SD	Skewness	Kurtosis
Female	165	137.82	15.79	-.241	-.306
Male	55	140.72	18.35	.147	-.550

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The second hypothesis test the gender difference in psychological resilience. As shown in the Table no 3 there were 75% female (N = 162) participants and 25% male (N = 55) participants in this study. The mean difference between female (137.82) and Male (140.72) scores in resilience Scale is 2.82. The skewness (-.241) and kurtosis (-.306) of female and skewness (.147) and kurtosis (-.550) of male indicated data is normally distributed (Ref. Table No.3).

Table No. 4: One Way ANOVA Psychological Resilience for Female and Male.

Source	df	Mean Square	F	Sig.
Birth Type	1	347.63	1.28	.259
Error	218	271.08		

The findings in table no. 4 revealed that the differences in Psychological resilience scores for female and male were insignificant to analyze the statistical significance Univariate analysis of variance was performed. The analysis indicated the F value is not significant. $F(1,218) = 1.28, p = .25$. Thus, the hypothesis stating that 'there is gender difference in Psychological resilience among male and female' rejected.

DISCUSSION

Earlier studies proposed the difference among children and adults born with CS and VD, the difference was found between their behavioral problems, cognitive skills, and psychopathology (Hobes *et al.* 2016; Polidano *et al.* 2017). There is also difference in their physiological growth and parenting styles. All these factors also play a role in shaping the resilience in an individual. (Leung *et. al* 2017; Chen *et al* 2017).

This study was aimed to explore the differences in the psychological variable as the differences present in physiological variables. Looking at the previous studies like in the research conducted by Pieper *et.al.* in 1964 there was no difference in the developmental history, personality traits, intelligence in these groups. Leung *et. al* (2017) conducted research on mode of delivery and psychological well-being on children of the 1997 birth cohort. Study showed no significant difference in the depressive symptoms but there was CS was perhaps associated with lower self-esteem and Rutayisire *et.al.* (2018) showed no difference in the depressive symptoms and emotional problems, this study also found the difference on the psychological variable like Resilience is not significant. Unlike other studies this study did not explored the biomedical variable, which is one of the limitations of this study.

Both genders showed similar performance in resilience. The results are consistent with study by Fuller – Iglesias *et.al.* (2008); Grossman *et.al* (1992); Katyal (2014); reported both genders were similar on resilience. Further evaluation of protective factors is required to explore the gender specific factors. As mentioned in Grossman *et.al* (1992) & Sun & Stewart (2007) despite scoring similar on resilience the gender difference persists in protective factors. Indicating further investigation required for understanding protective factors.

Overall, those studies with children born through cesarean section as a population showed different level performance than that of normal born children, with adult population the performance is almost similar in both samples. The difference in the adult population was observed when the studies were conducted qualitative accounts (Chen & Tan, 2019; Shapira,

2017). This points to explore the developmental trajectories of adult with c- section birth type. Through more controlled experimental studies this can be studied further. It is required to understand that despite having faced trauma at the very beginning of the life these children showed coping as equivalent as others.

Limitations of the study

There is paucity of research conducted to understand the impact of Cesarean birth on developing adult, especially in India. Therefore, major ideas and references are influenced by foreign literature. The limitations of the present research are mentioned below:

1. The size of the sample of the present study was less and they were selected from the region of Navi Mumbai, Mumbai.
2. Only those participants who understand English language were selected which limits the representativeness of the sample.
3. Female were overrepresented as compared to male.

Suggestions for future research

The number of cesarean born babies are increasing, as research have pointed out the physiological changes in the babies born with different delivery methods, the psychological aspects are underexplored. Some studies were conducted on people born with Cesarean method; however, most of them focused on children. There is need for more research on adult population. Keeping this in mind, the upcoming research can be conducted with different methods, tool, and population.

1. Study can be conducted with larger sample size, new or adaptation of the existing tools to assess state and Psychological resilience in Indian culture.
2. Across the state or country to confirm the results and increase generalizability of the results.
3. Studies can be conducted by ensuring proper representation of both genders.
4. In future, research can be conducted to understand the protective factors of psychological resilience among male and female.
5. Future research can be conducted using qualitative research design to get better understanding about development of resilience in Indians.
6. Longitudinal study can throw better light on development of resilience across the lifespan.

CONCLUSION

The result of the present study indicate similar psychological resilience in Birth Type and Gender. Overall, it was observed that studies with adult born with cesarean birth type showed similar performance to vaginal delivery in quantitative researches, however when the research took qualitative approach the different factors emerged. This indicate need to develop appropriate research tool and methodology to study cesarean birth. Similarly, the when the trait resilience was measured in male and female the studies showed inconsistent results. When resilience in gender studied in context of any event, trauma different result obtained, indicating the different protective factors could be playing role.

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Acknowledgement

This research was funded by Karmaveer Bhaurao Patil, College (Autonomous), Vashi, Navi Mumbai, India. We appreciate all the support provided by funding college in completion of this research. The author appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author declared no conflict of interest.

How to cite this article: Petare P. & Shaikh E. (2021). Effect of birth type, gender on psychological resilience. *International Journal of Indian Psychology*, 9(1), 214-222. DIP:18.01.025/20210901, DOI:10.25215/0901.025