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Parents of Children with Intellectual Developmental Disorder (IDD): A Study of Informal Caregivers in Kerala and Maharashtra

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Abstract

The struggles and hardships that parents undergo in their life while exercising their parental duty to a child with intellectual disability is immense. Parents referred in this paper as primary caregivers and informal caregivers. This paper highlights the role that parents perform in their life as informal caregivers of children with IDD. The challenges they face while they execute their role as caregivers varies different aspects like physical, psychological, social, relational and economical. It was a descriptive study with quantitative research methodology by using standardized scale and semi-structured interview schedule. The study found that financial crisis was crucial among parents because in many cases bread winner of the family was single. Even though there were challenges, all the participants were satisfied in doing their service. A humanitarian approach and altruistic attitude towards children with IDD are more visible in this study.

Key Words: *Intellectual Disability, Informal Caregivers, Humanitarian Approach, Altruistic Attitude.*

Introduction

Intellectual developmental Disorder (IDD) is a neurological disorder which is based on IQ of a person, and it appears by birth and its severity expands throughout the ages unless he/she gets proper training. Caring a child is not a simple task in the current scenario. Caring a child with disability, especially Intellectual disability demands more attention, time, patience and adjustability to their own life and lifestyle. Caring is simply helping a person or assist to perform his/her personal needs, sustainability or well-functioning of an

organism. We understand this concept caring as paid or non-paid. For example, a mother or father who cares children function their role of caring not in a formal manner as paid job but in an informal manner and they carry their responsibility as primary caregivers to their children with ID. This paper mainly focusses on the role of parents as informal caregivers to their children with ID and the challenges they face in their life while they execute their parental duties.

Review of Literature

There are many studies that emphasise the care giving role of NGOs and parents towards children with Intellectual Developmental Disorder (IDD). Here I am going to narrate certain studies and their finding related to this topic for the study. Sukant Chhotaray (2020) studied both mother and father of 30 children with intellectual disability by using NIMH Disability Impact Scale. The study came up with the result that both the parents affected by their disabled child and mothers considerably affected more than fathers. The study found that cultural influences and maternal role of caring causes higher disability impact and stress in mothers of the children with ID. The result of the study revealed that the impact of having a child with ID on parents were both negative and positive. The negative impacts were embarrassment and negative thoughts towards self on mothers. More sensitivity, tolerant and empathic towards the situation were the positive impacts on mothers (Sukant, 2020). The study by Adithyan G.S et.al., discussed thoroughly positive and negative impacts among caregivers of children with intellectual disability. They used National Institute for the Mentally Handicapped Disability Impact Scale (NIMH, 2000) and focused group discussions (FGDs) to achieve this task. The major positive impacts they found in their study were self-esteem among parents, strengthening of family ties and social responsibilities. The negative impacts they summarized in personal and health impact, financial impact and social impact. (Adithyan, Sivakami, and Jacob, 2017).

A cross-sectional study on children with Intellectual Disability and its impact on caregivers by Divya Bunga et.al., assessed 100 parents of ID children. They assessed level of ID child with developmental screening test and the ICD-10 and impact it's on parents studied by using the modified National Institute of Mentally Handicapped Disability Impact Scale (DIS). The study came up with the result that physical care of the child with disability impacted

56.63% parents of the study. Other major impact was on financial problems (58.87%), social restriction (36.75%) due to domains of disability. Caring an ID child didn't make any kind of feeling of embarrassment on parents (71.72%). Positive impacts like tolerance, patience, self-efficacy, general satisfaction with life were increased (67.3%) (Bunga, Manchala, Ravindranath, and Shankar, 2020).

A study by Sanne A. H. Giesbers et.al., based on social capital theoretical perspective examined perceptions of people with mild intellectual disability about their family support in comparison with their family members. The major finding of the study was that participants with mild intellectual disability had a denser family network than what their family members expected or perceived. The study concluded with the statement that perceptions of people with mild intellectual disability and their family were different on several aspects of the family support network (Giesbers, et al., 2021).

Anna Gutowska had made a study on informal (Family) caregivers' perspectives on care of adults with Intellectual Disabilities (ID). She interviewed 12 caregivers from the age between 51 to 82 and who were caring individuals between the age of 20 to 49. These informal caregivers were parents who were supporting and assisting to everyday activities of their adult children. The support and assistance they provided both physically and emotionally was constant and regular in nature. The major finding of the study was that majority of respondents had a negative effect on their well-being due to their caregiving role of adults with ID. They performed their caregiver's role at the expense of their own lifestyle (Gutowska, 2022).

Giesbers et.al., made a comparative study on students with and without intellectual disability. The study came up with the result that participants with mild intellectual disability had fewer family networks and relationships with family members in which support was received (Giesbers S. A., Hendriks, Hastings, Jahoda, and Tournier, 2020). Cognitive impairment and the negative effect of ID and psychiatric disorders regulate individuals with ID from many connections existing among their significant family members. They may have a lower centrality in the family dynamics. The reason for that may be because of the relational withdrawal from patients and thus their relative isolation and feelings of dissatisfaction and incompetence of parents and siblings (Widmer, Constantin, Tissot, Lanzi, and Galli, 2008).

The concept like parents as single sources of support for adolescents and young adults with intellectual disabilities should be reconsidered. Larger configurations of family ties are important when we deal with the interrelation between family support and the psychological adjustment of individuals with intellectual disabilities. As a result, young adults with ID are embedded in various family configurations that lead them to distinct types of social capital and which have an effect on their psychological adjustment (Widmer, Kempf, Sapin, and Carminati, 2013).

Objectives of the Study

1. To describe the socio-economic conditions of the informal caregivers/ Parents with IDD children.
2. To analyze the Social, psychological, health, relationship, financial burden and challenges of the Parents with IDD children.

Research Design

The current study adopted a descriptive research design to meet the above objectives. The researcher has opted two provinces in India based on highest incidences of IDD. Kottayam, district from Kerala and Satara, from Maharashtra has the highest number of IDD incidents. The researcher interviewed 27 respondents with a semi-structured interview schedule with the help of eight special schools running by NGOs in the district of Kottayam, Kerala and Satara, Maharashtra. All these NGOs were providing services in the form of special education, therapeutic interventions, early interventions, counselling and vocational training to the children and adults with intellectual disability. The study was looking at the role of NGOs and parents as caregivers. It covers the duties, responsibilities and services they are providing and the challenges they face in their personal life, family life and in NGO while they are assisting with their caring responsibility and services to the children with Intellectual disability.

Methodology

The study follows quantitative methodology.

Variables: The informal caregivers/Parents with IDD children. The data analyzed through the statistical tools. Quantitative data entered in SPSS and interpreted with statistical tests like cross tabulation, correlation, descriptive statistics, mean, standard deviation and other statistical tools. Researcher used purposive sampling method for data collection.

Participants: Researcher interviewed parents/ informal caregivers with a semi-structured interview schedule with an open-ended and close-ended**.**

Materials and Procedure: Researcher also used Zarit Caregiver burden Scale to assess the challenges and burden that parents face in their life while they perform their parental role towards their children with IDD.

Reliability Statistics of the Zarit Caregiver burden Scale

Scale

Cronbach's Alpha	N of Items
.855	21

(Table-1)

Data Analysis and Discussion

Informal caregivers participated in this study were both male and female parents as father and mother. Female participation was dominant with 59% and whereas male participation was 41%. They were educated with degree, higher secondary, postgraduate and school respectively according to their ascending order. The following table demonstrate crosstabulation of gender and education.

Gender * Education Crosstabulation

Count

		Education					
		Primary	HSC	Degree	PG	No School	Total
Gender	Male	3	4	1	3	0	11
	Female	1	5	7	2	1	16
Total		4	9	8	5	1	27

(Table-2)

The participants among study, majority (22/27) have completed higher education with higher percentage from HSC (33%) followed by Degree (30%), PG (18%). A small proportionate studied primary school (15%) and one participant was illiterate. The higher number of participants were studied HSC and participant with graduation was higher than participants with post-graduation and school education. There was one participant who had not gone to the school. The number of female participants graduated with degree were higher in comparison with male participants in the study. The participant who had not gone to the school was a female participant. Age of the participants pictured in the below descriptive statistical table.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Age	27	30	59	44.70	8.995
Valid N (listwise)	27				

(Table -3)

The participants of the study were from the age of 30 to 59. The mean age of the study participants is 44.7 years with a range of 30-59 years and standard deviation of ~9 years. There were only two parents who were working in the government sector whereas majority were working in private sector (41%). Parents who were not working due to their care giving responsibility was in the second position (33%) among the participants of the study. There were five parents who were self-employed. Marital status and mode of family also accessed in the study. All the respondents were married and one of them was widowed. Seventy-five percentage of respondents had nuclear family with one or two children. The extended families with grandparents were 19% and joint families were only 7%.

Financial status of the family was also an important factor in the study. 'Father' was engaged in money earning job in many cases (70%) whereas in some cases both 'father and mother' were earning (11%). Majority of them belonged to BPL category (42%) and respondents earned above one lakh twenty thousand annually were 22%. The number of respondents who were earning below sixty thousand was also same. It means that parents below poverty line and near to poverty line together comprise majority (67%) of the respondents. The following table shows crosstabulation of IQ of the child and sex of the child.

Sex of Child * IQ level Crosstabulation

Count

		IQ level				
		0-20/25 (Profound)	20/25-35/40 (Severe)	35/40-50/55 (Moderate)	50/55-70 (Mild)	Total
Sex of Child	Male	0	4	9	3	16
	Female	2	0	5	4	11
Total		2	4	14	7	27

(Table -4)

Children with intellectual disability were the care recipient in the study. Basic information of care recipient also mentioned in the study. IQ level of the child was decisive factor of parental challenges. Majority of parents in the study were having moderate (52%) and mild (26%) IQ level children. Parents having severe ID children were higher in the study compared to profound category (15% and 7% respectively). Majority of parents in the study were having male child with IDD (63%) and their age range was from 3 to 17. Parents in the study had only one child with IDD and no other siblings were in the state of IDD. Duration of caregiving in most of the cases were from 12 to 24 hours of a day. One child was totally independent in the study.

Parents were doing the role of primary caregivers, especially, husband, wife and grandparents. Among the participants of the study 58 % were mothers and 42 % were fathers. Majority of the respondents replied that they are getting support from family always in caregiving (73%). But 15% of parents responded that they were not getting support from anyone. Majority of children referred in the study were regular to the school (82%) and only a few children (18%) were irregular to school study because of health issues and financial problems. Health issue was the major reason behind irregularity. Majority of children used school bus (73%) for the transportation to the school. Some children were coming to the school by own vehicles (19%) and others were coming by private vehicles (8%). In most of the cases NGOs were providing school bus facility to the children. It was really a great support for majority of parents. It makes their travel more comfortable to the school and back to home.

The minimum and maximum commuting time to school from home and vice versa was 10 minutes to one hour. Even though, the majority of the respondents were taking one hour to reach in school. Children were getting scholarship and pension amount from state government (66%) and central government (15%). The children who were not getting any kind of scholarship were 19%. They were connected to the NGOs from one to fifteen years. Many of them enrolled in the NGOs within 5-year span. 81% of children were regular to NGO and 19 % were not regular because of their health issues and in one case the reason was financial problem. Number of children who were sharing and not sharing their school experience at home was 54% and 46% respectively. The children were getting home assignments from special schools (81%) and all the parents whose children were getting home assignments from school were happy to get home assignments (81%). All the children involved in the study had Aadhar card, Disability certificate, UDID card and ration card. All the children except two had bank accounts jointly with their parents and only two children were having pan card. NGO helped them to obtain these documents (85%).

Parents were undergoing mild to severe burden on the following items: lost control of life (54%), uncertain about relative (54%), sense of strain (85%), anger (73%), uncomfortable over friends (52%), social life (71%), other relationships (76%), excessive help requests (71%), and fear not able to continue caring (65%). Parental burden was mild to extreme on certain items like: no time for them (81%), overtaxed with responsibilities (85%), should do more to relative (77%), could do better job of caring (77%), health (81%) and privacy (78%), responsibility on one caregiver (62%), future regarding relative (89%), fear not having enough money (71%), fear not able to continue caring (65%), depend on you as caregiver (63%).

Majority of respondents felt that they were not losing their control of life due to their caregiving role. Majority were not felt embarrassment or uncomfortable about having friends over. But many of them felt moderate to severe burden on their social life and other relationship with family and friends. There was moderate to severe burden on sense of strain and anger. The highest number of participants expressed that they were not at wish to leave care to someone else and also, they were not felt embarrassment. They were ready to take care their child with IDD till their time. But about their future was a thought that created a fear in them and some of them had financial problems to manage the situations. Parental burden is accessed in more details in the following categorizations. Zarit burden scale score is pictured below.

Zarit Caregiver burden scale Score

Question Item	Never-(0) No burden			Extremely Rare (1) Mild burden			Very Rarely (2) Moderate burden			Rarely (3) Severe burden			Nearly Always (4) Extreme burden		
	Freq	%	Score	Freq	%	Score	Freq	%	Score	Freq	%	Score	Freq	%	Score
No time for you care giver	5	19	0	4	15	4	12	46	24	3	11	9	3	9	12
Overtaxed with responsibilities	4	15	0	4	15	4	10	39	20	7	23	21	2	8	8
Lost control of life	12	46	0	3	11	3	8	28	16	4	15	12	0	0	0
Uncertain about relative	12	46	0	4	15	4	4	15	8	7	24	21	0	0	0
Should do more to relative	6	23	0	6	23	6	8	28	16	5	19	15	2	7	8
Could do better job of caring	6	23	0	1	4	1	11	42	22	7	24	21	2	7	8
Sense of strain	4	15	0	6	23	6	10	39	20	6	23	18	0	0	0
Anger	8	27	0	5	19	5	10	39	20	4	15	12	0	0	0
Embarrassment	14	53	0	6	23	6	3	10	6	3	10	9	1	4	4
Uncomfortable friends over	13	48	0	4	15	4	4	15	8	6	22	18	0	0	0
Social life	8	29	0	2	8	2	13	48	26	4	15	12	0	0	0
Other relationships	7	24	0	5	19	5	10	38	20	5	19	15	0	0	0
Health	5	19	0	1	4	1	8	28	16	12	45	36	1	0	4
Privacy	6	22	0	2	8	2	9	35	18	8	29	24	2	4	8
Excessive help requests	8	29	0	6	23	6	8	29	16	5	19	15	0	0	0
Responsibility one caregiver	10	38	0	8	29	8	7	25	14	1	4	3	1	4	4
Future regarding relative	3	11	0	4	15	4	3	11	6	10	38	30	7	25	28
Fear not having enough money	8	29	0	8	29	8	4	15	8	5	19	15	2	8	8

Fear not able to continue caring	9	35	0	7	23	7	10	38	20	1	4	3	0	0	0
Wish to leave care to someone	14	53	0	8	29	8	1	4	2	3	10	9	1	4	4
Depend on you as caregiver	8	27	0	9	35	9	4	15	8	4	15	12	2	8	8

(Table-5)

The Zarit Burden Interview (ZBI) consists of 22 items rated on a 5-point Likert scale that ranges from 0 (never/ no burden) to 4 (nearly always/ extreme burden) with the sum of scores ranging between 0 to 88. These 22 items divided into five domains or five areas of burden. The above depicted chart shows the scoring of each item in the current study. Health burden consists of 6 items which maximum can be scored 24 totally scored 256 for 27 participants. So, the present study found mild to near moderate burden on health with the score of 9.48. Psychological burden combined 5 items with the maximum score 20 obtained 188 for 27 respondents. Psychological burden was also clear in the study with 6.96 having mild to moderate burden. Financial burden accessed with 4 items can totally be scored 16 scored 160 for 27 respondents in the current study. It clearly states in the study that their financial burden was from mild to moderate (score 5.92). Social burden comprises 3 items can totally be scored 12 scored 110 for 27 respondents. Social burden was also from mild to moderate with the score 4.07. Relationship burden includes 4 items can totally be scored 20 scored 170 from 27 respondents. The current study observed a mild to moderate burden in relationship with the score of 6.29. The following correlation matrix will explain these burdens in detail.

Health Burden

Health burden of the participants was accessed with zarit burden scale items. No time for you, overtaxed with responsibilities, lost control of life, health, excessive help requests, responsibility on one caregiver was the items come under health burden. The following correlation table will explain its relevance on this study.

Correlations

		No time for you	Overtaxed with responsibilities	Lost control of life	Health	Excessive help requests	Responsibility one caregiver
No time for you	Pearson Correlation	1	.880**	.290	.339	.266	-.056
	Sig. (2-tailed)		.000	.151	.090	.188	.786
	N	26	26	26	26	26	26
Overtaxed with responsibilities	Pearson Correlation	.880**	1	.416*	.347	.266	-.061
	Sig. (2-tailed)	.000		.035	.082	.189	.766
	N	26	26	26	26	26	26
Lost control of life	Pearson Correlation	.290	.416*	1	-.038	.025	-.035
	Sig. (2-tailed)	.151	.035		.855	.902	.864
	N	26	26	26	26	26	26
Health	Pearson Correlation	.339	.347	-.038	1	.258	.303
	Sig. (2-tailed)	.090	.082	.855		.204	.132
	N	26	26	26	26	26	26
Excessive help requests	Pearson Correlation	.266	.266	.025	.258	1	.086
	Sig. (2-tailed)	.188	.189	.902	.204		.677
	N	26	26	26	26	26	26
Responsibility one caregiver	Pearson Correlation	-.056	-.061	-.035	.303	.086	1
	Sig. (2-tailed)	.786	.766	.864	.132	.677	
	N	26	26	26	26	26	26

(Table-6)

Parents as primary caregivers were affected with mild to moderate health burden on many of the aspects. Statistical analysis of their physical burden had significant correlation in certain aspects. There was a strong positive significant correlation between 'overtaxed with responsibilities and no time for you (r = .880**, P= .000 < .05). The study clearly showed that majority were not overtaxed with responsibilities, and they did not feel that they were not getting time for themselves. Health and overtaxed with responsibilities also had a moderate positive significant correlation (r = .416*, P= .035 < .05). It is visible in the study that their health burden was moderate. Responsibility on one caregiver had a negative strong correlation with 'no time for you, overtaxed with responsibilities and lost control of life. (r = -.056, -.061, -.035, .207; P= .788, .766, .864, > .05). Responsibility on one caregiver had a positive week correlation with health (r = .303, P= .132 > .05). Parents' caregiving role and other responsibilities of their life didn't

create any uncontrolled situations in their life. They could manage their life with their responsibilities. Excessive help requests from care recipient had week positive correlation with 'no time for you, overtaxed with responsibilities, lost control of life, health, responsibility on one caregiver (r = .266, .266, .025, .258, .086; P= .188, .189, .902, .204, .677 > .05). This is not a significant correlation.

Health had moderate positive correlation with 'no time for you and overtaxed with responsibilities and responsibility on one caregiver (r = .339, .347,.303, P= .090, .082,.132 >.05). Health had a positive week correlation with excessive help requests (r = .258, P= .204 > .05). Health had a negative week correlation with 'lost control of life' (r = -.038, P= .855 >.05). None of these correlations are significant. 'Lost control of life' had a week positive correlation with 'no time for you' and excessive help requests (r = .290, .025, P= .151, .902 >.05) and negative week correlation with health and responsibility on one caregiver (r = -.038, -.035, P= .855, .864 >.05). Lost control of life had a positive significant moderate correlation with overtaxed with responsibilities (r = .416*, P= .035< .05). The only significant correlation of 'lost control of life' is this only. Overtaxed with responsibilities had significant positive strong correlation with 'no time for you' (r = .880**, P= .000 < .05), moderate positive correlation with 'lost control of life' (r = .416* P= .035 < .05). and week positive correlation with 'health and excessive help requests' (r = .347,.266, P= .082, .189 > .05). There was a negative week correlation with 'overtaxed with responsibilities' and 'responsibility on one care giver' (r = -.061 P= .766 >.05). No time for you had significant positive strong correlation with 'overtaxed with responsibilities (r = .880** P= .000 < .05), week positive correlation with 'excessive help requests,' 'health' and 'lost control of life' (r = .266,.339,.290 P= .188,.090,.151>.05), and negative week correlation with 'responsibility on one caregiver' (r = -.056, P= .786 > .05).

Psychological Burden

Their psychological burden was accessed with five items. There was some significant correlation between certain items. Their overall psychological burden was mild to moderate and majority had moderate to severe burden on privacy. The following correlation table demonstrate psychological burden clearly.

Correlations

		Sense of strain	Anger	Embarrassment	Privacy	Uncomfortable friends over
Sense of strain	Pearscn Correlation	1	.386	.315	.251	.354
	Sig. (2-tailed)		.051	.116	.215	.076
	N	26	26	26	26	26
Anger	Pearscn Correlation	.386	1	.291	.144	.338
	Sig. (2-tailed)	.051		.149	.482	.091
	N	26	26	26	26	26
Embarrassment	Pearscn Correlation	.315	.291	1	.668**	.712**
	Sig. (2-tailed)	.116	.149		.000	.000
	N	26	26	26	26	26
Privacy	Pearscn Correlation	.251	.144	.668**	1	.772**
	Sig. (2-tailed)	.215	.482	.000		.000
	N	26	26	26	26	26
Uncomfortable friends over	Pearscn Correlation	.354	.338	.712**	.772**	1
	Sig. (2-tailed)	.076	.091	.000	.000	
	N	26	26	26	26	26

**. Correlation is significant at the 0.01 level (2-tailed).

(Table-7)

The study observed a positive strong correlation of 'embarrassment' with 'privacy and uncomfortable about having friends over' (r = .668**, .712** P= .000, .000 <.05). 'Embarrassment' with 'anger and sense of strain' had a positive week correlation (r = .291, .315 P= .149,.116 > .05). Feeling uncomfortable about having friends over had a significant positive strong correlation with embarrassment and privacy (r = .712**, .772** P= .000, .000 <.05). A positive moderate correlation observed between 'uncomfortable over friends' with 'sense of strain and anger' (r = .354, .338 P= .076, .091 > .05). Privacy also had a significant positive strong correlation with 'embarrassment and uncomfortable friends over' (r = .668**, .772** P= .000, .000 <.05). Correlation of privacy with sense of strain and anger is positive moderate correlation anger' (r = .251, .144 P= .215, .482 > .05). They had a positive week correlation between 'sense of strain with 'Anger, embarrassment, privacy and feeling uncomfortable about having friends over'

(r = .386, .315, .251, .354 P= .051, .116, .215, .076 >.05). Correlation between 'Anger' and 'sense of strain, embarrassment, privacy and uncomfortable friends over' also had a positive week correlation (r = .388, .291, .144, .388 P= .051, .149, .482, .091 > .05). Both of these correlations are not significant.

Financial Burden

Financial burden of primary caregivers evaluated with four items in the scale. Statistical correlation revealed that their 'fear of not able to continue caring' and fear of not having enough money significantly related to the 'wish to leave care to someone.' Following correlation table depict it clearly. The following table showcase correlational statistics in financial burden.

Correlations

		Future regarding relative	Fear not having enough money	Fear not able to continue caring	Wish to leave care to someone
Future regarding relative	Pearson Correlation	1	.381	.348	.346
	Sig. (2-tailed)		.055	.081	.083
	N	26	26	26	26
Fear not having enough money	Pearson Correlation	.381	1	.583**	.639**
	Sig. (2-tailed)	.055		.002	.000
	N	26	26	26	26
Fear not able to continue caring	Pearson Correlation	.348	.583**	1	.688**
	Sig. (2-tailed)	.081	.002		.000
	N	26	26	26	26
Wish to leave care to someone	Pearson Correlation	.346	.639**	.688**	1
	Sig. (2-tailed)	.083	.000	.000	
	N	26	26	26	26

**. Correlation is significant at the 0.01 level (2-tailed).

(Table- 8)

Fear of future regarding their child with IDD observed a moderate positive correlation with fear not having enough money, fear not able to continue caring and wish to leave care to someone (r = .381, .348, .346 P= .055, .081, .083 >.05). Their fear of not having enough money stated a positive moderate correlation with fear of future regarding their child, fear that not able to continue caring and wish to leave care to someone (r = .381, .583**, .688** P= .002, .000 >.05). A significant positive moderate correlation noted with

fear not having enough money with fear not able to continue caring and wish to leave care to someone else. 'Fear not able to continue caring' have a positive moderate correlation with 'future regarding relative, fear not having enough money, wish to leave care to someone' (r = .348, .583**, .688** P= .081, .002, .000 >.05). (r = .696**, P= .006 <.05). Their wish to leave care to someone had a significant positive moderate correlation with fear not having enough money and fear that they were not able to continue caring (r = .639**, .688** P= .000, .000 >.05).

Social Burden

Social burden was evaluated with 'social life, other relationships and uncomfortable friends over'. The study perceived a significant positive strong correlation with social life and other relationships. The table pictured below shows statistical analysis of social burden.

Correlations

		Social life	Other relationships	Uncomfortable friends over
Social life	Pearson Correlation	1	.836**	.533**
	Sig. (2-tailed)		.000	.005
	N	26	25	26
Other relationships	Pearson Correlation	.836**	1	.531**
	Sig. (2-tailed)	.000		.006
	N	25	25	25
Uncomfortable friends over	Pearson Correlation	.533**	.531**	1
	Sig. (2-tailed)	.005	.006	
	N	26	25	26

**. Correlation is significant at the 0.01 level (2-tailed).

(Table-9)

The table shown above describe social life had significant positive strong correlation with 'other relationships and uncomfortable friends over' (r = .836**, .533** P= .000, .005 <.05). All these three items are inter-connected. Comfortability over friends and other relationships are decisive factors of social life. Majority in the study were feeling moderate to severe burden on their 'social life' and both 'other relationships and uncomfortable having friends over'.

Relationship Burden

Relationship burden is assessed with four items in the scale. A significant correlation observed only between 'could do better job of caring and uncertain about relative.' Participants in the study related to the child as father and mother and their parental relationship entrusted them duties of taking care their children with IDD. The following table describes the correlational statistics of relationship burden.

Correlations

		Depend on you as caregiver	Should do more to relative	Could do better job of caring	Uncertain about relative
Depend on you as caregiver	Pearson Correlation	1	-.080	.017	-.096
	Sig. (2-tailed)		.699	.935	.641
	N	26	26	26	26
Should do more to relative	Pearson Correlation	-.080	1	.188	.192
	Sig. (2-tailed)	.699		.358	.347
	N	26	26	26	26
Could do better job of caring	Pearson Correlation	.017	.188	1	.715**
	Sig. (2-tailed)	.935	.358		.000
	N	26	26	26	26
Uncertain about relative	Pearson Correlation	-.096	.192	.715**	1
	Sig. (2-tailed)	.641	.347	.000	
	N	26	26	26	26

**. Correlation is significant at the 0.01 level (2-tailed).

(Table-10)

The above table depicts a positive significant strong correlation was observed between 'could do better job of caring' with 'uncertain about what to do to the child' (r = .715**, P= .000 >.05). The correlation between 'could do

better job of caring' with 'depend on you as caregiver and should do more to relative' was positive week correlation. It was explicitly clear in the study that uncertainty and their wish to do more to the child led them to feel that they could do better job of caring. There is a negative week correlation with 'depend on you as caregiver' with 'should do more to relative and uncertain about relative' (r = -.080, -.096 P= .699, .641 >.05). The role was shared in the family and this relationship and sharing of role reduced their burden.

Major findings of the study

1. Parents were getting scholarship and pension amount for their child with ID from state and central government. State government was not considering special educators with the pay scale of normal school teachers and many of the NGOs were running with the donations they were collecting through different means.
2. The ratio of boys was higher than girls by almost 20% in NGO
3. Children with moderate IDD and mild IDD were higher whereas profound category children were less in number. One reason for that may be, majority of NGOs were mainly concentrating on special education and in many cases severe and profound category children were having multiple forms of disabilities and therefore educating them instead of supporting them with care and protection was not an easy task. The major support that NGOs provide for them was therapeutic interventions for life support and ADL (Activities of Daily Living) training. The internal consistency of different categories in NGO were also significant. In all the NGOs moderate children were high in number and mild, severe and profound simultaneously.
4. Primary caregivers' role in the family was taken up by mothers than fathers. Majority of them were not able to be engaged in any income earning job because of their caregiving duties. Number of moderate and severe children were higher in comparison with number of children having mild and profound intellectual development. It clearly underlines the fact that NGOs services through special education mainly focused on mild to severe IDD children.
5. The study perceived mild to moderate burden on many of their caregiving role by parents. Their fear regarding future of their IDD child was the extreme burden they felt in their life. Majority of respondents expressed

that they could lead a balanced life without losing their control on life. They were not getting embarrassment but many of them felt their social life and other relationship with family and friends negatively affected because of their caregiving role.

Limitations

The study is limited to a small sample size, but it covers a quantitative data and analysis with open ended questions. The study is also limited to two districts of Kerala and Maharashtra.

Conclusion

Since the study was based on a limited data, its vision was also little narrow downed. So, it has a weightage problem to affirm major challenges described in this study. But it shed light to the different aspects of care giving role of informal caregivers. It opened up many challenging roles that parents undertaking through their noble service to the child with IDD.

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An Exploratory Study of Emotional Intelligence, Academic Achievement and Leadership Skills among Indigenous Adolescents

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Abstract

Tripura consists of 19 major tribal communities and non-tribal population named Bengalis. In the census of 2011, the tribal community consists of 31.05 % and 69.95 % non-tribal of the state population. In this context how the nexus of Emotional intelligence, Academic achievement and leadership skills play a vital role among the indigenous adolescents of Tripura. The main purpose of the research is to examine and measure the emotional intelligence, academic achievement and leadership skills of Indigenous adolescents, a critical stage of one's life span. The study also explores the gender differences in Emotional Intelligence, Academic Achievements and Leadership Skills between male and female students. The study adopted a quantitative approach based on correlational research design and used a purposive random mixed sampling technique. The sample consists of 90 (40 females and 50 males) higher secondary school leader students of Five English medium schools in the West Tripura district. The data is collected through the Emotional Intelligence Test (EIT) of Ekta Sharma (2011), measuring Emotional intelligence and a standardized 'leadership skill questionnaire' for leadership skills and marks percentage to measure the academic achievements for the study. Descriptive statistics of mean and standard deviation, along with inferential statistics of t-test and correlation, were performed. The study finds that a high percentage of Indigenous students are very average in their measure of emotional intelligence and academic achievements, but high leadership skills are shown. The result shows

no significant correlation among the variables. There is no significant difference between males and females concerning Emotional intelligence, academic achievement and leadership skills in the study.

Keywords: *Emotional Intelligence, Academic Achievement, Leadership Skills, Indigenous Adolescents*

Introduction

The Plight of the Indigenous people is quite tragic, If we look at the Indigenous adolescents which are significant parts of the Indian population, especially in the North East and particularly in Tripura. Tripura consists of 19 major tribal communities and a nontribal population named, Bengalis. According to the Census of 2011, the tribal community consists of 31.05 % of the state's population while 69.95 % are non-tribal. The literacy rate of Tripura is 87.22% and west district rank high – 88.69 (India census.net). Being a minority in the state, tribal adolescents with their unique identities and cultures go through emotional insecurities, academic stress, lack of self-confidence and leadership initiatives. The late adolescent period is a period of dreams, personal goals, the turmoil of emotions, Physical and sexual maturation, confusing directions, peer group pressure, and seeking achievement and status in life. Academic stress, emotional management and academic performance are a few pertinent matters that concern adolescent students. Adolescents as being a critical stage, and the study on the emotional intelligence, academic achievements and leadership skills of Indigenous adolescents will help them to prepare and improve their self-confidence, motivate themselves to have purpose in life, improve academic resilience and cultivate leadership qualities to contribute to the development of their communities, the state and to the nation at large.

Significance of the Study

The main significance of the study is how tribal adolescents' emotional intelligence, academic performance, and leadership skills need to be understood within the tribal context, culture and tribal world. The plight of the Indigenous people concerning educational accessibility, economic growth, infrastructural development, emotional strength to face problems, motivation, intellectual calibre and individual leadership are not up to mainstream urban India. The main purpose of the research is to examine and measure the emotional intelligence, academic achievement and leadership skills of indigenous

adolescents who are higher secondary stage of their academic pursuit. It is also relevant for parents, educators, policymakers, and students to be aware of the emotional needs of these adolescents and how this awareness fosters academic achievement and leadership skills with the support of the stakeholders and the students themselves. So that the students will be able to cope with the transitions of life become very productive and lead a purposeful life in their personal life, family and society.

Literature Review

There are many factors that influence students' academic performance. According to research conducted by the opinion of Experienced teachers, family education level, intellectual and motivation dimension, school physical conditions, school management approach, school environment, socio-economic conditions, effects of teacher in terms of professional competence, exemplary life, attitudes, communication and guidance along with Emotional intelligence of the student to navigate the academic problems. (Ozcan 2021)

Emotional Intelligence: Emotional intelligence is the ability to reason out with emotions and to use the emotions to enhance thought for one's benefit and others. Emotionally intelligent behaviour is wise behaviour. Emotional intelligence is the ability to perceive, identify, appraise and regulate one's emotions to motivate oneself even in a stressful situation. EI can be considered as a set of skills that are useful for assessment, regulation of emotions and the utilisation of feelings for success in academics, profession and life (Johnson, 2016). Gayatri and Meenakshi's (2013) peer-reviewed study titled "A Literature Review of Emotional Intelligence" discusses the three major models of Goleman's competency, the Bar-On trait model and the ability model of Emotional Intelligence. Later, Goleman's competency model led to different leadership models based on different competencies of a human person. Studies by Bhattacharjee, A. and Debbarma, R. (2015) on the emotional intelligence of gendered tribal students within and with non-tribal students revealed that both tribal males and tribal females possessed a similar level of emotional intelligence. However, non-tribal males and females are significantly different from each other. In a comparison of EI with non-tribal and tribal adolescents, the former's score of emotional intelligence was significantly higher (Tripathi, I. (2015).

Academic Achievement: Emotional intelligence has a positive influence on Exam stress management, academic performance and leadership among

students. There is a significant positive relationship between EI and Academic achievement (Johnson, 2016). Students' emotional intelligence has a positive effect on their academic motivation and self-efficacy (Hammed, A., 2010). Achievement orientation is one of the important competencies of Emotional intelligence. Strategies to develop Emotional intelligence help students improve their academic performance and life skills, along with leadership skills that boost their self-worth, social interaction, confidence and resilience.

Academic achievement or academic performance is considered as the measure of assessment as far as the student's knowledge, skills and attitudes from curricular, co-curricular and extracurricular activities, etc., are taken into consideration. In academia, learning is measured through semester scores (SGPA). Though SGPA is valid and reliable for academic performance, Guterman (2021) suggested that consideration should be given to students' perceptions concerning their achievement. However, this task is challenging since there is no realistic and accepted subjective academic performance measurement method. York, Travis T. et al. (2015) conceptually evaluated the dominant model of Astin's I-E-O (Input, Environment, Output) and revised the definition and conceptual model of academic success. The revised Conceptual model of academic success consists of career success, attainment of learning outcomes, persistence, acquisition of skills and competencies, satisfaction and academic achievement. The literature review indicates that Grades and GPA are the most commonly used measures of academic achievement. (York Travis T.et al., 2015)

The key to obtaining success in learning is to give full attention and concentration during the process of teaching and learning. Attention and concentration help students to develop their cognitive intelligence and make it easier to remember facts or information communicated (Cross, 1974). It is here that a high level of emotional intelligence can help calm the mind and thus increase the absorption of information received. Thus, it will contribute to their academic achievement as a result. Maria (2004) indicates that there is a positive relationship between emotional intelligence and academic performance. It is recommended that students' academic achievement should be enhanced with the use of emotional intelligence training (Hammed, 2010). There is a positive correlation between emotional intelligence and academic performance among university students. (John B., 2016), Ramesh, et al., (2016), Gupta, N., et al., (2019). Jay Singh's (2014) scientific findings reveal

that there is a positive relationship between Emotional intelligence and academic success (Parker et.al., 2004); Bharwaney (2007); Louw and Louw (2007). The reason for the correlation between EI and Academic achievement is that academic performance involves a great deal of ambiguity and academic works are self-directed and require high levels of self-management (Rode et al,2007).

Leadership Skills: The review paper of Johnson B. (2016) titled, "Impact of Emotional Intelligence on Academic Achievement and Leadership", revealed that Students who are high academic performers usually have higher emotional intelligence scores in comparison with students who are low scholastic backwardness. EI is also a crucial factor for successful organisational leadership that impacts the success of the organisation. These leaders can create and maintain a work climate for creativity and teamwork among the employers as well as the customers. Scientific Studies also show that Different elements of emotional intelligence, such as self-awareness, emotional management and empathy are the most commonly used skills and they have a significant correlation with academic achievement. Thus, Emotional intelligence is a key to effective leadership and trusting relationships that contribute to teacher satisfaction and performance (Yahaya et al., 2012).

Objectives

1. To measure the Emotional intelligence, academic achievement and leadership skills of Indigenous higher secondary students.
2. To examine the Emotional intelligence, Academic achievement and leadership skills of male and female tribal students.
3. To find out the relationship between Emotional intelligence, academic achievement and leadership skills of the tribal students.

Hypothesis

$H_0$1: There is no significant difference in the level of Emotional intelligence between male and female tribal higher secondary students.

$H_0$2: There is no significant difference in the level of leadership skills between male and female students.

$H_0$3: There is no significant difference in the level of academic achievement between male and female students.

Ho4: There is no significant relationship between Emotional intelligence and academic achievement, Emotional intelligence and leadership skills, and academic achievement and leadership skills among the tribal higher secondary students.

Methodology

Research Design: The present study adopted a Quantitative approach based on a correlational research design to examine the relationship among the variables, such as Emotional Intelligence, Academic achievement and leadership skills of the tribal adolescents.

Sampling and Sampling Technique: The study has adopted a Purposive random mixed sampling technique. A standardised questionnaire survey was conducted among 90 student leaders (40 females and50 males) of higher secondary school students of 5 English medium schools of West Tripura to measure the Emotional intelligence, academic achievement and leadership skills, including demographic details of the respondents. The age of the Respondents was 16-19 years old.

Tools Used for Data Collection: The Emotional Intelligence Test (EIT)of Ekta Sharma (2011) is used to measure the Emotional intelligence of students, which has five components: Self-Awareness, Managing Emotions, Motivating Oneself, Empathy and Handling Relationships. The Standardised 'leadership skill questionnaire' to measure leadership skills has three components, administrative skills, interpersonal skills and Conceptual skills. The mark percentage of the student is used to measure academic achievement. Descriptive statistics, such as mean and standard deviation used for measuring students' Emotional intelligence and leadership skills and academic achievement. The hypothesis was tested by inferential statistics using a t-test and correlation.

Procedure: The researcher contacted five higher secondary English medium schools and obtained permission to meet the student leaders and house leaders of the present academic year, as well as students who were leaders in the school within two years. Rapport was built and explained about the research topic. Respondents were told that their participation in filling up the questionnaire was voluntary and the respective data would be confidential and used only for research purposes. The Emotional intelligence test by Ekta

Sharma (2011), the Leadership questionnaire and demographic details, including the mark percentage, are collected from the respondents. Verbal instructions were given before administering the questionnaire to the respondents. Respondents were asked to read the questions and mark their preference honestly and were informed to mark what is most closely associated with the individual. It is only your choice of what appeals to you most.

Data and Results

Group	**Gender**	**Ethnicity**	**Age range**	**Number of tribal Student Leaders**	**Area**
Male	Male	Tribal	16-19	50	West Tripura district schools
Female	Female	Tribal	16-19	40	West Tripura district schools
			Total	90	

Table 1: demographic distribution, which gives insight into the sample

Variable	Gender	N	Mean	Std. Deviation	Total N	criteria	Frequency	Percent (%)
Emotional	Female	40	2.1750	.38481	90	Below Average	Nill	
Intelligence	Male	50	2.1200	.32826		Average	77	85.6
						High	13	14.4
Academic	Female	40	2.78	.920	90	Simple pass	16	17.8
Achievement	Male	50	2.18	.873		Average	30	33.3
(Mark%)						Above Average	32	35.6
						Excellent	12	13.3
Leadership	Female	40	2.6000	.49614	90	Below average	Nill	
Skills	Male	50	2.7600	.43142		Moderate/medium	28	31.1
						High skills	62	68.1

Table 2: Descriptive statistics for emotional intelligence, academic achievement and leadership skills

Variable	Group	t-value	df	Sig(2tailed)	Mean difference	Level of significance	Hypothesis
Emotional Intelligence	Female andMale	.732	88	.466	.055	p>0.05	Accepted
Academic achievement	Female andMale	3.137	88	.002	.595	P<0.05	Rejected
Leadership skill	Female andMale	1.635	88	.106	-.1600	p>0.05	Accepted

Table 3: Independent sample t-test for emotional intelligence, academic achievement and leadership skills

Variables	**Academic achievement**	**Leadership skill**	**Emotional intelligence**
Academic achievement	1		
Leadership skill	-.092	1	
Emotional intelligence	-.162	.140	1

Table 3: Correlation between Academic achievement, leadership skills and Emotional intelligence of tribal students.

Discussion

Table 1: gives us an insight into the demographic details of the participants. The table clearly shows the groups, gender (male and female), ethnicity (tribal), age range (16-19) and the respective number of students (50M and40F =T=90) and a total of 90 tribal student leaders from five English medium schools of west Tripura is taken as sample.

Table 2: dwells into the descriptive data of variables such as emotional intelligence, academic achievement and leadership skills of tribal higher secondary students. The emotional intelligence of indigenous students is 85.6% (77) Average and 14.4% (13) High. There is none below the average. The mean score of the female students is 2.17, standard deviation is.384 And the mean score of the Male students is 2.12. and standard deviation is .32. The table shows a slight edge towards the emotional intelligence of female students as compared to male students. Thus, the mean difference between the male and female students' Emotional Intelligence is .055. When we take the Academic achievement variable of the students, 17.8% (16) had a simple pass, 33.3% (30) average, 35,6% (32) above average and 13.3% (12) as excellent. The female student's mean score of academic achievement is 2.78, std, deviation .92 and the male mean score is 2.18 and std. Deviation .87. The mean difference between the male and female students' academic achievement is .59. The female students scored high in academic achievement as against their male counterparts. Concerning leadership skills, 31.1% (28) scored moderate skills, and 68.1% (62) showed high skills of leadership. There is none where average leadership skills are exhibited. The female students' mean score is 2.60, and the standard deviation is .49, the male students' mean score is 2.76, the standard deviation is .43, and the mean difference is -.16. The leadership score indicates that Male students scored higher than their female counterparts. The table clearly shows that Indigenous students are Average in their measure of Emotional intelligence and academic achievement. However, the students showed High skills with regard to leadership skills. The female students' mean score is slightly higher concerning Emotional intelligence and academic achievement as compared to male students. But in relation to leadership skills the male students have a slight edge as compared to their female counterparts. The enhanced patrilineal tribal culture is very favourable to the male students for their performance in leadership skills. For female students, lack of opportunities, societal tribal ethos, attitudes and taboos may hinder fully exhibiting their leadership qualities.

Table 3: gives an answer to the pertinent question of whether there is a significant difference between male and female students concerning their emotional intelligence, academic achievement and leadership skills. The p-value of Emotional intelligence is .466 ($P>0.05$), Academic achievement .002 ($P<0.05$) and leadership skills .106 ($P>0.05$). The table clearly shows that there is no significant difference between male and female students in their

emotional intelligence and leadership skills. Thus, the null hypothesis ($H_0$1) and ($H_0$2) is accepted**.** H01: There is no significant difference in the level of Emotional intelligence between male and female tribal higher secondary students. H02: There is no significant difference in the level of leadership skills between male and female students. However, there is a significant difference found in the academic performance of male and female students. Thus, the null hypothesis ($H_0$3) is rejected and the alternative hypothesis is accepted. (H3): There is a significant difference in the level of academic achievement between male and female students.

Table 4: clearly shows there is no correlation between the three variables among the tribal students. It illustrates that Emotional intelligence and academic achievement, (-.162) shows a low negative correlation. Leadership skills and academic achievements (-.092) show a low negative correlation and leadership skills and Emotional intelligence (.140) show a low positive correlation. Therefore, there is no significant relationship between the variables under study. Thus, the null hypothesis ($H_0$4) is accepted. **($H_0$4):** There is no significant relationship between Emotional intelligence and academic achievement, Emotional intelligence and leadership skills, and academic achievement and leadership skills among the tribal higher secondary students.

Summary of the Findings

1. The study finds that a high percentage of Indigenous students are average (85.6%), High (14.4%) and low (0%) in their emotional intelligence.
2. Academically, 17.8 %secured a simple pass, 33.3 % average, 35.6% secured above average, and 13.3% were excellent.
3. The study finds that 31.1% of students were moderate in their leadership skills and 68.1% exhibited high skills in leadership. There was none, 'below average'. Thus, in nut nutshell, Indigenous students are 'Average' in their measure of Academic achievement, and emotional intelligence. But leadership skills ranking is "high".
4. There is no significant difference between males and females concerning Emotional intelligence and leadership skills. Female student showed high Emotional intelligence and academic achievement in comparison with their male counterparts. Male students showed better leadership skills in comparison to female students. There is a significant difference in academic

achievement between male and female students. sig(2tailed) .002 at .05 level.

5. The study found that there is no significant correlation between the three variables among the tribal students under study.

Limitations

1. Sample Size representing only a few schools of higher secondary students So, the generalization of the study findings is limited.
2. The accessibility to educational institutions in early childhood, the lifestyle and social system of Indigenous students and the educational qualification of their parents are not taken into consideration in the study. They do affect emotional intelligence, academic achievement and leadership skills.
3. The questionnaire lacked cultural and tribal ethos and contained popular culturally loaded questions about Emotional intelligence and leadership skills. The Tribal worldview of these three variables is different from the rest of the worldview. A qualitative study will be essential for the understanding of the tribal worldview and their ethos in the study.

Implications

1. Govt policy makers, academicians and planners to implement strategies effectively to improve Emotional Intelligence, academic achievement and leadership skills of the students in the higher secondary level, taking into consideration the Indigenous cultural, social and traditional context
2. Awareness Programmes, strategies and action plans about emotional intelligence, academic endeavours and training of leadership skills in the schools will boost the self-image of the Indigenous students, and they will be able to cope with the academic stress and get a different worldview of life.

Conclusion

The conclusions of the study are in line with previously published research that there is no significant difference in emotional intelligence, academic performance and leadership skills between the tribal males and females. Within the group, there is no significant difference (Bhattacharjee, A., and Debbarma, R., 2015; Tripathi, I., 2015; Gosh, D., 2015; Anjali, D., 2015). The studies are limited when it comes to the correlation of these variables

within the tribal group, though there are many studies done in the nontribal world which has a significant correlation of these variables. These findings emphasise the significance of acknowledging and incorporating educational programmes and curricula in developing an individual's emotional intelligence and leadership skills in the educational system. Teachers also need to be trained to foster an emotionally intelligent school environment that leads to academic achievement and leadership skills

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Declaration: The authors declare works of this research are original and that this manuscript has not been published earlier, and has not been submitted for publication in any other journals.

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Bridging the Gender Digital Divide: Smartphone Ownership, Digital Literacy, and Access among Spouses in Poonthura, Kerala

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Abstract

The concept of the digital divide has evolved alongside technological advancements, with "digital gender gap" first articulated by UN Women in 2010 to highlight disparities in digital access and usage between men and women. This study explores the gender digital divide among spouses in Poonthura, Kerala, focusing on smartphone ownership, digital literacy, and access to digital services. Using a stratified random sampling method, 60 respondents were selected from seven wards in the region. The study employs a quantitative survey design to assess the differences in smartphone ownership, usage, and digital proficiency between male and female spouses. The study aims to compare smartphone ownership rates among spouses in Poonthura; assess the digital literacy levels of male and female spouses and investigate the barriers to digital access and usage faced by spouses, with particular focus on socio-economic factors. The findings reveal that men are more likely to own smartphones, with women often lagging behind as late adopters. The study also highlights significant gaps in digital literacy, with women demonstrating lower familiarity with basic smartphone functions and online financial services. Furthermore, barriers such as cost, lack of digital skills, and socio-cultural factors contribute to women's limited access and engagement with digital technology. The research underscores the need for targeted policy interventions, including subsidized smartphone programs for women, and community-based digital literacy initiatives. It also emphasizes the role of social work advocacy in promoting gender equality in digital access, addressing patriarchal

structures, and fostering cultural change to encourage women's digital participation. This study offers practical recommendations to policymakers and social workers working to bridge the gender digital divide in rural Kerala and similar settings.

Keywords: *Gender Digital Divide, Digital Literacy, Digital Consumption, Internet Access.*

1. Introduction

The term "gender digital divide" refers to the inequality between genders in terms of access to, use of, and benefits from digital technologies. In the contemporary digital age, access to and proficiency in using digital technologies are essential for participation in economic, educational, and social spheres. However, the "gender digital divide" continues to hinder progress toward gender equality, encompassing issues such as unequal access to technology, a lack of digital literacy, differences in digital skills, and the overall impact of digital exclusion on different genders (UN Women, The Global Gender Gap Report, 2022). This divide has severe consequences in multiple areas. In education, the lack of digital technologies limits learning opportunities and skill development. In the employment sector, digital skills are crucial for modern job prospects, and women excluded from digital competence may face a mismatch in the job market. Additionally, from a health perspective, digital technologies ease access to health information and services, facilitating early detection and informed decision-making. Limited access to these resources exacerbates health inequalities (UN Women, 2021).

The study on the gender digital divide in Poonthura has the potential to significantly impact the region by addressing key barriers to digital access and usage among women. A key benefit of this research is its potential for empowering women through digital literacy and education. By examining how existing initiatives like the Pradhan Mantri Gramin Digital Sakshartha Abhiyan (PMGDISHA) can be better tailored to meet the specific needs of women in Poonthura, the study could drive economic empowerment. Improved digital literacy and internet access would enable women to engage in online entrepreneurship, allowing them to start and manage small businesses from home. This would contribute to their financial independence and the overall economic development of the community.

Review of Literature

Huyer (2018) conducted a mixed-methods study, employing quantitative surveys and qualitative interviews, with a sample of 1,200 women from both rural and urban households. The findings reveal that women's access to digital technology and the internet remains highly constrained, primarily because men are regarded as the primary decision-makers within households. They typically control financial resources and make key decisions regarding technology purchases. Consequently, women's digital access is largely dependent on male approval or mediated through shared access via a family member (Huyer, 2018).

Thomas and Nair (2021) explore how gender dynamics within the framework of household patriarchy in Kerala influence women's access to digital technology. Employing a mixed-methods research design that combined quantitative surveys with qualitative interviews, the study engaged a sample of 400 participants from both rural and urban areas, with particular emphasis on the districts of Thiruvananthapuram, Ernakulam, and Kozhikode. Despite Kerala's high literacy rates, the findings indicate that women's access to digital devices and the internet remains significantly restricted in households where traditional gender roles persist. In many such households, men were found to be the sole or dominant authority in decisions regarding the use of technology, resulting in minimal or no access to digital tools for women (Thomas and Nair, 2021).

A study conducted in the Netherlands, the United States, and South Africa employed a mixed-methods research design, combining quantitative surveys and qualitative interviews with a total sample of 1,200 respondents. The study population was diverse, encompassing various socio-economic groups and regions within each country. The findings indicate that across a wide range of online activities, women consistently reported lower levels of digital technology use compared to men. While women were found to be more frequent users of the internet for communication and social media, men predominantly used it for information retrieval and gaming. These differing usage patterns have significant implications for professional and educational opportunities. Moreover, the study highlights that the digital gender divide is further intensified by socio-economic factors such as income and education, with women from lower-income and less-educated backgrounds experiencing the most pronounced forms of digital exclusion (Dijk, 2020).

Beauchamp and Kennewell (2020) investigated whether digital literacy education could effectively address the gender digital divide. The study employed a mixed-methods approach, combining quantitative survey data with qualitative insights from one-on-one interviews. The sample included over 1,000 teachers and students across multiple countries. The findings suggest that while educational interventions significantly improved digital literacy levels among women and girls, their overall impact was often limited by enduring socio-cultural and economic barriers. The study concludes that programs integrating digital literacy with broader initiatives—such as educational reform and economic empowerment—are more likely to achieve lasting reductions in gender-based digital disparities (Beauchamp and Kennewell, 2020).

Theoretical Framework

The study of the gender digital divide, particularly in the context of spouses in Poonthura, Kerala, draws upon multiple theoretical perspectives that explore the intersection of gender, technology, and socio-economic factors. Several prominent frameworks, including feminist theory, digital inclusion, technological diffusion theory, and social work advocacy, provide a comprehensive lens through which the findings of this study are analyzed.

Feminist Theory and Gendered Digital Exclusion: Feminist theory highlights how gendered social structures and power dynamics influence access to resources, including digital technologies (Harding, 2004). In patriarchal societies, men often control the financial resources and decision-making processes within households, which significantly limits women's access to technologies such as smartphones (Huyer, 2018). This theoretical lens helps explain how the gender digital divide is not merely a technological issue but one rooted in gendered power relations. Feminist theorists argue that technology is socially constructed and is often used to perpetuate existing inequalities. In this study, the gendered digital divide is seen as a reflection of broader societal gender inequalities, which need to be addressed through gender-sensitive policy interventions and educational programs.

Digital Inclusion and Exclusion: Digital inclusion is a concept central to the study of access to technology. It refers to the equitable access to and use of digital technologies, aiming to bridge the gap between those with and without access to digital resources (DiMaggio and Hargittai, 2001). The

gender digital divide in this study is examined through the lens of digital inclusion, where women's limited access to smartphones and digital services highlights a form of digital exclusion (Gurstein, 2000). This exclusion not only restricts women's access to information but also limits their opportunities for education, employment, and social participation. Policies aimed at increasing digital literacy and technology access for women are critical to fostering digital inclusion and ensuring that women can participate equally in the digital world.

Technological Diffusion Theory: The diffusion of innovations theory (Rogers, 1962) provides a useful framework for understanding the patterns of technology adoption in the community. According to Rogers, individuals adopt new technologies at different rates, categorized as innovators, early adopters, early majority, late majority, and laggards. The findings of this study align with the theory, showing that women in Poonthura are generally late adopters of smartphones, often due to socio-cultural and economic barriers. Men, in contrast, tend to adopt smartphones earlier, which reflects gendered patterns of technology diffusion. The theory helps explain how the unequal adoption of smartphones within households contributes to the digital divide and suggests that targeted interventions are necessary to facilitate more equitable technology adoption.

Social Work Advocacy and Empowerment: Social work theory plays a key role in advocating for social change and empowerment, particularly in marginalized communities. Social workers, through advocacy and community engagement, can challenge patriarchal structures that limit women's access to digital resources (Lloyd and Piven, 2008). This study draws on the empowerment model of social work, which emphasizes the importance of community-based interventions aimed at fostering digital literacy and promoting gender equality (Gutierrez, 2001). Social workers are uniquely positioned to facilitate cultural change and advocate for inclusive policies that ensure both genders have equal access to digital technologies. By organizing digital literacy workshops and peer learning groups, social workers can play a vital role in narrowing the gender digital divide.

Social Capital Theory: The social capital theory (Bourdieu, 1986; Putnam, 2000) suggests that individuals can leverage their networks of relationships to access resources, including technology. This theory is relevant to

understanding how social networks and community ties affect digital access. In this study, women often have limited opportunities to gain digital skills independently, relying on others, such as their children, for guidance. In contrast, men are more likely to learn digital skills on their own, using resources within their social networks. Social capital theory underscores the need for community-based learning environments, where women can build their own networks and access digital knowledge to increase their social capital in the digital sphere.

Cultural Change and Gender Norms: Cultural norms and gender stereotypes are central to understanding women's limited engagement with digital technologies. Gender stereotypes often dictate that technology is the domain of men, limiting women's access to and use of digital tools (Vasquez, 2015). Social workers can help challenge these stereotypes through community-based interventions, working with families, leaders, and other stakeholders to promote inclusive attitudes towards women's digital participation. This study suggests that addressing these stereotypes is essential to empowering women and promoting gender equality in digital access.

Objectives and Methodology

The primary objective of this study is to examine the gender digital divide among spouses in Poonthura. Specifically, the study aims to compare spouses in terms of smartphone ownership, levels of digital literacy, and patterns of digital consumption, in order to understand how gender influences access to and use of digital technologies within the household context.

Variables

The study examines the gender digital divide among spouses in Poonthura. The independent variable is gender (husbands vs. wives). Dependent variables include smartphone ownership, usage duration, digital literacy, internet access and usage frequency, engagement with social media and digital platforms, use of online financial tools, and subscription to digital media services. Age, education level, and income group are included as control variables.

Participants

The population for the study includes married individuals residing in Poonthura, a coastal region in Thiruvananthapuram, Kerala. The sample size consists of 60 spouses (30 couples), selected from seven wards in the area. A stratified

random sampling technique was used to ensure representation across key demographic categories such as age, education level, and socio-economic status. The stratification helped reduce sampling bias and enhanced the generalizability of the findings to the broader community context.

Materials

The study utilized both primary and secondary sources to collect and analyze data on the gender digital divide. The primary data collection tool was a self-structured interview schedule specifically designed to gather quantitative data on aspects such as digital access, literacy, and usage patterns among spouses. This schedule included a combination of closed-ended questions aimed at capturing frequencies and proportions, as well as categorical response options to allow for meaningful comparisons. In addition to primary data, the study drew on secondary sources to provide context and support for the findings. These included reputable publications such as the GSMA Mobile Gender Gap Report (2023), the IAMAI Digital in India Report (2022), and other scholarly journal articles and digital literacy policy documents, which offered insights into national trends and helped contextualize the data collected in Poonthura.

Data Analysis

The data collection process involved face-to-face interviews using the structured interview schedules. The responses were coded and organized into frequency tables and represented visually through bar and pie charts. The data were categorized by gender to facilitate a comparative analysis of digital access and literacy. Descriptive statistics, including frequencies and percentages, were employed to summarize the data effectively. The analysis focused on identifying gender-based differences in smartphone ownership, internet access and usage duration, familiarity with smartphone features, and use of digital platforms such as social media, online payments, and shopping. The Chi- square test was used to validate the significance. To validate and contextualize the findings, comparative insights were drawn from national reports and relevant literature on the digital gender divide.

Analysis and Results

Table 1

Smartphone ownership among spouses

Respondents	Response	Frequency	Percentage
Husbands	Yes	44	73.1
	No	16	26.9
Wives	Yes	34	55.7
	No	26	44.3

Table 1: indicates the smartphone ownership of husbands and wives, 73% husbands own smartphone and 55.7% wives owns smartphone. The difference suggests that husbands are more likely to own smartphones than wives.

Table 2

Years of owning a smartphone

Years of owning a smartphone		Frequency	Percentage	Total
Husbands	No phone	16	26.9	100
	More than 5 years	44	73.1	
Wives	No phone	27	44.3	100
	Less than 1 year	8	13.1	
	3-5 years	25	42.6	

Table 2, illustrates 44. 3% of wives have owned a smartphone for three to five years and 13. 1% of wives have owned a smartphone for less than a

year. Whereas, 73% of husbands owning a smartphone has owned for more than 5 years. It clearly shows that women are comparatively late adopters of smartphones even among those who own them. The *GSMA Mobile Gender Gap Report* highlights that men are generally earlier adopters of digital technologies, including smartphones, with women lagging behind by several years on average. This pattern is consistent with national trends where women are generally later adopters of smartphones, reinforcing the gender digital divide (Shannon, 2020).

Fig. 1

Reasons for not owning a smartphone among spouses

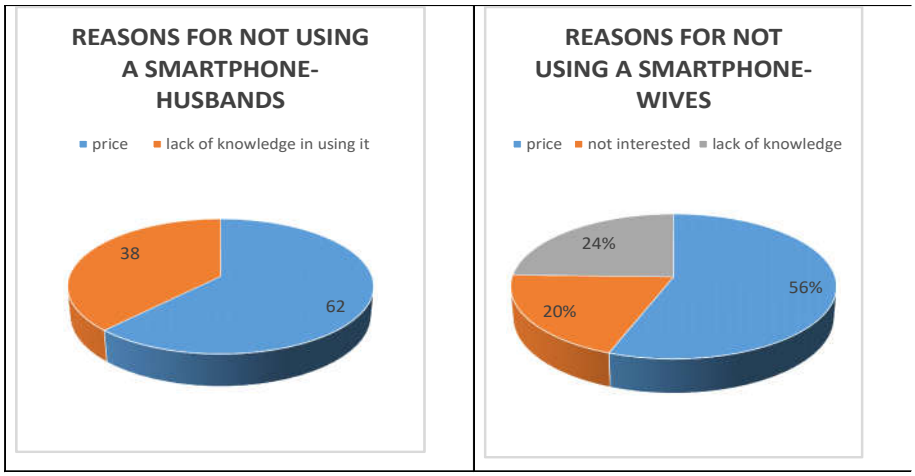

Fig 1, shows the reasons of the husbands who don't own a smartphone, 62% husbands don't own because of the price, 38% husbands because of lack of knowledge in using it. According to the *GSMA Mobile Gender Gap Report 2023, p*rice remains the most significant barrier to smartphone adoption in India, particularly among lower-income groups. Nationally, the cost of devices and data plans is cited by a significant portion of the population as a reason for not owning a smartphone, similar to the 62% of husbands in Poonthura who report price as a barrier. Lack of knowledge or skills to use smartphones is another critical barrier (Shannon, 2020). The reason of the wives who don't own a smartphone, 56% don't own a smartphone

because of the price followed by 24% accounting for lack of knowledge in using it and 20% not interested. According to *Internet and Mobile Association of India (IAMAI) Digital in India Report 2022*, Cost is the most frequently cited barrier to smartphone ownership among women in India, with financial constraints disproportionately affecting women due to lower income levels and financial independence. The 56% of wives in Poonthura who cite cost as the primary barrier aligns with this national trend. Lack of digital skills is a significant barrier for women, especially those with lower educational attainment (Internet and Mobile Association of India, 2022).

Fig. 2

Understanding of Basic features of phone among spouses

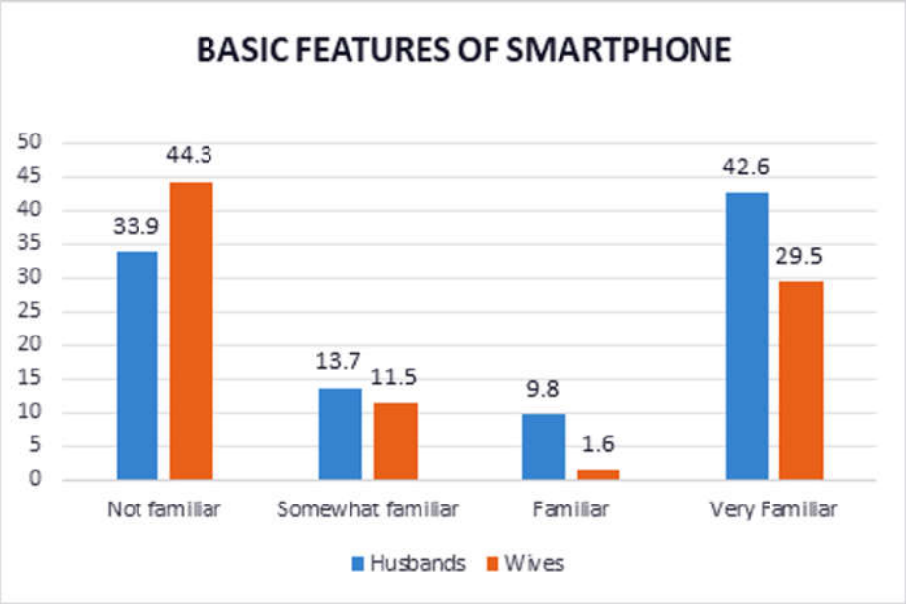

Figure 2, indicates 42. 6% of husbands are very familiar with the fundamental functions of smartphones compared to 32. 9 % who have no familiarity at all. Wives on the other hand are only 29. 5% very familiar with these features with a sizable 44. 3% not familiar. According to the *National*

Digital Literacy Mission and the *GSMA Mobile Gender Gap Report 2023*, a substantial portion of the Indian population is still not fully familiar with smartphone functions beyond basic usage (NASSCOM, 2022). The *GSMA Mobile Gender Gap Report 2023* highlights that men in India generally report higher familiarity with advanced smartphone features compared to women. This is consistent with the trend observed in Poonthura, where 42.6% of husbands are very familiar with fundamental smartphone functions, while only 29.5% of wives share this level of familiarity (Shannon, 2020).

Table 3

From where did the participants learned using smartphone

Respondents	Learned by themselves	Learned from partner	Learned from children	Others	Total
Husbands (%)	55.7	0	42.6	1.7	100
Wives (%)	13.1	29.5	45.9	9.8	100

Table 3: According to the data most husbands (55. 7%) learned smartphone usage skills on their own indicating some degree of independence in learning digital skills. husbands also learned from their children 42. 6% of the time compared to only 1.7% who learned from others. This indicates that children have a big part in passing on digital knowledge to their parents within the family unit especially to fathers. On the other hand, wives have access to a wider range of learning resources. Wives like husbands rely heavily on younger family members for digital guidance is noteworthy that is 45. 9% of women claimed to have learned how to use smartphones from their children. But compared to husbands' fewer wives (13%) learned how to use smartphones on their own. On the other hand, a noteworthy 29.5% of wives gained knowledge from their partners underscoring the husband's role in helping their wives become digitally literate. Furthermore 9.8% of women said they had learned from friends and neighbors.

Fig. 4

Access to internet in the smartphone

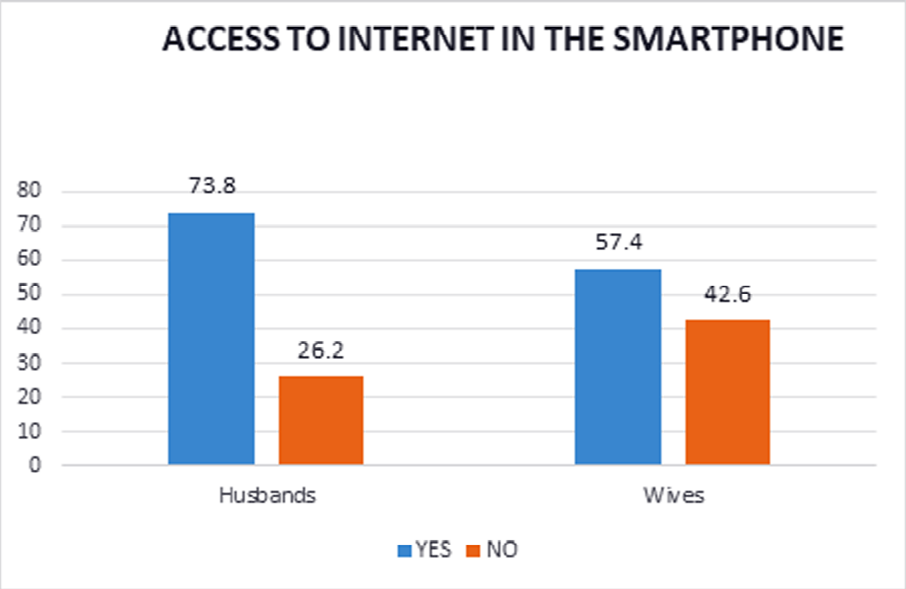

Figure 4, shows that 73. 8% of husbands and only 57. 4% of wives own smartphones with internet connectivity. A substantial gender disparity in digital connectivity within the community is highlighted by the gap of more than 16 %. According to the *GSMA Mobile Gender Gap Report 2023*, Nationally, 67% of men own a smartphone compared to 51% of women, reflecting a gender gap of 16%. When it comes to smartphones with internet connectivity, 60% of men and 40% of women in India are reported to own such devices, highlighting a gender disparity of approximately 20% (Shannon, 2023). In Poonthura, the disparity observed is consistent with the broader digital gender divide seen across India, where social, economic, and cultural factors contribute to uneven access to digital resources.

Fig. 5

How often internet is used among spouses

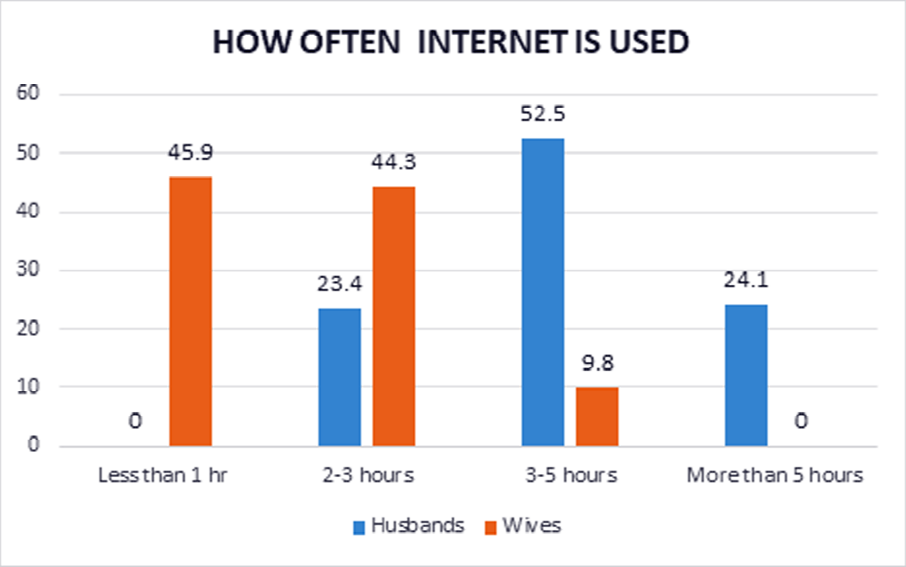

Fig. 5, 52. 5% of husbands use the internet for three to five hours every day while 23.4% use it for two to three hours, no husbands use internet for less than an hour. On the other hand, only 44.3 % of wives use the internet for 2-3 hours per day and 45. 9% use it for less than an hour, no wives use internet for more than 5 hours. A substantial portion of men, about 50%, use the internet for 1 to 3 hours daily. Approximately 30% use it for 3 to 5 hours daily, and a smaller fraction, around 10%, use it for more than 5 hours daily. Women's internet usage also shows a significant portion using it for 1 to 3 hours daily (about 45%). Around 25% of women use the internet for 3 to 5 hours, while about 20% use it for less than 1 hour. 52.5% use the internet for 3 to 5 hours daily, while 23.4% use it for 2 to 3 hours. No husbands use the internet for less than an hour. 44.3% use the internet for 2 to 3 hours daily, and 45.9% use it for less than an hour. No wives use the internet for more than 5 hours.

Fig. 6

Usage of social media platform of spouses

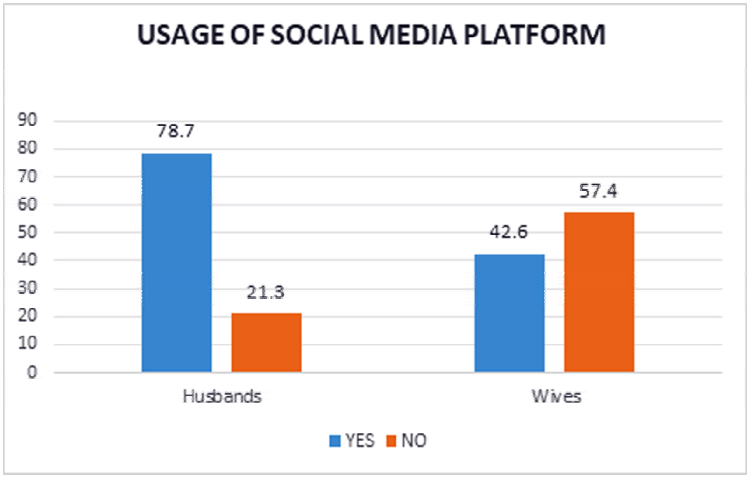

Fig. 6, indicates the usage of social media among spouse, 78.7% husbands use social media platforms and 21.3% don't and 42.6% wives used social media platforms and 57.4% don't.

Fig. 7

Understanding of online financial platforms

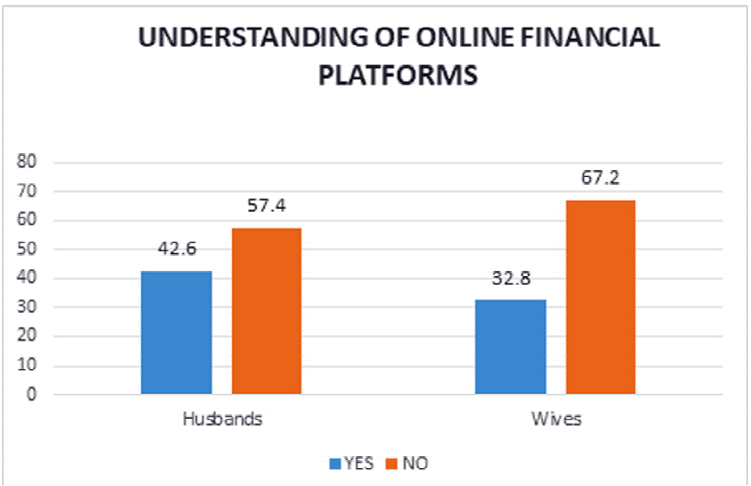

Fig. 7, shows the understanding of spouse in using online financial platforms, 57.4% husbands having smartphone have an understanding in using online financial platforms while 42.6% not and 32.8% wives having smartphone have an understanding in using online financial platforms while 67.2% not.

Fig. 8

Ever made an online payment by spouses

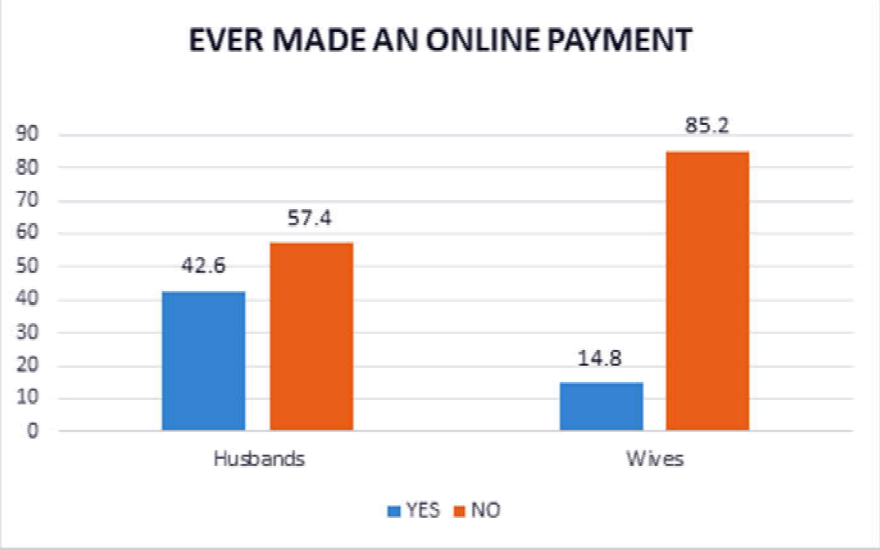

Fig. 8, indicated whether spouse ever made an online payment, 42.6% husbands have made an online payment while 57.4% not and 13.1% women have an made online payment while85.2% not made any online payment. To connect the data on online payment usage in Poonthura with national averages, you'll need to reference recent data on online payment adoption.

Fig. 9

Understanding of spouses on online shopping

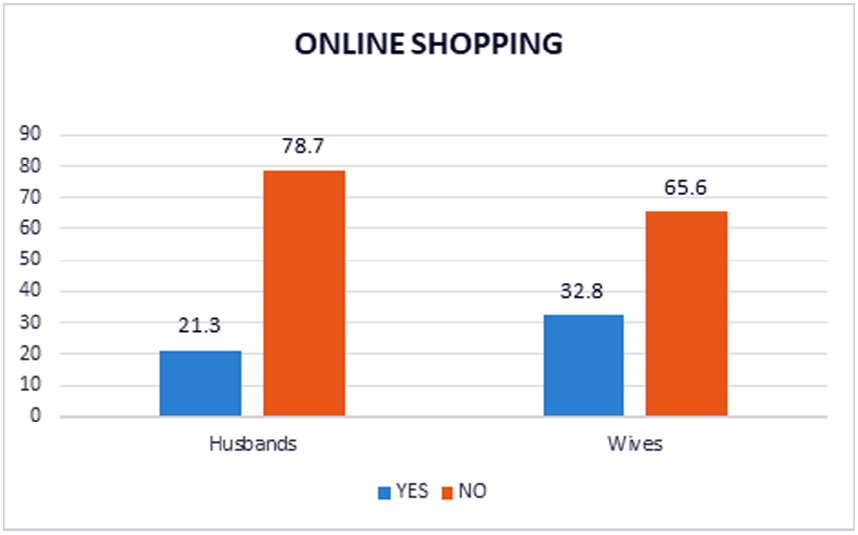

Fig 9, shows the understanding of online shopping platforms among spouse. 21.3% men knows about online shopping platforms and 78.7% don't whereas 34.4% wives know about online shopping platforms and 65.6% don't.

Table 4

Subscription of paid online medias

Respondents	Subscription of paid online medias	Frequency	Percentage
Husbands	No subscription	60	100%
Wives	No subscription	60	100%

Table 4, shows no spouse have no subscription in any online media platforms. The absence of any online media subscriptions among spouses in Poonthura.

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Table 5

Chi-square test of ownership of smartphones among spouses

Ownership of smartphones among spouses	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	12.691[a]	1	.000		
Continuity Correction[b]	10.538	1	.001		
Likelihood Ratio	17.485	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	12.479	1	.000		

Table 5, shows the Chi-Square Test to see if there is a link between gender (husbands vs. wives) and smartphone ownership. The test gave a Pearson Chi-Square value of 12.691 with a p-value of 0.000, which is less than 0.05. This shows the result is statistically significant. Other tests, like the Continuity Correction, Likelihood Ratio, and Fisher's Exact Test, also showed the same result. The Linear-by-Linear Association test confirmed the trend. Therefore, the findings show that gender affects smartphone ownership, with husbands more likely to own smartphones than wives.

Table 6

Chi-square test for understanding the basic features of smartphone among spouses

Understanding of basic features of smartphone among spouses	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	15.978[a]	1	.000		
Continuity Correction[b]	13.626	1	.000		
Likelihood Ratio	21.333	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	15.712	1	.000		

Table 6, The Chi-Square Test shows there is a link between gender (husbands vs. wives) and understanding of basic smartphone features. The test results showed a Pearson Chi-Square value of 15.978 with a p-value of 0.000, which is less than 0.05. This means the difference is statistically significant. Other tests, like the Continuity Correction, Likelihood Ratio, and Fisher's Exact Test, also showed significant results. This confirms that there is a strong association between gender and understanding of smartphone features, with husbands showing a better understanding than wives.

Table 7

Chi-square test to understand the usage of social media among spouses

Usage of social media among spouses	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	59.182[a]	4	.000
Likelihood Ratio	68.451	4	.000
Linear-by-Linear Association	22.742	1	.000

Table 7, the Chi-Square Test shows the relationship between gender (husbands vs. wives) and how they use social media. The Pearson Chi-Square value is 59.182 with a p-value of 0.000, which is much lower than 0.05. This shows a highly significant difference between husbands and wives in their use of social media. The Likelihood Ratio and the Linear-by-Linear Association also support this result with p-values of 0.000. In simple terms, the data clearly shows that social media usage patterns differ significantly between husbands and wives.

Major Findings and Discussion

1. Feminist Political Economy and Gendered Digital Divide

The gendered disparities observed in smartphone ownership, usage, and digital literacy can be understood through the lens of feminist political economy. This theory posits that gender inequality is not merely a product of individual biases but is deeply rooted in socio-economic structures that privilege men over women. In the context of digital technology, feminist political economy

argues that access to digital tools is inherently shaped by broader patriarchal structures where men control economic resources, social capital, and decision-making power within households. These power dynamics influence how technology is perceived and utilized.

In Poonthura, the findings show that husbands tend to own smartphones at higher rates and often possess more advanced digital skills, while wives are restricted in their access, both in terms of ownership and usage. This reflects a traditional division of labor and control in household resources, where technology acquisition is viewed as a masculine activity, driven by men's authority over household finances. Feminist scholars argue that the digital divide is not just a technological issue but one that intersects with gendered power relations, where women are positioned as secondary actors in the digital world. As such, the gender digital divide cannot be fully addressed without confronting these underlying social inequalities.

2. Digital Inclusion and the Socio-Cultural Context of Technology Adoption

Digital inclusion refers to the process of ensuring equitable access to technology, digital literacy, and the opportunities that arise from digital participation. This concept is central to addressing the digital divide and is particularly important when examining gender disparities. Digital inclusion emphasizes not just access to devices but also the skills, resources, and support systems required for individuals to fully participate in the digital economy and society.

The findings from Poonthura, particularly regarding the late adoption of smartphones by women and their limited engagement with digital platforms like online banking or e-commerce, reflect barriers to digital inclusion that go beyond mere access to technology. Women's limited digital literacy, such as unfamiliarity with basic smartphone functions, illustrates the need for targeted digital literacy programs that go beyond basic skills to foster deeper, more sustained engagement with technology. Digital inclusion models stress that simply providing women with access to digital devices is insufficient; a broader, more nuanced approach is necessary to address the cultural and socio-economic barriers that prevent women from fully benefiting from digital resources.

Additionally, the gendered nature of learning pathways, with husbands tending to learn digital skills more independently and wives relying more on familial support, further highlights the need for inclusive digital literacy education that empowers women to take ownership of their digital learning. This approach is aligned with digital inclusion frameworks that advocate for empowerment, encouraging women to not just use technology but to understand and control its use in ways that align with their goals and aspirations.

3. Digital Exclusion and Its Gendered Manifestations

The concept of digital exclusion builds on the notion of access but goes further to address the systemic factors that prevent individuals from fully participating in the digital world. While access to digital devices is an important first step, digital exclusion involves broader issues like affordability, skills, confidence, and opportunity. For women in Poonthura, digital exclusion manifests not just in their lower rates of smartphone ownership but also in their limited engagement with online services, such as financial platforms and internet connectivity.

One key aspect of digital exclusion for women is financial exclusion. The study's findings on women's lower participation in online financial platforms, compared to men, point to a gendered form of digital financial exclusion. Women's lack of familiarity with digital finance tools is rooted in both knowledge gaps and fear, which are often compounded by socio-cultural factors that limit their economic independence. According to digital exclusion theory, such gaps are not merely a matter of access to tools but are the result of systemic barriers, like lower levels of education, limited economic empowerment, and entrenched gender norms, that constrain women's ability to engage with digital technologies in meaningful ways.

The findings also underscore the need to deconstruct the gendered dimensions of digital exclusion. For instance, women's greater participation in online shopping, while positive in some ways, reveals a pattern of narrow digital engagement, where women are more likely to use the internet for consumption rather than for broader professional, educational, or financial purposes. This limited engagement is a direct consequence of socio-cultural structures that constrain women's roles in society, keeping them relegated to domestic or consumer-centric activities. Digital exclusion models emphasize the need to

broaden women's digital engagement, ensuring they have the skills, confidence, and opportunities to participate in a wide array of digital spaces, not just those deemed appropriate for their gender roles.

4. The Intersections of Socio-Economic Status and Gender in Digital Participation

The findings also highlight the significant intersection between gender, socio-economic status, and digital access. Women from lower-income households, as indicated in the study, are more likely to face barriers related to both cost and digital literacy, further deepening their exclusion from digital opportunities. Intersectionality, as a theoretical framework, helps us understand how multiple forms of inequality-gender, class, and education-combine to create compounded disadvantages for women in accessing and using digital technologies.

For women in Poonthura, the cost of owning a smartphone or subscribing to the internet is a primary barrier. When combined with lower levels of formal education and limited financial independence, these economic factors place women at a significant disadvantage in the digital realm. The study highlights that addressing digital inclusion requires tackling not just gendered attitudes towards technology but also the broader economic inequalities that shape digital access. As such, feminist and intersectional frameworks emphasize the need for targeted policies that recognize the multi-dimensional nature of exclusion and create inclusive digital opportunities that account for both gender and socio-economic disparities.

Suggestions for Addressing the Gender Digital Divide

In light of these findings, several practical suggestions are proposed to address the gender digital divide in Poonthura, with a particular emphasis on social work interventions. The study recommends several initiatives to address the gender digital divide, particularly in terms of smartphone access and digital literacy. One key policy recommendation is the introduction of subsidized smartphone programs tailored to enhance women's access to digital devices, accompanied by education on the utility of these technologies. In addition, community-based digital literacy programs should be implemented, with peer learning groups or workshops led by experts to provide women with hands-on training and practical applications of technology. These programs should aim to bridge the significant gap in digital literacy between men and women,

addressing specific needs and fostering critical digital skills for professional, financial, and educational advancement.

Moreover, social workers are well-positioned to advocate for digital inclusion, partnering with policymakers to challenge patriarchal structures and develop policies promoting gender equality in digital access. They can also establish community support centres or online forums where women can seek support, share experiences, and learn about digital technologies, thereby creating spaces for collaborative learning. In addition to this, social workers play a crucial role in addressing gender stereotypes that hinder women's access to technology, working with families, community leaders, and other stakeholders to dispel myths and promote the benefits of digital engagement. Finally, through cultural change campaigns, social workers can encourage families to support women's digital participation, highlighting the economic, educational, and professional benefits of digital inclusion and advocating for a more equitable and inclusive digital environment.

Conclusion

The study provides valuable insights into the gender digital divide in Poonthura, underscoring the need for inclusive interventions that address both the access and skills gaps women face in the digital realm. Through policy development, community-based initiatives, and social work advocacy, substantial progress can be made toward bridging this divide, creating a more equitable digital environment for all members of the community.

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Impact of Smartphone Addiction on Study Skills and Psychological Well-being among the Young Adults

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Abstract

The present study aimed to examine the impact of Smartphone Addiction on Study Skills and Psychological Well-Being among the young Adults in Kohima, Nagaland. Employing a quantitative research design on 170 samples using convenience sampling techniques, out of which ----89 are males and 81 are females. The Smartphone Addiction Scale- Short Version, Study Skills Assessment Tool and Psychological Well-being Scale were used for the data collection. Data were analyzed using Independent Sample T-Test, Pearson's Product-Moment Correlation and Multiple Linear Regression. The findings revealed no statistical significant difference between male and female in Smartphone Addiction, Study Skills and Psychological Well-being among the undergraduate students. While Smartphone Addiction was no significantly correlated to Study Skills, a significant negative correlation was found between Smartphone Addiction and Psychological Well-being among young adults. Furthermore, Smartphone Addiction did not significantly impact study skills, however significantly impact psychological well-being among young adults in Kohima, Nagaland.

Keywords: *Smartphone Addiction, Study Skills, Psychological Well-being.*

Introduction

In today's technology world, Smartphone have become effective tools, offering numerous benefits and allows student to easily access to a large amount of

information (Punir, 2021). However, with their widespread use, Smartphone Addiction has emerged as a silent epidemic which is stealthily affecting the young adults. People immerse themselves in endless scrolling and constant connectivity, advertently sacrifice precious moments of real-world interaction and self-care (Gupta et al., 2024). Many individuals might not be aware; however, Smartphone Addiction have become a significant problem that can have a negative impact on a person's mental and behavioural health (Kokkaparambil and James, 2023) and also negatively impacted the Study skills and cognitive abilities of students' academic success (Sunday et al. 2021). Ng et al., (2017) and Sapci et al., (2020) found that students who utilized their Smartphone for university learning activities more have lower CGPA.

According to Oxford living dictionaries, (2017) a Smartphone is a " mobile phone that performs many of the functions of a computer, typically having a touch screen interface, internet access, and an operating system capable of running downloaded apps" (as cited in Whyte, 2019). Despite of the numerous benefits and the productive applications offered by smartphone, their overuse can cause a wide range of problems (Yoon et al., 2021). According to Kim, excessive use of smartphone can be the sign of Smartphone Addiction, which is defines as the inability to control the use of Smartphone (as cited in Yoon et al., 2021).

According to Vijayabanu and Sri, (2017) Study skills are strategies or approaches implemented to enhance learning. These strategies include various tactics that learners use to acquire, retain and apply knowledge effectively. However, excessive Smartphone use can impair academic performance by causing distractions, diminished focus, and procrastination (Punir, 2021). Chen and Lyu (2024) also found significant positive correlation between Smartphone Addiction and Procrastination among students. Another study done by Behzad, (2021) found that there is a relationship between Smartphone Addiction and procrastination.

Psychological well-being is the subjective feeling of contentment, happiness, satisfaction with life's experiences and of one's role in the word of work, in which individuals as well as societies are striving for (Sisoda and Choudhary, 1971). However, Kaya (2024), found that Smartphone Addiction is a risk factor for adolescents' psychological well-being and that their academic procrastination and school burnout also increase this risk.

Kokkaparambil and James (2023) conducted a study on the impact of Smartphone Addiction on Psychological Well-being among young adults on 180 participants of age group 18-40 years and found that there was a significant relationship between Smartphone addiction and psychological well-being and that Smartphone Addiction significantly impact psychological well-being among the young adults. Kumar et al. 2020, and Susmitha et al. 2023, found a negative impact of excessive Smartphone Addiction on the Psychological well-being.

Gosh et al. (2023) conduct a study on impact of Smartphone Addiction on the Study Habit and Mental Health of Higher Secondary School Students on 257 higher secondary school students in the district of Pura Bardhaman in West Bengal using simple random sampling technique and found that there is a positive correlation between Smartphone Addiction and Mental Health whereas there is a negative correlation between Smartphone Addiction and Study Habits.

Although research on Smartphone Addiction is steadily increasing, it is still relatively young compared to studies on other forms of addictive behaviour (Gupta et al., 2024). While many researchers have explored the relationship between Smartphone Addiction and Psychological well-being, as well as Smartphone Addiction and Study Skills, few have examined these aspects collectively. Therefore, the present study aims to investigate the impact of Smartphone Addiction on both Study Skills and Psychological well-being among young adults in Kohima, Nagaland.

Objectives of the Study

1. To assess the gender differences in Smartphone Addiction, Study Skills and Psychological Well-being among young adults.
2. To analyze the relationship between Smartphone Addiction, Study Skills and Psychological Well-being among young adults.
3. To determine the impact of Smartphone Addiction on Study Skills and Psychological Well-being among young adults.

Hypothesis

1. There is no significant gender difference in Smartphone Addiction, Study Skills and Psychological Well-being among young adult.
2. There is no significant relationship between Smartphone Addiction, Study Skills and Psychological Well-being among young adult.

3. Smartphone Addiction does not significantly impact Study Skills and Psychological Well-being among young adult.

Methodology

A quantitative, cross-sectional and correlation was employed to collect data on Smartphone Addiction, Study Skills and Psychological among young adults from Kohima, Nagaland. A sample of 170 (N=170, where Male= 89 and female= 81), between the age range of 16-17 were taken were taken for the study. Convenience sampling method was used for the study.

Description of the tools used

For data collection, Smartphone Addiction Scale- Short Version by Kwon et al., 2013, Study Skills Assessment tool by Vijayabanu and Sri, 2017 and Psychological well-being by Sisoda and Choudhary, 2005 were used to measure and correlate the Smartphone Addiction as an impact of Study Skills and Psychological well-being among the young adults in Kohima, Nagaland.

1. The Smartphone Addiction Scale-Short Version (SAS-SV) by Kwon et. al (2013) consist of 10-items with 6-point Likert scale answers, Viz., Strongly disagree, Disagree, weakly disagree, Weakly agree, Agree, Strongly agree. Total scores typically range from 10-60, with higher score indicating problematic smartphone usage.

2. Study Skills Assessment tool consist of 35 items on a 5-point Likert Scale answers, Viz., Never-1, Rarely-2, Occasionally-3, Frequently-4 and Always-5, developed and standardized by Vijayabano and Sri (2017). It has seven dimensions specifically Reading, taking notes, studying, memorization, exam preparation, time management, and Comprehension. The final scoring norms have been set to 5-12 Poor, 13-20 Average and 21-25 Good for the dimension. The minimum score is 35 and maximum score possible is 175, with higher the score higher the study skills.

3. Psychological Well-being by Dr. Devendra Singh Sisoda and Ms Pooja Choudhary (2005), there are 50 items with five alternate answers, viz., Strongly Agree, Agree, undecided, Disagree and strongly Disagree. Each question is scored on a five point scale (i.e 5, 4, 3, 2, 1). It has 5 areas: Satisfaction, efficiency, sociability Mental Health and Interpersonal Relations with an interpretation of Extremely High, High, Above Average, Average, Below Average, Low and Extremely Low.

Statistical Analysis

Using SPSS-V27, T-Test, Pearson's Product-Moment Correlation and Multivariate Linear Regression were used to analyze the variables.

Ethical Consideration

The participants are fully informed and Consent was obtained from every participant. Personal data, including participant's smartphone usage habits, study skills and psychological well-being was kept confidential. Participation was voluntary, and students should not feel pressured or obligated to participate and have the right to withdraw at any time.

Results

The present study was computed by using Statistical Package for the Social Science (SPSS) 27 Version Software.

In order to find out the mean difference in Smartphone Addiction, Study Skills and psychological well-being with respect to gender, T- Test was used and was given in the table below.

Table 1: Table showing the T-Test of Smartphone Addiction between Male and Female of young adults.

	Gender	N	Mean	Mean Difference (md)	S.D	T.Value	Sig. (2-tailed)
Smartphone Addiction.	Male	89	34.89	1.294	8.514	-1.294	0.197
	Female	81	36.54		8.127		

(P>0.05)

As shown in the table 1, the mean score of Smartphone Addiction for male is 34.89 and female is 36.54, the mean difference for male and female is 1.294, the S.D of the male is 8.514 and female is 8.127, the T.Value of male and female is -1.294 and the Significant value of male and female is 0.197. Since the p-value (0.0.197) is greater than 0.05, there is no statistically significant difference between Male and Female in Smartphone Addiction among young adults (P>0.05). Therefore, fail to reject the null hypothesis, stating there is no significant gender difference in Smartphone Addiction among young adults in Kohima, Nagaland.

Table 2: Table showing the T-Test of Study Skills between Male and Female of young adults.

	Gender	N	Mean	Mean Difference (md)	S.D	T.Value	Sig. (2-tailed)
Study Skills	Male	89	108.57	-5.476	19.381	-1.705	.090
	Female	81	114.05		22.493		

(P>0.05)

As shown in the table 2, the mean score of Study Skills of the male is 108.57 and female is 114.05, the mean difference for male and female is -5.476, the S.D of the male is 19.381 and female is 22.493, the T.Value of male and female is -1.705 and the Significant value of male and female is 0.090. The negative mean difference and negative t-value indicates that female scored higher than males, however since, the p-value .090 is greater than 0.05 there is not statistically significant difference between Male and Female in Study Skills among young adults in Kohima, Nagaland (P>0.05). Therefore, the null hypothesis was not rejected.

Table 3: Table showing the T-Test of Psychological Well-being between Male and Female of young adults.

	Gender	N	Mean	Mean Difference (md)	S.D	T.Value	Sig. (2-tailed)
Psychological Well-being	Male	89	169.99	-0.308	18.890	-0.103	0.918
	Female	81	170.30		19.879		

(P>0.05)

As shown in the table 3, the mean score of Psychological well-being of the male is 169.99 and female is 170.30, the mean difference for male and female is -0.308, the S.D of the male is 18.890 and female is 19.879, the T.Value of male and female is -0.103 and the Significant value of male and female is 0.918. Since the p-value 0.918 is greater than 0.05 there is no statistically significant difference between Male and Female in Psychological

well-being among young adults in Kohima, Nagaland (P>0.05). Hence, fail to rejected the null hypothesis.

In this study, in order to find the correlation between the Smartphone Addiction, Study Skills and Psychological well-being of the young adults in Kohima, Nagaland the Pearson Correlation was used.

Table 4: Table showing the correlation between Smartphone Addiction and Study skills of young adults.

	Pearson Correlation	Significant Value
Smartphone Addiction Study Skills	-0.136	0.076

(P>0.05)

As shown in Table 4, the Pearson correlation coefficient between Smartphone Addiction and Study Skills was r = -0.136 with a significant value of p= 0.076. Since, the p-value is greater than 0.05 (p>0.05), this indicates no statistically significant negative relationship between Smartphone Addiction and Study Skills among young adults in Kohima, Nagaland. This suggested that there is a weak negative correlation, that higher Smartphone Addiction may be slightly associated with lower study skills. Therefore, the null hypothesis stating that there is no significant relationship between Smartphone Addiction and Study skills was fail to reject.

Table 5: Table showing the correlation between Smartphone Addiction and Psychological well-being of young adults.

	Pearson Correlation	Significant Value
Smartphone Addiction Psychological Well-being	-0.207	0.007

(P<0.05)

As shown in Table 5, the Pearson correlation coefficient between Smartphone Addiction and Sleep quality is r = -0.207 with a significant value of p= 0.007. Since, the p-value is less than 0.05 (p<0.05), this indicates a statistically

significant but weak negative relationship between Smartphone Addiction and Psychological well-being among young adults in Kohima, Nagaland. This suggests that higher levels of Smartphone Addiction are significantly associated with lower psychological well-being. Therefore, the null hypothesis stating that there is no significant relationship between Smartphone Addiction and Psychological well-being was not rejected.

In order to find out the impact of Smartphone addiction on Study Skills and psychological Well-being, multivariate linear regression was used.

Table 6: Table showing the Multivariate Linear Regression of Smartphone Addiction impact on Study Skills and Psychological well-being of young adults.

Independent Variable	Dependent Variables	B	SE B	β	T	p	R^2	Adj. R^2	Interpretation
Smartphone Addiction	Study Skills	-0.34	0.19	-0.14	-1.79	0.076	0.019	.013	Not Statistically significant (p>0.05)
	Psychological Well-being	-0.48	0.18	-0.21	-2.74	0.007	0.043	.037	Statistically Significant negative Impact (<0.05)

As shown in table 6, the Multivariate linear regression analysis reveals that Smartphone Addiction did not significantly impact study skills, however significantly impact psychological well-being among young adults in Kohima, Nagaland. B-values are -0.34 and -0.48, SE B values are 0.19 and 0.18, µ§ values are -0.14 and -0.21,T-values are -.79 and -2.74, p-values are 0.076 and 0.007. The effect sizes (R2 Values), 0.019 and 0.043 were small, indicating that Smartphone addiction accounts for a limited but meaningful proportion of variance in Psychological well-being (R2 =4.3%.) and with an Adjusted R2 values of 0.013 and 0.037. Thus, the null hypothesis which stated that Smartphone Addiction does not significantly impact Study skills was not rejected however, the null hypothesis stating that Smartphone Addiction does not significantly impact Psychological Well-Being among young adult was rejected.

Discussion

In the present study, gender differences in Smartphone Addiction, Study Skills and Psychological Well-being among young adults were assessed. Additionally, it explores the relationship between each variable. Finally, the study assessed the impact of Smartphone Addiction on Study Skills and Psychological well-being among young adults in Kohima, Nagaland.

The first objective was to assess the gender differences in Smartphone Addiction, Study Skills and Psychological Well-being among young adult. T-Test was used to assess the gender difference and the study reveals that the T-Value of male and female of Smartphone Addiction is -1.294, Study Skills is -1.705 and Psychological well-being is -0.103. The significant value of Smartphone Addiction is 0.197, Study Skill is .090 and Psychological well-being is 0.918. Therefore, since p-values are greater than 0.05, the findings indicates that there is no statistically significant difference between male and female in Smartphone Addiction, Study Skills and Psychological well-being. Therefore, fail to reject the null hypothesis. The present study is consistent with the study done by Singh et al. (2023), which revealed that no gender difference was seen in Smartphone Addiction, however Khumbar, (2025) found that there is gender difference in respect to smartphone Addiction.

The second objective was to analyze the relationship between Smartphone Addiction, Study Skills and Psychological Well-being among young adults. Pearson's Product-Moment Correlation was applied to analyze the relationship between them and found that Smartphone Addiction and Study Skills does not statistically correlated (-0.136) at 0.05. Hence, the null hypothesis stating that there is no significant relationship between Smartphone Addiction and Study Skills was not rejected. However, the study found a weak negative correlations (-0.207) between Smartphone Addiction and Psychological well-being among young adults in Kohima, Nagaland. This suggests that higher levels of Smartphone Addiction are significantly associated with lower psychological well-being. Therefore, the null hypothesis stating that there is no significant relationship between Smartphone Addiction and Psychological well-being was also fail to reject. Similar results were reported by Kumar et al., (2020) who studied on the impact of Smartphone Addiction on psychological well-being among university student in Malaysia and found a negative impact of excessive Smartphone on the psychological well-being

among the university students. Munderia and Singh (2018), also revealed that higher mobile phone dependency negatively impact the psychological well-being. Interestingly, Khumbar, (2025) found that there was a negative association between Smartphone and academic achievement.

The third objective was to determine the impact of Smartphone Addiction on Study Skills and Psychological Well-being among young adult. Multivariate linear regression was used to determine the impact of Smartphone Addiction on Study Skills and psychological well-being and found out that Smartphone Addiction did not significantly impact study skills, however impacted psychological well being of the young adults. Therefore, the null hypothesis for Smartphone Addiction impacting Study Skills was not rejected whereas the Smartphone Addiction impacting Psychological Well-being was rejected. The present study is in line with the study done by Kokkaparambil and James (2023), which suggest that there was a significant impact of Smartphone Addiction on Psychological well-being, however Kumar et al. (2020), suggest a negative impact of excessive smartphone addiction on the psychological well-being. Sunday et al. (2021), further noted that the greater use of a phone while studying, negatively impact on learning and academic achievement, implying that Smartphone use may interfere with cognitive resources and learning efficiency.

Conclusion

Therefore, based on the findings of the present study, it can be concluded that Smartphone Addiction does not significantly affect study skills but does have a detrimental impact on the Psychological well-being among young adults in Kohima, Nagaland. Though Smartphones offer numerous benefits, excessive usage may contribute to declining mental health and emotional well-being. These results underscore the importance of promoting digital well-being and encouraging mindful Smartphone use among youth to safeguard their psychological health and academic development.

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Creativity and Temperament among Young Adults in Guwahati, Assam: A Correlational Analysis

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Abstract:

Aim: *The current study aims to evaluate the relationship between creativity and temperament among young adults. It further seeks to find out if there are gender differences in creativity and temperament.*

Methods: *Young adults aged 18-25 years (N=70) participated in this study. Both male and female participants were in an equal sample (male, n = 35, female, n = 35). Samples were from Royal Global University, Assam. Self- report test questionnaires were used and interpreted. Pearson Correlation and Chi-Square test were used to analyse the data.*

Findings: *The results indicated that there is a significant relationship between creativity and temperament. Hence, there is a positive correlation between Creativity and Sanguine Temperament in males. However, there is a negative correlation between Creativity and Sanguine Temperament in females. There is a positive correlation between Creativity and Choleric Temperament in male, whereas in females, there is a negative correlation. In male, the result showed a negative correlation between Creativity and Phlegmatic Temperament, while in females, it showed a positive correlation. Correlation between Creativity and Melancholic Temperament in male is positive whereas in females, it's negative.*

Conclusion: *It can be concluded that there is a link/relationship between Creativity and Temperament among young adults. Also, there is no significant difference between male and female in Creativity. Furthermore, there is no significant difference between male and female in Temperament.*

Keywords: *Creativity, Temperament, Young Adults, Correlation.*

Introduction

Creativity and temperament shape young adults' personal growth, problem-solving skills, and social interactions (Mammadov et al., 2019). Creativity fosters independent thinking, adaptability, and innovation in academic and professional settings (Mazeh, 2020), thriving in emotionally secure environments that encourage exploration and risk-taking (Prabhu et al., 2008). Temperament influences emotional regulation, decision-making, and interpersonal relationships (Malik & Marwaha, 2019). Together, these traits build resilience and confidence, helping individuals thrive in diverse settings.

Creativity

Creativity involves generating original and adaptive ideas, contributing to various fields (Guilford, 1950). Darwin proposed that artistic expression evolved alongside sexual selection, shaping human creativity (Gabora & Kaufman, 2010). Aristotle linked creativity to psychological complexity, a notion echoed by Seneca and Shakespeare.

Contemporary creativity models emphasize its developmental and cognitive aspects. Kaufman and Beghetto's Four C Model categorizes creativity into:

Mini-c : Personal creativity emerging in the learning process.

Little-c : Everyday creative growth with skill development.

Pro-c : Professional-level creativity requiring practice and expertise.

Big-C : The Big-C level includes an evaluation of one's career and the entire body of work.

Guilford's Structure of Intellect Model identifies creativity as a function of divergent thinking, where multiple solutions are generated for a problem. He categorized mental tasks into operations, contents, and products, highlighting divergent production as key to creative thinking (Guilford, 1950).

Neuroscientific research supports the connection between creativity and emotional processing, indicating that creative individuals seek novelty similarly to emotional responses (Gu et al., 2018).

Temperament

Temperament refers to the innate core traits of an individual that is responsible for his or her reaction and interaction with the environment which forms a

general pattern. A person's approach to the world around them is organised by their temperament, which is a collection of traits. It is a component of personality that deals with emotional propensity and response.

Classical temperament theories categorize individuals as:

Sanguine : Social and energetic.
Choleric : Goal-oriented and ambitious.
Melancholic: Introspective and artistic.
Phlegmatic : Calm and dependable.

Thomas and Chess's infant temperament model classifies babies as easy, difficult, or slow-to-warm-up, shaping lifelong adjustment patterns (Rettew & McKee, 2005). Understanding temperament enhances emotional regulation, decision-making, and social functioning (Malik & Marwaha, 2019). The interplay between creativity and temperament highlights human adaptability and cognitive flexibility. Nurturing both fosters resilience, confidence, and meaningful contributions across domains. Educators and mentors play a crucial role in cultivating these traits by creating supportive environments that encourage exploration and growth (Kaufman, 2009).

Review of Literature:

Sakhavat Mammadov's (2021) meta-analysis of 228 studies (N = 413,074) examines the link between Big Five personality traits and academic performance. Cognitive ability is the strongest predictor (64% variance), while personality traits add 27.8%. Conscientiousness remains a key predictor (28% variance) even after controlling for cognitive ability. The impact of personality traits varies by education level, with openness, extraversion, and agreeableness being more influential in early schooling.

Marcin Jaracz's (2024) study finds higher creativity in individuals with bipolar affective disorder. Using Akiskal's affective temperament model, it explores the link between temperament and creativity. While temperamental traits enhance creativity, they also pose psychological risks and may lower academic performance. The study reviews research on temperament, mental health, and educational outcomes, highlighting implications for psychological and educational interventions.

Shengjie Lin et al. (2025) investigate how grit and curiosity predict creative achievement in adults (N = 522). Perseverance positively correlates with

creativity, while consistency of interest shows a negative relationship. Five curiosity dimensions further predict creativity, with thrill-seeking linked to achievements in both art and science, and deprivation sensitivity associated with artistic creativity. The study suggests curiosity plays a greater role in creative success than consistency of interest.

Rationale of the Study

Creativity is a fundamental aspect of human cognition, influencing problem-solving, innovation and self-expression (Mammadov et al., 2019). At the same time, temperament, as an inherent personality characteristic, plays a crucial role in shaping an individual's behaviour, emotions and cognitive processes. Inspite of importance of both creativity and temperament, limited research has explored their interrelationship, particularly among young adults in the Indian context.

Young adulthood is a critical developmental stage marked by significant cognitive, emotional and social change. During this phase, individuals often explore their creative potential while navigating various personal and professional challenges. Understanding how temperament influences creativity can provide valuable insights into how personality

Traits affect cognitive and emotional functioning, ultimately contributing to personal and professional growth.

Furthermore, the study seeks to address the role of gender in creativity and temperament. While previous research has examined gender differences in creativity and personality traits, findings remain inconsistent. Some studies suggest that males and females exhibit varying levels of creativity due to differences in personality traits, socialization patterns, and environmental influences. However, there is a lack of empirical evidence focusing on young adults in the context of Guwahati, Assam (Nath, 2017). By investigating the relationship between creativity and temperament among young adults, this study fills this research gap and contribute to a deeper understanding of individual differences in creativity. The findings could have implications for educational and psychological interventions designed to nurture creative potential and personal development in young adults (Nath, 2017; Gardner, 1988).

Objectives

1. To find out if there is any significant difference between men and women young adults in regard to Creativity.
2. To evaluate whether there is any significant difference between men and women young adults in case of Sanguine Temperament, Choleric Temperament, Phlegmatic Temperament and Melancholic Temperament.
3. To examine whether there is any relationship between Creativity and Sanguine Temperament among male and female young adults.
4. To evaluate whether there is any relationship between Creativity and Choleric Temperament mong male and female young adults.
5. To find out if there is any relationship between Creativity and Phlegmatic Temperament among male and female young adults.
6. To examine whether there is any relationship between Creativity and Melancholic Temperament among male and female young adults.

Hypotheses

1. There will be no significant difference between men and women young adults in the case of Creativity.
2. There will be no significant difference between men and women young adults in case of Sanguine Temperament, Choleric Temperament, Phlegmatic Temperament and Melancholic Temperament.
3. There will be no relationship between Creativity and Sanguine Temperament among male and female young adults.
4. There will be no relationship between Creativity and Choleric Temperament among male and female young adults.
5. There will be no relationship between Creativity and Phlegmatic Temperament among male and female young adults.
6. There will be no relationship between Creativity and Melancholic Temperament among male and female young adults.

Alternative Hypotheses

1. There will be significant differences between men and women young adults in Creativity.

2 There will be significant differences between men and women young adults in the case of Sanguine Temperament, Choleric Temperament, Phlegmatic Temperament and Melancholic Temperament.

3 There will be a relationship between Creativity and Sanguine Temperament among male and female young adults.

4 There will be a relationship between Creativity and Choleric Temperament among male and female young adults.

5 There will be relationship between Creativity and Phlegmatic Temperament among male and female young adults.

6 There will be relationship between Creativity and Melancholic Temperament among male and female young adults.

Method:

In the present study, Correlational research design was employed.

Sample

The sample comprised 70 young adults out of which 35 for young males and 35 for young females. Their age range was from 18 to 25 years. Samples were drawn through a purposive sampling method. Samples were selected from Royal Global University, Guwahati, Assam.

Inclusion Criteria

1. Persons in the age group of 18-25 years.
2. Persons having Basic English proficiency.
3. Equal number of males and females.

Exclusion Criteria

1. Persons who are not mentally and physically healthy.
2. Those who did not give voluntary consent for participation.

Measures

The following measures were used for data collection:

i. Personal Information data sheet: It was prepared in English language, by both the authors, which gathered information about socio-demographic details of the participants.

ii. The OSPP Four Temperament Scale: that was revised by Conrad Hock. The OSPP Four Temperament Scale that was revised by Conrad Hock. This test was used to assess the temperaments of the young adults. Four dimensions and 50 items were included in the test. The four dimensions which were included are: Sanguine, Choleric, Phlegmatic and Melancholic. The four dimensions which were included are:

(a) Sanguine **(**Blood)–People who are high on Sanguine are sociable, charismatic, and optimistic. They can also be impulsive, shameless and exaggerator.

(b) Choleric (Yellow Bile) – They may be ambitious, passionate and efficient. The darker side may be aggressiveness, impatient, argumentative.

(c) Phlegmatic (Phlegm)- People may be relaxed, kind and observant. They may also be shy, stubborn and lazy.

(d) Melancholic (Black Bile)- They may be thoughtful, organised and creative. They can also be obsessive, perfectionist and moody.

iii. Kaufman Domains of Creativity Scale (K-DOCS): Kaufman Domains of Creativity Scale (K-DOCS): developed by James C. Kaufman in 2012, is a self-report questionnaire that measures creativity across five domains: self/everyday creativity, scholarly creativity, performance creativity, mechanical/scientific creativity and artistic creativity. The scale has high reliability with Cronbach's alpha ranging from 0.78 to 0.87, and strong construct validity. There are 50 items in this scale.

Statistical Analysis

Statistics namely Percentage, Chi-square Test and Pearson Coefficient Correlation were computed to test the null hypotheses formed for this investigation.

Procedure

For the present study, data was collected for hypothesis testing. The young adult males and females were included from the age group of 18-25 years. Data collection was taken from Royal Global University, Assam. Permission was taken from the concerned institution. The participants were asked for their consent and rapport was established. The purpose of the study was explained to them and assured that their information will be held confidential. Instructions were given to the participants regarding the questionnaires. To

begin, the socio-demographic Questionnaire was given to them before they started with the OSPP Temperament Test and the Kaufman Domains of Creativity Scale. The scoring of different tools was done as per scoring procedure given in the respective manual. The data was collected and statistical analysis was done using Frequency, Percentage, Chi-square and Pearson Correlation. The research was concluded based on the finding.

Result

Table 1: Distribution of male and female young adults by their Creativity Level

Gender	N	V. High		High		Medium		Low		V. Low		Chi Square Value	df	Level of Significant
		f	%	f	%	f	%	f	%	f	%			
Male	35	5	14	22	62.9	7	20	1	2.85	0	0	5.439	4	Non-significant
Female	35	11	31	18	51.1	5	14.28	1	2.85	0	0			
Total	70	16	45	40	114	12	34.28	2	5.7	0	0			

Table 1 shows that the majority of male (62.9%) and female (51.1%) young adults have a “High” level of Creativity. On the other hand, larger percentages of females (31%) are found to have “Very High” levels of Creativity than the male (14%). Majority male (20%) are found in the level of “Medium” Creativity than the females (14.28%). Only 2.85% of male and females have a “Low” level of Creativity. It must be noted that no respondents belong to the “Very Low” level of Creativity.

Although Table 1 shows differences between male and female young adults regarding their various Creativity levels, the Chi square value i.e., 5.439 is found to be non- significant at both 5% and 1% level. Consequently, the null hypothesis states, **“There will be no significant difference between men and women young adults in the case of Creativity”,** cannot be rejected. Thereby it can be stated that there is no significant difference between male and female young adults regarding various levels of Creativity.

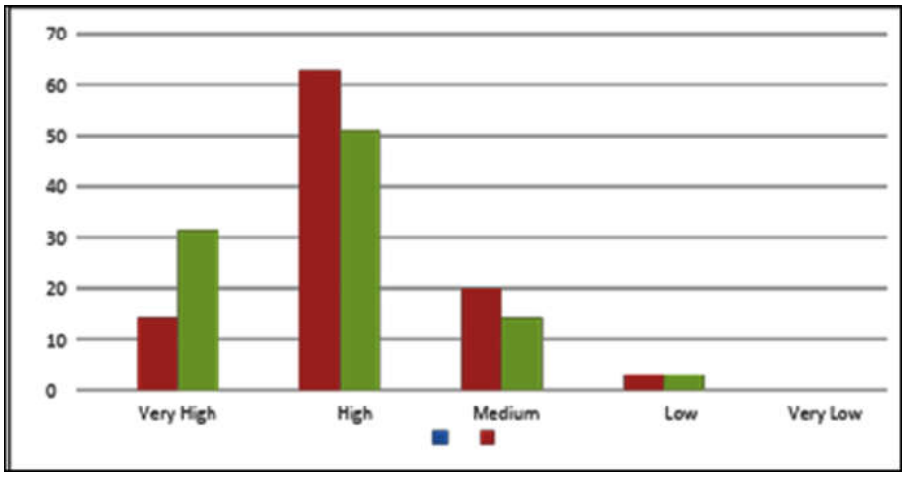

Fig. 1 : Graphical of male and female young adults regarding various level of Creativity

Table 2 : Distribution of male and female young adults in various areas of Temperament

Gender	N	Sanguine Temperament		Choleric Temperament		Phlegmatic Temperament		Melancholic Temperament		Chi Square Value	df	Level of Significant
		f	%	f	%	f	%	f	%			
Male	35	15	42.8	4	11.4	6	17.1	10	28.5	5.439	4	Non-significant
Female	35	8	22.8	2	5.71	8	22.8	17	48.5			
Total	70	23	65.6	6	17.1	14	39.9	27	77.1			

Table 2 shows that the majority of male (42.85%) are high on Sanguine whereas the majority of females (48.57%) are high on melancholic. On the other hand, larger percentages of male (11.42%) are found in Choleric than females (5.71%). However, larger percentages of females (22.85%) are found in Phlegmatic than male (17.14%).

Although table 2 shows differences between male and female young adults regarding their various areas of temperament, the Chi-square value i.e., 4.897 is found to be non-significant at both 5% and 1% level. Consequently, the null hypothesis states, "There will be no significant difference between men and women young adults in case of Sanguine Temperament, Choleric Temperament, Phlegmatic Temperament and Melancholic Temperament." cannot be rejected. Therefore, it can be stated that there is no significant difference between male and female young adults regarding their temperament. A graphical presentation is depicted below (Figure 2).

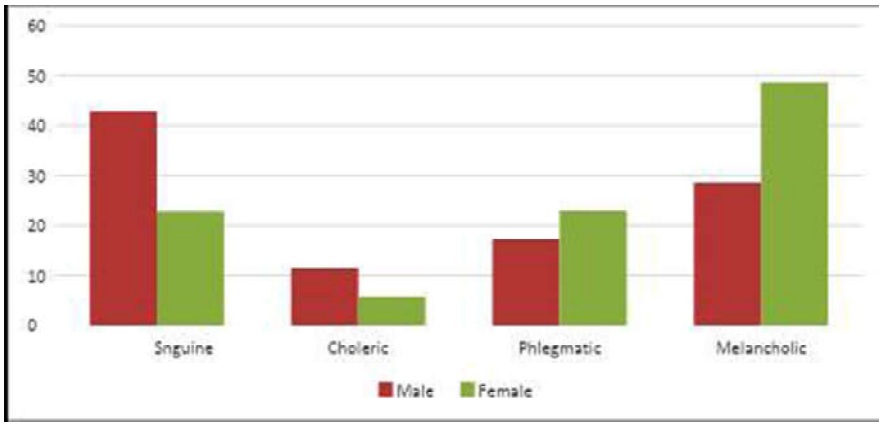

Fig. 2: Graphical representation of male and female young adults in various areas of Temperament

Table 3: Pearson Correlation between Creativity and Sanguine Temperament among male and female young adults

	Gender	N	Pearson Correlation Value	Interpretation
Correlation between Creativity and Choleric Temperament	Male	35	0.025	Positive Correlation
	Female	35	-1	Negative Correlation

Table 3 shows that there is positive correlation between Creativity and Sanguine in the case of male (0.157). On the other hand, in the case of females (-0.237) negative correlation was found between Creativity and Sanguine. As in case of both male (positive correlation) and female (negative correlation) relationship has been found between creativity and sanguine, therefore the null hypothesis states, **"There will be no relationship between Creativity and Sanguine Temperament among male and female young adults**", is rejected.

Table 4: Pearson Correlation between Creativity and Choleric Temperament among male and female young adults

	Gender	N	Pearson Correlation Value	Interpretation
Correlation between Creativity and Phlegmatic Temperament	Male	35	-0.2635	Negative Correlation
	Female	35	0.0436	Positive Correlation

Table 4 shows that there is positive correlation between Creativity and Choleric in the case of male (0.025). On the other hand, in the case of females (-1) negative correlation was found between Creativity and Choleric. As in case of both male (positive correlation) and female (negative correlation) relationship has been found between creativity and choleric, therefore the null hypothesis states, **"There will be no relationship between Creativity and Choleric Temperament among male and female young adults**." is rejected.

Table 5: Pearson Correlation between Creativity and Phlegmatic Temperament among male and female young adults

	Gender	N	Pearson Correlation Value	Interpretation
Correlation between Creativity and Phlegmatic Temperament	Male	35	-0.2635	Negative Correlation
	Female	35	0.0436	Positive Correlation

Table 5 shows that there is a negative correlation between Creativity and Phlegmatic in the case of male (-0.263). On the other hand, in case of females (0.043) positive correlation was found between Creativity and Phlegmatic. As in case of both male (positive correlation) and female (negative correlation) relationship has been found between creativity and phlegmatic, therefore the null hypothesis states, **"There will be no relationship between Creativity and Phlegmatic Temperament among male and female young adults**", is rejected.

Table 6: Pearson Correlation between Creativity and Melancholic Temperament among male and female young adults

	Gender	N	Pearson Correlation Value	Interpretation
Correlation between Creativity and Melancholic Temperament	Male	35	0.64015	Positive Correlation
	Female	35	-0.30163	Negative Correlation

Table 6 shows that there is a positive correlation between Creativity and Melancholic in the case of male (0.640). On the other hand, in the case of females (-0.301) negative correlation was found between Creativity and

Melancholic. As in case of both male (positive correlation) and female (negative correlation) relationship has been found between creativity and choleric, therefore the null hypothesis states, **"There will be no relationship between Creativity and Melancholic Temperament among male and female young adults."** is rejected.

Discussions

Gender Differences in Case of Creativity

The above Table 1 indicates no significant difference in creativity between male and female participants which confirms that gender does not influence creativity among young adults of Guwahati, Assam. This present finding is consistent with the previous studies where they found that there are no significant differences between men and women regarding their creative thinking (Fichnova, 2002; Misra, 2003 as cited in Taylor & Barbot, 2021).

In recent years both males and females have had similar educational opportunities and access to creative learning environments, which play a crucial role in fostering creativity (Nori et al., 2018) This suggests that traditional gender stereotypes surrounding creativity may be decreasing, allowing both genders to engage equally in problem-solving and artistic expression (Nori et al., 2018). Therefore, this equal treatment for both male and female young adults might be the reason for the present findings.

Gender Differences in Case of Temperament:

Table 2 above shows that there is no significant difference between male and female young adults regarding their temperament. But the present finding contradicts the previous study conducted by Olino, T. M., et al (2013) that there is a significant difference between male and female young children regarding their temperament traits. Furthermore, the lack of significant gender differences in temperament in the present study may be attributed to the homogeneity of the sample. Since most participants shared similar economic backgrounds and parenting styles, these environmental factors may have played a crucial role in shaping their temperament, minimizing potential differences between males and females.

The notion that temperament is primarily shaped by biological sex has been challenged by contemporary psychological research (Kiff et al., 2011), which suggests that temperament is a dynamic trait influenced by a complex interplay

of environmental, social, and individual factors. This perspective aligns with the findings of Rothbart et al., who posit that temperament is not a fixed, gender-based characteristic, but rather a dynamic trait influenced by a range of environmental and individual factors (Purper Ouakil et al., 2009).

Correlation between Creativity and Different Types of Temperament

In Table 3, it indicates that in the case of male, there is positive correlation (0.157) between Creativity and Sanguine indicating if the Sanguine trait is more dominant, creativity is also higher. People who are high on Sanguine are sociable, charismatic, and optimistic. Creativity doesn't mean talent or skill only, but it also includes problem solving and maintaining good social relationships. Hence, the findings mean that the more the male young adults become extravert; the more the creativity level will also be increased. The more socially connected with other people; the more they would get creative ideas. The present finding is consistent with Mammadov et.al's study (2019).

Personality traits significantly influence an individual's creative potential, with openness playing a crucial role. Individuals high in openness exhibit greater curiosity, adaptability, and receptiveness to new ideas, cultures, and perspectives, fostering creative thinking and problem-solving (Fürst & Grin, 2023; Raya et al., 2023). Their mental flexibility enables them to navigate complex and uncertain situations, a key attribute of creativity.

Additionally, the extraverted nature of Sanguine individuals enhances creativity through social engagement. Frequent interactions expose them to diverse viewpoints, stimulating new ideas and alternative solutions (Thadea et al., 2018). Their charisma and sociability further strengthen social connections, which serve as sources of inspiration and creative support (Huang, 2019; Sangkala, 2012). Thus, both openness and extraversion contribute to creative expression by fostering intellectual curiosity and enriching social experiences.

Table 3 also shows that in contrast to the male counterparts, females exhibited an opposite trend, showing a negative correlation (-0.23) between creativity and the Sanguine trait. This suggests that as their sociability increases, their creativity tends to decrease. This negative correlation between creativity and the Sanguine trait in female young adults may stem from their strong social orientation, emotional engagement, and cultural expectations (Gardner, 1988).

Women often take on emotionally demanding roles that may channel their creative energy toward social problem-solving rather than traditional creative tasks (Berlow et al., 2021). Moreover, constant social interaction can limit the solitude and deep thinking essential for creativity (Nori et al., 2018). Highly Sanguine females may derive greater fulfillment from interpersonal connections rather than from measurable creative outputs, meaning their creativity is more likely to emerge in relational contexts rather than in conventional assessments (Lin et al., 2011; Huang, 2019).

According to Galen's theory, the Sanguine personality type is associated with being sociable, energetic, and fun-loving (Thadea et al., 2018). This strong emphasis on social interactions may lead to a preference for emotional engagement over independent creative pursuits (Eagly & Wood as cited by Ãðåáíåâà, 2021). Additionally, cultural norms often pressure women to conform and maintain social harmony, potentially discouraging risk-taking and unconventional thinking, as discussed by Furnham (Weisberg et al. 2011). These factors collectively contribute to the observed negative correlation in this current study, suggesting that creativity in highly Sanguine females may require alternative assessment approaches. Therefore, further research is needed for a more in-depth inquiry into this phenomenon.

The findings in Table 4 above indicate a positive correlation (0.02) between Creativity and Choleric traits among males, suggesting that as Choleric traits increase, so does creativity. A possible reason for this finding lies in the inherent characteristics of the Choleric temperament, which naturally align with traits that foster creativity. Choleric individuals are goal-driven, proactive, and highly independent thinkers, all of which are essential qualities for innovative problem-solving (Mazeh, 2020). Their assertiveness and confidence allow them to take risks, challenge conventional ideas, and explore new solutions, further enhancing creative output.

Therefore, the positive correlation between Choleric traits and creativity in males can be defended by considering how these personality traits foster an environment conducive to innovation, decision-making, and adaptability—key elements of creative thinking (Gardner, 1988).

However, Table 4 reveals a negative correlation (-1) between creativity and Choleric traits among female young adults. Hence, the variables here move in opposite directions. Women with strong Choleric traits—marked by

dominance, assertiveness, and competitiveness, often face societal resistance, leading to suppressed creative expression due to conformity pressures (Chikwe et al., 2024). Their focus on efficiency, leadership, and structured decision-making may overshadow imaginative thinking, limiting creative risk-taking. Additionally, the need to constantly prove themselves in competitive environments can reduce the flexibility and playfulness essential for creativity (Wang et al., 2021). Moreover, assertive women often receive less encouragement for creative expression, as traditional roles prioritize leadership over innovation (Malhotra, 2023). Collective influence of these factors might be the reason for present finding.

The findings in Table 5 shows in the case of male (-0.26), there is a negative correlation between creativity and phlegmatic temperament. This finding does not necessarily indicate a lack of creativity but rather a difference in how creativity is expressed. Phlegmatic individuals are known for their calm, rational, and observant nature (Michel, 2020), which often translates into structured and methodical problem-solving rather than spontaneous or risk-taking creativity. Their preference for stability and routine may make them less inclined to engage in unconventional or highly expressive creative endeavours, which are commonly used in creativity assessments.

Moreover, Phlegmatic temperament individuals excel in diplomacy, interpersonal relations (Okal et al., 2012), and pragmatic decision-making. Their creativity may manifest in ways that prioritize harmony, efficiency, and logical solutions rather than artistic innovation or abstract thinking. Since traditional measures of creativity often emphasize originality and divergent thinking, the structured and socially adaptive creativity of Phlegmatic individuals might not be fully captured. This suggests that the observed negative correlation does not necessarily imply a lack of creative ability among male young adults but rather a different form of creative expression that requires alternative assessment methods and a further more in-depth research study.

On the contrary, Table 5 reveals a positive correlation (0.04) between creativity and Phlegmatic traits in case of female young adults, indicating that an increase in Phlegmatic tendencies corresponds with higher creativity levels. This association can be attributed to the defining characteristics of the Phlegmatic personality type.

Phlegmatic individuals are known for their calm, observant, and thoughtful nature (Гребневаet al., 2021). Their preference for deep reflection and structured problem-solving fosters a methodical approach to creativity. Unlike more impulsive personalities, they emphasize patience and attention to detail, enabling them to develop well-thought-out ideas (Gardner, 1988; Mammadov et al., 2019). This deliberate approach enhances their ability to generate innovative solutions, especially in contexts that demand emotional intelligence and strategic thinking.

Moreover, Phlegmatic temperament women often express creativity in interpersonal and social settings. Their ability to maintain stability and navigate complex social interactions allows them to develop innovative solutions in areas requiring diplomacy, empathy, and communication. While this form of creativity may not always align with traditional assessments of creative potential, it remains a vital aspect of creative thinking, particularly in fostering cooperation and problem-solving in social and professional environments. The contrasting findings between males and females suggest that Phlegmatic traits influence creative expression differently across genders, emphasizing the need for more nuanced assessments of creativity.

In the Table 6 above the findings indicate a positive correlation (0.64) between melancholic traits and creativity, observed among males. This suggests that as melancholic tendencies increase, so does creative expression. Melancholia is often associated with deep introspection, emotional intensity, and an ongoing state of uncertainty (Gabora & Holmes, 2013), which can serve as a catalyst for creative activity.

Melancholic temperament individuals, particularly men, tend to internalize their emotions and reflect deeply on their thoughts and experiences. When these emotions are directed into creative outlets, they often result in innovative and emotionally rich artistic and intellectual works. This phenomenon is evident in the case of Vincent van Gogh, whose melancholic disposition influenced his renowned masterpiece The Starry Night ht. (Shah et al., 2019). Many artists, poets, and musicians similarly transform their emotional struggles into creative expression, illustrating the connection between deep emotional experiences and artistic creativity. Hence, for males, melancholic introspection appears to enhance creativity by providing a reservoir of emotional depth from which they draw inspiration.

On the other hand, Table 6 also reveals a negative correlation (-0.30) between melancholic traits and creativity among females, indicating that as melancholic tendencies increase, creative expression declines. This contrast suggests that excessive melancholia in women may hinder rather than stimulate creativity. Emotional sensitivity, social expectations, and psychological burdens may contribute to this gender-based difference, as women may struggle to channel their melancholic tendencies into productive creative outlets in the same way as their male counterparts (Amabile, 2017). Conversely, women who exhibit lower melancholic tendencies may experience greater emotional stability, allowing for enhanced cognitive processing and creativity.

These gender-based differences in the relationship between melancholia and creativity highlight the need for further research. Future research should aim to provide a deeper understanding of these dynamics, offering alternative frameworks for assessing creativity across genders.

Conclusion

This present study highlights that while gender does not significantly influence overall creativity, temperament plays a crucial role in shaping creative expression. Sanguine and Choleric traits enhance creativity in males but show an inverse relationship in females, possibly due to sociocultural expectations. Similarly, melancholic traits foster creativity in males but hinder it in females, reflecting emotional and cognitive differences. Phlegmatic traits also influence creativity differently across genders. These findings emphasize the need for nuanced creativity assessments and further research on the interplay between personality, gender, and sociocultural factors in creative expression.

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