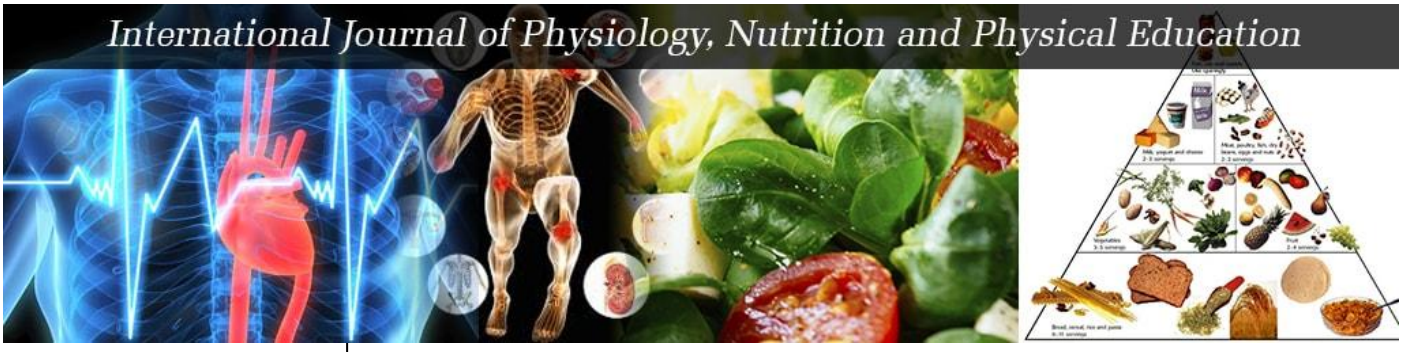

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A comparative analysis of mental health status between science and arts female students of rural colleges in West Bengal

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Abstract
Mental health plays a vital role in the academic and personal advancement of students, particularly among rural female college students who face several socio-cultural and economic challenges. This study intended to compare the mental health status of science and arts female students of rural colleges in West Bengal using the Mental Health Battery (Sinha & Gupta, 1991).
Methods: The sample consisted of 200 female students (100 science, 100 arts) from various colleges of, Purba Medinipur district, West Bengal, aged between 17–22 years. The Mental Health Battery (MHB) by Sinha and Gupta was applied to measure six dimensions: emotional stability, overall adjustment, autonomy, security–insecurity, self-concept and intelligence. Data were evaluated using mean, standard deviation and t-test at the 0.05 level of confidence.
Results: Most of the students from both streams belonged to middle or low socio-economic groups and attained average or poor in mental health components. No significant differences were identified between science and arts students apart from autonomy, where arts students scored higher than the science students. Science students demonstrated a little enhanced mean score in intelligence, but not reached in significant level.
Conclusion: Rural female students, in spite of of academic stream, features similar mental health status due to shared socio-economic and cultural conditions. The only remarkable difference was identified in autonomy score in arts students. The mean score of arts students in autonomy was higher than the science students and their difference was significant. The cause of this outcome may be due to the creative characteristics of their course. These findings highlight the requirement of specific interventions and counselling to improve coping skills, autonomy and overall well-being.

Keywords: Mental health, rural college girls, science and arts streams, autonomy

Introduction
Mental health has appeared as one of the most significant features of overall human development. This is also true particularly in the academic circumstance where students are frequently met with intellectual, emotional and social challenges. According to the World Health Organization (WHO, 2018), mental health is not merely the absence of illness, but a state of well-being in which individuals can realize their potential, cope with the normal stresses of life, work productively, and contribute to their community. At the college level, mental health assumes greater importance, as students undergo a crucial transition from adolescence to adulthood, dealing with increasing responsibilities, academic demands, and social pressures. These challenges are often increased due to societal expectations, gender characteristics and the demands to achieve in both academic and personal areas of female college students. In addition, differences in the nature of academic streams—such as science and arts—may manipulate the psychological experiences of students. Science students often face scrupulous schedules, laboratory work that demands accuracy and technical knowledge, whereas arts students are more involved in creative, interpretative and socially-oriented academic work. These variations in academic environments and learning styles may result in differences in mental health indicators such as stress tolerance, emotional stability, and adjustment patterns.

In the context of rural colleges of West Bengal, these matters become even more prominent. Students of rural colleges frequently meet challenges such as inadequate educational facilities, financial limitations, lack of disclosure to modern learning system and limited entrée to professional counselling or psychological support. Female students, in particular, may experience heightened feelings of insecurity, limited autonomy, and cultural pressures rooted in traditional social expectations. These features can remarkably influence their self-concept, overall adjustment and emotional well-being compared to students of urban regions. As a result, investigating the mental health of rural college students in West Bengal gives valuable direction to identify the fact that how geographic and socio-cultural issues interconnect with academic disciplines to form the psychological well-being. To assess mental health in an organized and multidimensional way, Sinha and Gupta (2000) developed the Mental Health Battery (MHB), which has been extensively accepted in psychological research in India. This tool measures six important aspects of mental health: emotional stability, overall adjustment, autonomy, security–insecurity, self-concept and intelligence. Emotional stability reflects one's ability to withstand stress and maintain composure, while overall adjustment points out the efficient functioning in home, social and educational surroundings. Autonomy indicates the capability to perform independently and the dimension of security–insecurity measures feelings of safety and confidence. Self-concept reflects the individual's perception of self-worth, and intelligence, as conceptualized in the battery, provides a cognitive foundation that supports mental well-being. Research shows that students in the arts, sciences, and commerce streams have different mental health outcomes. By carrying out a comparative study of arts and science female students in rural colleges of West Bengal, this research work is an attempt to investigate whether the academic discipline considerably manipulates the mental health dimensions. The study is not only important for spotting potential psychological vulnerabilities but also for directing interventions such as counselling, stress management and encouraging learning environments. Ultimately, understanding these differences can contribute to improving the overall quality of higher education in rural West Bengal by promoting student well-being and academic success.

Statement of the problem

The aim of this study was to compare the Mental Health status between Science and Arts Female Students of rural colleges in West Bengal.

Hypothesis

It was hypothesized that there have no difference in case of mental health status of science and arts students of rural colleges of west Bengal.

Delimitation

1. Only Female students were selected for this study.
2. 200 hundred students were selected from various colleges of purba medinipur district, west Bengal.
3. Age of the students were between 17 to 22

Methodology

Selection of subjects

Subjects for the present study were selected female college students from PurbaMedinipur District, West Bengal. Age of the students was between 17 to 22. All the selected subjects were female and they studied in last semester of their respective courses. Total 200 female students were selected randomly from science and arts stream of whom 100 were from science steam and rest 100 were from arts stream.

Tools for the study

Mental Health Battery (MHB) developed and validated by Arun Kumar Singh and Alpana Sen Gupta (2000) was used in the study. Students were given the original English version questionnaire along with the translated Bengali version as all the students were from the Bengali medium colleges and they were very comfortable to give answer in their mother language. MHB used to evaluate the mental health of students between the ages of 17 to 22. The scoring of MHB comprises of two sections-Section-A and Section B. In section –A, preliminary information should be given weight to determine socio- economic status (SES) of the examinee. In the Section B, there are 130 items divided into six categories: emotional stability (ES), overall adjustment (OA), autonomy (AY), security-insecurity (SI), self-concept (SC), and intelligence (I) (IG). Each item was given one mark for right answer and zero for wrong answer. The scores of each dimension were added separately to have the dimensional scores. The reliability of the MHB ranged from 0.72 to 0.87. Moreover, it has strong contemporaneous and construct validity.

Criterion measures

To compare the mental health status of the science and arts female students, all the six categories (emotional stability, overall adjustment, autonomy, security-insecurity, self-concept and intelligence) of mental health battery by singha and gupta were measured.

Statistical analysis

Mean and standard deviation were used to analyse the data. To identify the significance of statistical difference between the two groups, t-test was used. Level of significance was set at 0.05 level of confidence.

Result of the study

Table 1: Socio-economic status of the students (SES)

Ses	Ses ranges	Science students	Arts students
Upper	15-17	4	NIL
Middle	9-14	72	62
Low	8 or below	24	38
Total students		100	100

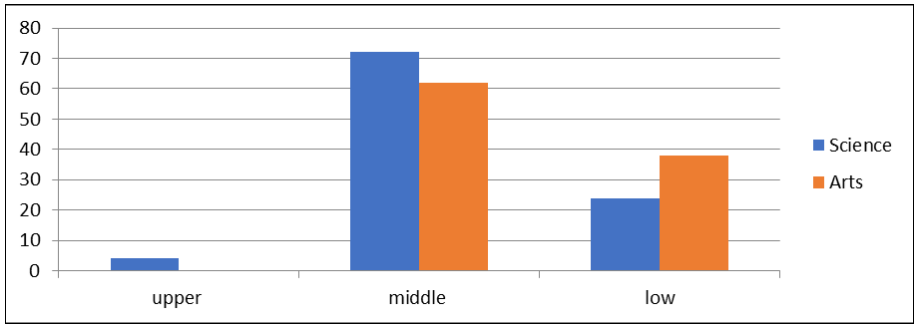

Fig 1: Graphical presentation of science and arts student's SES

From the table -1 and figure -1, it can be stated that only 4 students were from the upper SES, 72 students were from middle SES and 24 students were from low SES among the science stream students. In case of Arts steam, no student was from upper SES whereas 62 students were from middle SES and 38 were from low SES.

Table 2: Qualitative Interpretation of Scores

Percentile Range	Mental health level	Science students			Arts students		
		Upper	Middle	Low	Upper	Middle	Low
P_{90} and above	Excellent	Nil	Nil	Nil	Nil	Nil	Nil
P_{70} to P_{89}	Good	Nil	Nil	Nil	Nil	Nil	3
P_{50} to P_{69}	Average	4	41	10	Nil	46	20
P_{30} to P_{49}	Poor	Nil	31	14	Nil	16	15
Below P_{29}	Very poor	Nil	Nil	Nil	Nil	Nil	Nil
		TOTAL: 100			TOTAL: 100		

Table 3: Mean, S.D. and t-ratio showing difference in mental health among science and Arts stream of rural college girls of west Bengal

Sl. No.	Dimension of mental health	Groups	N	Mean	SD	t-ratio
1	Emotional stability(ES)	Science		10.01	1.6847	0.4866
		Arts		10.02	2.4245	
2	Over-all adjustment (OA)	Science		25.55	3.7775	0.0004
		Arts		26.93	3.5851	
3	Autonomy(AY)	Science		9.35	1.2821	2.9334*
		Arts		10.74	1.3151	
4s	Secuirity-insecuirity(SI)	Science		8.15	2.3327	0.1834
		Arts		8.47	2.0911	
5	Self- concept(SC)	Science		9.25	2.2036	0.0514
		Arts		8.83	1.7584	
6	Intelligence(IG)	Science		22.24	2.9443	1.0664
		Arts		19.08	2.1587	

Significance level of confidence at 0.05 level= 1.98

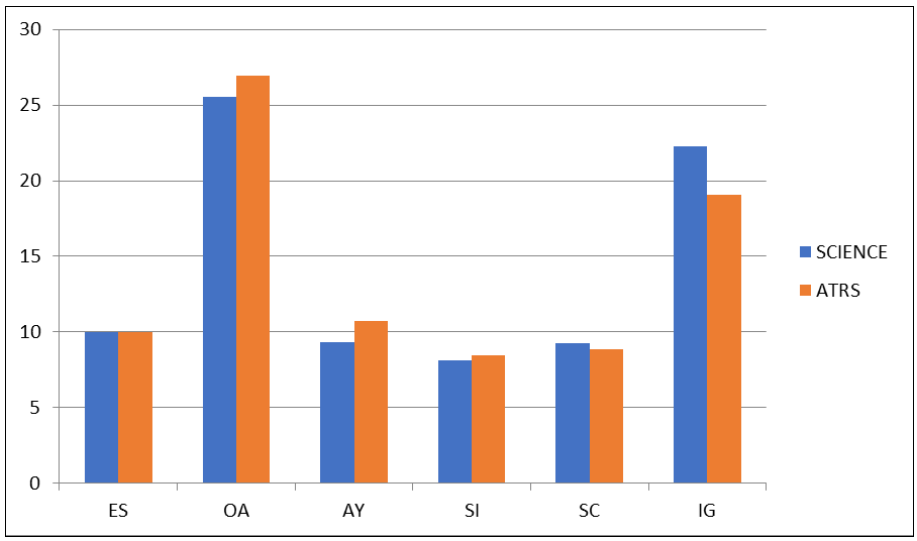

Fig 2: Comparison of Mean of science and arts girls student's various mental health dimension

Table -2 represented the mental health level of the students. Out of 100 students of science stream, 55 students showed average mental health. In these 55 students 4 were from upper SES, 41 were from Middle SES and 10 were from Low SES. Poor mental health showed 45 students of science stream among which 31 were from middle SES and 14 were from low SES. In case of Arts students, 66 students showed average mental health. Out of these 66 arts students 46 were

from middle SES and 20 from low SES. 3 Low SES student of Arts stream confirmed good mental health whereas 31 students showed poor mental health among which 16 from middle and 15 from low SES.

Table 3 and figure-2 indicated that the *t*-ratios for the major dimensions of mental health—emotional stability (t = 0.4866), overall adjustment (t = 0.0004), security–insecurity (t = 0.1834) self-concept (t = 0.0514), and intelligence (t = 1.0664)—did not reach the level of significance (1.98) at 0.05. Hence, the null hypotheses for these dimensions are accepted, suggesting that no significant differences exist between arts and science rural college girls in these areas. At the same time, From Table 3 and figure -2, it is evident that the *t*-ratio calculated for the autonomy (t = 2.9334) among college girls students of the science and Arts streams reached significance at the 0.05 level. Consequently, the null hypothesis is rejected, leading to the conclusion that students from these two academic streams differ in terms of this mental health factor (Autonomy). The mean values further highlight that arts stream girls (M = 10.74) score higher than their science counterparts (M = 9.35).

Discussion of the findings

From the table-1and figure-1, In rural colleges of West Bengal, most girls of both science and arts streams(96 out 100 in science stream and 100 out of 100 in arts stream) fall into the middle and low socio-economic status(SES) groups because their families generally depend on agriculture, daily wage labour, or small-scale informal work with limited income. Educational opportunities, healthcare, and other resources are also comparatively scarce in rural settings. As a result, fewer students (only 4 out of all students) belong to the high socio-economic group. This socio-economic distribution is reflected in the Mental Health Battery (Sinha & Gupta), where the background of students influences their mental health outcomes.

From table -2, it is clear that almost all the girls, whether from science (average-55 & poor- 45) or arts (average-66 & poor-31), tend to score average or poor in the mental health dimensions of the Mental Health Battery (Sinha & Gupta) may be due to the combined academic, social, and environmental set up. Rural students often face economic hardship, limited psychological support services, family responsibilities, and restricted exposure to recreational or stress-relieving opportunities**.** Gender-related expectations and socio cultural constraints further add to stress and insecurity. These factors collectively hinder the development of strong autonomy, adjustment, and coping skills, leading to average or poor performance in mental health dimensions.

From table-3 and figure-2, both groups showed similar emotional stability, a similar ability to maintain balance across diverse environmental demands such as family, health, school, social and emotional contexts. The stady of Dwivedi, M., Paria, B., & Roy, S. K. (2020) and Talukdar, D., & Mete, J. (2021) reported that science vs arts students have almost identical emotional stability scores. In case of overall adjustment, both the groups showed almost the same result may be due to they share a similar socio-cultural environment, family background, economic limitations, and rural lifestyle conditions. These common factors shape their coping patterns and adjustment abilities more strongly than the difference in academic stream, leading to nearly identical results in overall adjustment. The present finding drawn support from the findings of International Journal of Medical Science and Public Health (2020) and Basu, G., & Biswas, S. (2017). Inadequate financial supports, limited career opportunities and gender-based limitations in rural areas often generate feelings of insecurity and these problems are common among the students of both academic streams. Likewise, both groups demonstrate similar self-concept, reflected in their attitudes, self-evaluations, and achievements. The result of the present study has similarity with the study of Waghmare, R. D. (2018).From the above table-2, it was also evident that the result on intelligence is not significant though notable mean difference between the groups is existed. Science students often show slightly better intelligence scores than arts students may be due to the science curriculum generally emphasizes logical reasoning, problem-solving, and analytical thinking**.** These academic aspects help to strengthen certain cognitive abilities calculated in intelligence tests. Though the both groups arise from related socio-cultural and rural backgrounds, the difference is not statistically significant. This indicates that subject choice can provide some cognitive advantage but environmental and socio-economic aspects play a much greater role in determining intelligence levels. The study of Dhurandhar, D., & Agarwal, P. (2015) has emphasized on the same observation as the present drown.

Observation of Table 2 has revealed that the value of t-ratio showing difference in Autonomy (=2.9334) among arts and science stream rural college girls and the result was significant at .05 level. This indicated that arts students exhibited a greater sense of independence and it may be due to the academic choice aligns with interest; it naturally promotes a stronger sense of self-determination and autonomy. Arts steams usually present more scope for unrestricted thinking, creativity and self-regulating interpretation rather than science stream. This outcome aligns with the findings reported by Dhurandhar and Agarwal (2015), who also observed differences in the mental health of adolescents belonging to arts and science streams.

Conclusion

The study found that rural female students of West Bengal, irrespective of their academic stream, mostly share related mental health challenges due to common socio-economic and cultural circumstances. No significant differences appeared in emotional stability, overall adjustment, security–insecurity, self-concept, or intelligence, though science students demonstrated a little higher intelligence scores. The only significant difference was found in autonomy, where arts students showing greater independence, likely due to the creative and interpretative nature of their stream. These findings are emphasizing the requirement of counselling and support organised programmes in rural colleges to build up coping skills, autonomy and overall well-being.

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