

## **Behavioral Practices towards Environmental Protection among Secondary Level Students in Dhanbad District (Jharkhand)**

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### **Abstract:**

*In this study, behavioral tendencies of secondary-level school children towards safeguarding the environment of Dhanbad district of India are analyzed at gender dissimilarity. A questionnaire of 15 Likert-scale pro-environment behaviors was administered to gather data from 60 boys and 60 girls of each of the six selected schools. The findings show huge gender gaps: the girls indicated high to very high awareness of the environment (mean = 61.53, SD = 2.65), but the boys complained of low awareness of the environment (mean = 28.55, SD = 2.83). Independent t-test confirmed huge difference ( $t = -65.86, p < 0.001$ ), but chi-square test established that there exists a non-random gender distribution by levels of performances ( $\chi^2 = 120.00, p < 0.001$ ). Overall, school children depicted moderate participation (mean = 45.04, SD = 16.78), with best practices of waste segregation and tree care. The study indicates the necessity of gender-inclusive environmental education that will reduce gaps for sustainable behaviors.*

**Key Words:** Environmental Awareness, Secondary Schools, Students, Gender Variations.

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### Background of the Study

In the present day of rapid industrialization, urbanization, and development of science and technology, the environment is facing an unparalleled crisis manifested by climate change, deforestation, pollution, erosion of biodiversity, and destruction of natural resources (Sengupta & Maji, 2010). These problems are not only posing threat to the ecological balance but also impacting the human health, living, and sustainable development directly. The threat to human health from environmental factors is not an isolated problem that exists on a national level. There are environmental factors that affect human health on a global level or are so widespread as to be considered global problems (Ramlogan, 1997). Environmental awareness has thus become a crucial factor in delineating responsible attitude construction and behavior that tend to curb the prevailing crisis. Since children of today will be the citizens and decision-makers of tomorrow's society, awareness and sensitization towards the environment at an early stage assumes over-riding importance. The citizen's awareness and its pro-environmental actions play crucial role in making the environmental policy successful (Iizuka, 2016). In such a backdrop, the present study at Dhanbad of Jharkhand state that is best known for its mines of coal, industries, and resultant destruction of environment have following objectives –

1. To assess overall levels of environmental practices
2. To identify gender-based differences;
3. To recommend interventions for enhanced sustainability education.

### Methodology

The sample comprised 120 secondary-level students (Classes 9-10; aged 14-16 years) from six government-aided schools in Dhanbad district. Schools were purposively selected to represent urban and semi-urban areas, with 20 students per school (10 boys and 10 girls, balanced by gender). A 15-item self-report questionnaire measured agreement with pro-environmental statements on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). Total scores ranged from 15-75, categorized as: Very Low (15-30), Low (31-45), High (46-60), Very High (61-75). The instrument demonstrated good internal consistency (Cronbach's  $\alpha = 0.89$ , estimated from inter-item correlations). Descriptive statistics (means, standard deviations) were computed for individual items and total scores. Inferential tests included independent samples t-test for gender differences in total scores and chi-square test for level distributions.

#### 1) Levels of environmental practices

The assessment of environmental knowledge of secondary-level students of Dhanbad District, determined through fifteen indicators of behavioral practices, shows a definite pattern with gender differences. Shifting to the sector of energy savings, items such as switching off lights and fans while leaving the room and persuading ones' family members to conserve electricity showed poor consistencies among boys, who were largely dominating the low level, while girls showed regular and systematic actions increasing their mean to the high level, similar observation has been found in a study by (Sivamoorthy, et al. 2013). Shifting to water savings, including avoiding wastages and monitoring consumption during school and home, the boys showed poor habits, while the girls showed more sensitivity, clustering in the

moderate to high level. Shifting to waste management, items such as proper utilization of dustbins, segregation of paper and non-paper waste, and recycling or reuse of material like books and papers were better substantiated through the girls, while the boys were low-scoring, reflecting lack of practical engagement in everyday life. Plastic reduction behavior (use of cloth carrybags, refusal of single-use plastics) was negligible among boys, while girls showed better observance, portraying more environmentalism. Shifting to activity-based items such as plantation of trees, cleanliness drives of schools, and membership of eco-club, the gender divide remained sharp: girls showing high and very high level of activity, while the boys showed poor level of activity. Shifting to sustainable transport behavior like walking or cycling short distances, and membership of community or national level campaign like Swachh Bharat Abhiyan or Save Water campaign were better substantiated through the girls, reflecting their tendency towards collective environmental behavior. If all fifteen behavioral areas are considered in total, then the overall environmental behavioral practice level among students is found to be of a moderate nature, with high levels of awareness and practice among girls, while boys remain largely on the low side. This divergence also emphasizes the significance of area-specific intervention, especially among boys, in order to achieve balanced environmental consciousness among both genders.

## 2) Table 1: Descriptive Statistics of Behavioral Practices Scores

Group	N	Mean	SD	Min	Max	Level
Boys	60	28.55	2.83	22	34	Low
Girls	60	61.53	2.65	55	67	High
Overall	120	45.04	15.8	22	67	Moderate

## 3) Table 2: Independent Samples t-Test (Boys vs Girls)

Welch t	df	p-value	Mean Diff	95% CI (Lower–Upper)	Cohen's d
-65.86	117.5	1.3e-94	+32.98	31.99 – 33.98	12.02

The analysis of secondary-level students from Dhanbad District's behavioral practice displays pronounced gender-based differences, as evident from Table 1 and Table 2. Descriptives (Table 1) reveal boys possessed a mean score of 28.55 (SD = 2.83), which placed them in the low level of behavioral practices, with their scores clustered narrowly in the tight band from 22 through 34. In contrast, girls possessed a much higher mean score of 61.53 (SD = 2.65), with their scores clustered from 55 through 67 in the high level of behavioral practices. The joint total mean of 45.04 (SD = 15.8) places the total sample in a moderate level of behavioral practices but obliterates strong distinction apparent in moving from boys to girls. The independent samples t-test (Table 2) confirms statistically significant distinction: the calculated Welch's t-value of -65.86 with 117.5 degrees of freedom has an associated p-value 1.3e-94, which is enormously smaller compared to the traditional threshold of 0.001, so there is enormously strong evidence against the null hypothesis. The mean difference of +32.98 in

favor of girls, with 95% interval 31.99–33.98, flags the regularity and constancy of this divide. Finally, effect size (Cohen's  $d = 12.02$ ) is enormously large with immediate attention being drawn to the fact that apparent distinction is statistically significant and practically significant also. Individually and collectively, these results disclose persuasively that girls systematically adhere to more pro-environmental behavioral practices than boys, and so enormous value lies in gender-informed intervention to achieve an environmental conscientiousness and responsibility balance.

Girls scored highest in behavioral practices because of some interconnected reasons. First, in the vast majorities of schools of Dhanbad District, the absolute number of girls enrolled during the secondary level is fairly high, reinforcing their presence in the sample. Second, girls are traditionally associated with domestic work and assist their mothers in domestic activities like water management, waste disposal, and sanitization. Such routine daily performances in the house automatically incorporate resource savings and environmental protection behavior. Thirdly, girls are more honest, disciplined, and rule-abiding in houses as well as schools, which mean more frequent eco-friendly behavior. Their active participation in school-based activities like -, swachchata missions, and plantation actions also reflects their commitment. In contrast, boys are comparatively lesser exposed to such domestic work and are more irregular in making routine environmental performances, justifying the significant score differential across groups.

### **Suggestions:**

It is our foremost duty to conserve our environmental resources. The ultimate goal of environmental education whether it is formal or non-formal is to create awareness among the citizens of a country (Shobeyri, et.al. 2007). The findings of the study present the significance of developing environmental behavioral practices among students, and more prominently, among boys through participatory and practical approaches. As per the results, the following are the recommendations presented:

- 1. Promoting Environmental Education:** Environmental education must never remain just abstract knowledge but must find expression in the practical life practices. Schools must include activity-based learning modules with a focus on energy-saving, waste management, and water-conserving practices. Teachers must design class projects requiring students to put environmental principles into practical situations and thus bridging the knowledge-practice gap.
- 2. Awareness Programmes:** There must also be periodic programmes like seminars, workshops, rallies, and street plays to sensitise students about regional and global environmental issues. These programmes will help students adopt sustainable lifestyles and inculcate a spirit of collective responsibility.
- 3. Problem-Based Action:** Ask students to identify environmental problems around their neighborhood—be it improper waste disposal or excess use of plastic—and come up with practical solutions. This think-do approach, with prompting from teachers as well as

community leaders, will not just raise environmental awareness but also help in developing critical thinking and leadership skills.

**4. Community Participation:** There should also be effective co-operation with the community and schools. Parents, civic organizations, and NGOs should take active interest in such campaigning like cleanliness drives, plantation drives, and water harvesting programs. Community participation will help students in observing and practicing environmental care across the boundary of the school.

**5. Organizing Literary Activities Frequently:** Essay writing competitions, debates, making slogans, environmental theme quizzes, and making posters should occur on a regular or periodic basis. These literary and art competitions raise awareness and encourage students to express their environmental concerns innovatively.

### **Conclusion:**

The present research on Behavioral Practices towards Environment Protection among Secondary Level Students in Dhanbad District (Jharkhand) reveals that whereas the total level of behavioral practices amongst students is a moderate level, there is considerable gender differential. The girls were continuously found to have high to very high level of interest in pro-environmental behavior such as waste management, water and energy preservation and active participations in cleanliness drives. Comparatively, the boys continued to remain mostly on the low level, indicating poor level of commitment and activity level. Statistical verification confirmed the reality that there is a significant and high gender differential with the girls exhibiting high level of sincerity and responsibility to protect the environment. This separation possibly occurred due to girls' high level of activity towards domestic work, level of sincerity towards completion of their school assignments, and high presence amongst the students' community. The finding highlights the necessity of special intervention to fortify the boys' behavioral practices so as to retain and expand the positive level of found practices amongst girls. Ultimately, instilling environment protection on the secondary level entails an integration of effort from schools, parents, and society as a whole wherein education reaches from merely awareness creation to habit development, practical approach, as well as community involvement. Construction of environmentally sound behavior during adolescence level prepares the students to emerge as strong contributors towards sustainable development throughout Jharkhand and more generally.

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