



Effect Of Basic Mountaineering Course Training On Task-Specific Confidence: A Comparative Pre-Test And Post-Test Study Of Male And Female Trainees At ABVIMAS, Manali

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ABSTRACT

Mountaineering as exploration of a variety of adventure activities in high altitude mountains popularised across the world post first civil expedition to Mount Everest. Mountaineering training involves high-risks & still ensures safety & promotes exploring high altitude mountains. Training prepares trainees for theoretical & practical experiences. The objective of this study is to present a comparative analysis of task-specific confidence among mixed-gender trainees undergoing a rigorous Basic Mountaineering Course (BMC). Researchers studied 51 mix-respondents from ABVIMAS. "Pre-Post" primary data collected using questionnaires to analyse results to measure "growth in confidence". It is observed that training significantly improves trainees' task-specific confidence.

INTRODUCTION

Post 29th May 1953, after the first successful civil Everest Expedition by Sir Edmund Hillary & Sherpa Tenzing there was a race across the globe among the climbers to explore various mountains & peaks. In 1954, Himalayan Mountaineering Institute was set up in Darjeeling for imparting courses & training. Progressively, in 1961 Western Himalayan Mountaineering Institute (later known as Atal Bihari Vajpayee Institute of Mountaineering & Allied Sports, Manali in 2008) was founded.

Mountaineering as adventure sports became most popular among youths in India & Abroad. To facilitate training to the masses, many other institutions evolved over a period of time. Mountaineering Institutes offers a variety of adventure courses viz Basic Mountaineering Course, Advanced Mountaineering Course, Method of Instructors, Search & Rescue, Skiing, Water Sports, Aero Sports. These courses are open to male & female trainees between certain ages across the world.

RESEARCH METHODOLOGY

A study adopted a quantitative pre-test and post-test survey design. Primary data collected from Basic Mountaineering Course Batch trainees of ABVIMAS, Manali, Himachal Pradesh in the month of June 2026. Primary Data collected using google form circulated for a particular course. Out of total 114 basic mountaineering course trainees 'responses of Sample Size of 51 trainees (Male=45 & Female=6) were collected using convenience sampling method. Six-items Task-Specific Confidence Scale measured on a five-point Likert scale & results were analysed using statistical tools.

Researcher observed that very few studies available regarding mountaineering training which studies confidence level of trainees & growth in task-specific self-confidence & also gender-specific challenges or perceptions with respect to highly technical mountaineering training, considering this gap and attempt has been made to review some important study papers in journals & using primary data collected from trainee of ABVIMAS, Manali (Himachal Pradesh)

OBJECTIVES OF RESEARCH PAPER

- 1) To compare the baseline confidence level of male & female trainees before starting the Basic Mountaineering Course.
- 2) To measure the change (growth) in the tasks-specific self-confidence after completion of one week of mountaineering training.
- 3) To identify gender-specific challenges / perceptions of trainees with respect to technical mountaineering training skills.

HYPOTHESIS

H01 – There is no significant difference between pre-test & post-test confidence levels of BMC Trainees.

H02 – There is no significant difference in confidence growth between male & female trainees.

THE SELECTED LITERATURE REVIEW

The literature on mountaineering & adventure sports activities is vast & growing, reflecting its importance for the research field. In this section literature review of a few papers were carried out by researchers to understand the key scholarly contributions that have shaped understanding in this field.

1) The author's discussion is focused on gender differences in risk perceptions for mountaineering. It states that men & women perceive risks differently when introduced in mountaineering activities. Men usually show lower perception of risks when compared with women in mountaineering related activities. Men do not wish to face serious risks or possibility of accidents. While women respondents show higher risk perceptions & reported a serious risk, experiencing anxiety & distress related to mountaineering. The author also discussed that women show less frequency as compared to men who climb five times higher than women. The author underpinned that, there is need for awareness & education for men climbers to enhance safety in high-risk outdoor activities. (Novie Susanto*, 2018)

2) The author measured & compared self-confidence levels among a total 40 male and female participating in Cross-Country Mountaineering & Skiing activities from

ABVIMAS equally from the Mountaineering & Skiing category. Self-confidence level checked one-way ANOVA. Authors observed that, there is significant gender-based difference in self-confidence level. The author observed that male shows higher self-confidence than female respondent. Author suggests that sociocultural, psychological & sports specific factors contribute to differences among male & female. (Raghubanshi, (2023))

3) Author introduced concept of Self-Efficacy. It is defined as an individuals' belief in their capacity to organize, execute actions to achieve specific objectives. Theory discusses that, mastery experiences are most influential source of self-efficacy development. In mountaineering training, successful completion of challenges in handling tasks can increase confidence. Author discussed about person's belief about their abilities to successfully perform a specific task. Task specific confidence is based on author's Social Cognitive Theory. It is developed through mastery experiences, observations of others, positive emotional states etc. Higher Self-Efficacy improves resilience, motivation & performance in demanding situations which is important for success in tasks. (Bandura, 1977)

4) Author talks about Experiential Learning Theory which says learning a continuous process of experience, reflection, conceptualization, and application. Training allows trainee to learn from real life challenges & practice. Experiential learning increases technical skills, confidence, leadership, and problem-solving abilities. (Kolb, 1984).

5) The Author discusses about Outdoor Adventure Education program use physical as well as psychological challenges in natural environments to develop interpersonal connection, self-perception and personal adoptive skills. Author has highlighted that, 5 days residential outdoor adventure program produces significant growth in psychological resilience ($ES = 0.38$ 6.29%) increase, much higher than campus-based control groups. Author talks about strong group ties, independence and mastery over skills were important mechanisms pushing these adoptive

changes. Author mentioned that, important gender specific trajectories in experimental learning have been emphasized by the fact that female showed greater adoptive improvements and which were 35% more than male participants to get high positive outcome in terms of resilience. Author finds that, these results confirm that short term adventure-based treatment can effectively encourage the development of task specific competency, self-efficacy as well as ability to manage the stress. (McKenna, 1999).

6) Author(s) discussed that, historically the outdoor adventure education field has been dominated by hegemonic philosophies that emphasize risk taking, endurance and physical domination. Author used quasi experimental mixed method to measure gender based psychosocial effects throughout a 21 days Outdoor Program. Author highlighted that, there is no significant gender difference in long term retention and also life effectiveness improvements. The intervention produced substantial gender difference in post program resilience i.e. $p = 0.02$, $d = 0.56$ for Male and $d = 0.11$ for Female at Time 2). Author observed that, rigid gender binaries had for less impact on participants task adoption than individual criteria including baseline physical fitness, past outdoor experiences and individual history. (Akhurst, 2023).

7) Author discusses about the Adventure Education models systematically improve psychological outcome in physical setting. Pre & Post study of 492 students made to evaluate Adventure Education involvement planned around challenge and controlled risks. Author observed significant pre to post increase in motivation, self confidence level, enjoyment and resilience ($p < 0.001$). Author used ANOVA which revealed no significant time x gender interaction, representing that post-intervention psychological improvements arises uniformly across both male and female participants. Author highlights utility structured pre-test and post-test designs in measuring intervention driven self-efficacy and resilience across both genders. (Andrés Calmaestra-Sánchez 1, 2026).

8) Author discussed about the experiential learning

which demonstrate that short term outdoor education is effective catalyst for individual development and psychological growth. Author assessed 90 university students for one day outdoor education program perceived self-efficacy using single group pre-test and post-test (50 male and 40 female). Author studied communication focused problem-solving activities, high level challenges and experiential learning activities. Author discusses that, after the course of action, self-efficacy scores significantly increase ($p < 0.05$). Author also observed that, gender revealed no significant difference in self-efficacy increases. This data shows that structured, short term experimental outdoor activities promote self-efficacy irrespective of gender. (Yildiz, 2016).

9) Author discusses that, variety of psychological processes are responsible for viz. motivation, self-efficacy and coping techniques for success as athletics. Author investigated into how gender modifies relationship between psychological factors and sports outcomes in a comparative analysis of 60 adult athletics (30 male and 30 female). Author revealed that, compared to male athletics, female shows better psychological self-efficacy ($p < 0.05$) and intrinsic motivation to experience stimulation ($p < 0.01$). Author used regression modelling also to show that female performance was more dependent on intrinsic motivation and self-efficacy and performance of male was mostly predicted by achievement motivation and confidence. (Dhankar, 2024).

10) Author discusses that adventure education has consistently positive psychological outcome across varied participants groups. Author conducted largest analysis of field and synthesizing findings from 96 independent studies connecting more than 12000 participants. Author concluded that adventure education significantly improves self-concepts, leadership quality, interpersonal skills, personality development & academic performance. (Hattie, 1997)

11) Author discussed about gender differences in self-confidence which were examined across educational as well as physical activities background. Author described that male often displays higher confidence before performing unfamiliar tasks despite equal objective performance. Author specified that these differences are frequently attributed to socialization process rather than actual competency. (Lundeberg, 1994)

12) Author discussed in his book about educational intervention studies that commonly employ pre-test and post-test designs to measure changes attributable to the training programs. Author recommends this approach as it directly quantifies learning and psychological development while monitoring for baseline differences. In outdoor education research, pre-test and post-test assessments of participants are frequently analysed using paired samples t-tests and independent-sample t-tests to examine group improvements. Author also highlights that; such design is particularly suitable for evaluating changes in tasks-specific confidence among male and female trainees in outdoor adventure training environments. (Fraenkel, 2019)

13) Author evaluated motivational determinants of pre-service teachers towards outdoor teaching skills across Swiss Teacher Universities. Author used structural equation modelling which revealed that personal interest in nature as a learning environment as well as strong belief beliefs in outdoor teaching developmental benefit viz social, cognitive, emotional and transversal which served as the primary driver in learning motivation. Author interestingly comes across that, self-efficacy beliefs had a mixed, negligible overall effect. Whereas the global environment is concerned with only indirect influence. Author highlights that initial teacher training must nurture interest and positive outcome expectations to foster workable outdoor teaching adoption. (Smit, 2026).

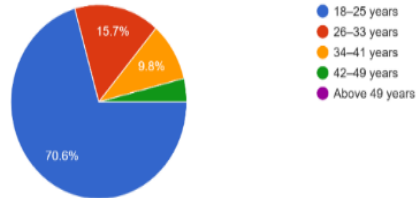
DATA ANALYSIS & INTERPRETATION

A) Demographic variables of the respondents:

i) Age in Years: (Source: Survey Data)

Sr. No.	Age Groups	No. of Respondents	Percentage (%)
1	18 to 25	36	70.59%
2	26 to 33	8	15.69%
3	34 to 41	5	9.80%
4	42 to 49	2	3.92%
	Total	51	100.00

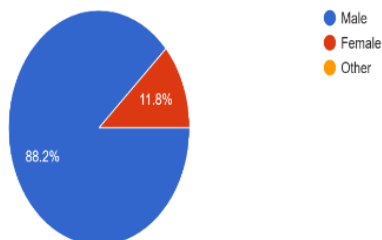
Age Group
51 responses



ii) Gender: (Source: Survey Data)

Sr. No.	Gender	No. of Respondents	Percentage (%)
1	Male	45	88.24%
2	Female	6	11.76%
	Total	51	100.00

Gender
51 responses



INTERPRETATION OF TABLES

For Age in Years: Majority (70.59%) of the respondent belongs to 18-to-25-year age group. While remaining respondent belongs to 25 years & upper age group.

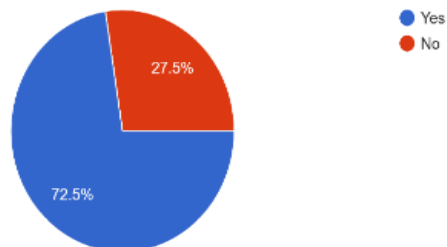
For Gender: Majority (88.24%) of the respondent are Male trainees while remaining (11.76%) of the respondent are Female trainees.

iii) Prior Exposure to Trekking/Outdoor Activates:

Sr. No.	Prior Experience	No. of Respondents	Percentage (%)
1	YES	37	72.55%
2	NO	14	27.45%
	Total	51	100.00

(Source: Survey Data)

Previous Trekking / Outdoor Experience in High Mountain?
51 responses



Majority (72.55%) of the respondent are having prior outdoor experience while remaining (27.45%) of the respondent were not having any prior outdoor/trekking experience.

B) Study of confidence level of trainees:

Researcher has studied responses of 51 mixed-gender trainees of Basic Mountaineering

Course of Batch No. 380 during the month of June 2026 at Atal Bihari Vajpayee Institute of Mountaineering & Allied Sports, Manali, Himachal Pradesh (India) through questionnaire on a Five-Point Scale starting from 1 to 5 in which 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree & 5 = Strongly Agree.

Male Respondents:

Activities	Pre-Mean	Post-Mean	% Change
Rope Knots	2.69	3.93	46.28%
Basic Rock Climbing	3.31	3.98	20.13%
High-Altitude Trek Physical Readiness	3.62	4.09	12.88%
Mixed-Gender Group Comfort	4.02	4.36	8.29%
Confidence Level Technical Climbing	2.29	2.53	10.68%
Obstacle Training Comfort	3.76	4.09	8.88%

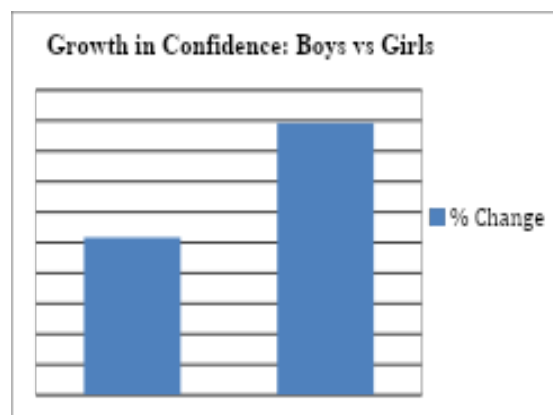
Average Growth in Confidence (%) is 17.86% (Male)

Female Respondents:

Activities	Pre-Mean	Post-Mean	% Change
Rope Knots	3.00	3.50	16.67%
Basic Rock Climbing	3.17	3.50	10.53%
High-Altitude Trek Physical Readiness	3.50	3.50	0
Mixed-Gender Group Comfort	3.50	3.67	4.76
Confidence Level Technical Climbing	1.67	2.17	30
Obstacle Training Comfort	3.50	3.50	0

Average Growth in Confidence (%) is 10.33% (Female)

GRAPHICAL PRESENTATION



C) Statistical analysis & interpretation:

i) Independent Samples t-test (Male Vs. Female): Independent Samples t-test computed on the Composite Total Growth Score (Male Vs. Female) between males and females: $t=0.9045$, $p=0.370$

Interpretation: There is no statistically significant difference in confidence growth between male and female BMC trainees ($p > 0.05$).

ii) Paired Samples t-test (Pre-Test Vs. Post Test): Paired Samples t-test comparing pre-test and post-test confidence scores: $t=4.840$, $p=0.00001$.

Interpretation:

There is a statistically significant increase in confidence after one week of BMC training ($p < .001$).

iii) Reliability Analysis (Cronbach's Alpha): Cronbach Alpha (Pre-Test) = 0.811; Cronbach Alpha (Post-Test) = 0.809.

Interpretation:

Both values exceed 0.80, indicating good internal consistency and reliability of the questionnaire.

CONCLUSION

The outcomes show that undertaking the Basic Mountaineering Course significantly improves trainees' task-specific confidence. The results showed no statistically significant gender-based difference in the amount of confidence gain, even though both male and female trainees demonstrated growth. The survey instrument has high internal consistency, according to reliability analysis. Therefore, regardless of a trainee's gender, the BMC training program may be regarded as helpful in fostering confidence and readiness. It has been observed that, mixed-group comfort increases for both, which indicates that Basic Mountaineering Course is succeeding in social integration during training.

LIMITATION OF STUDY

- 1) Current research is based on sample size of 51 respondents (Male = 45 and Female = 6).
- 2) This research paper is only focused on ABVIMAS, Manali (HP) mountaineering institutes.

- 3) This paper is based on Self-Reported Questionnaire & meant for Short-Term Assessment only.

FUTURE RESEARCH

Future research may include:

- 1) Multiple mountaineering institutes in India
- 2) Observe leadership skills of trainees
- 3) Study resilience & risk perception of trainees independently.

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