



## **Effect of Bhramari Pranayama on the Behaviour of Orphan Girls**

**Ms. Neha Bisht**  
**Research scholar**  
**Department of yoga science**  
**Nirwan University Jaipur**

**Dr. Bhavna Detha**  
**Professor**  
**Nirwan University Jaipur**

### **Abstract**

Adolescence is a critical developmental stage marked by emotional sensitivity, identity formation, and social adaptation. For orphan girls, this stage becomes particularly vulnerable due to the absence of parental attachment, exposure to trauma, and institutional living conditions. These factors frequently manifest as behavioural disturbances, emotional dysregulation, depression, and social withdrawal. The present study investigates the effectiveness of Bhramari Pranayama, a yogic breathing technique known for its calming neurological effects, in improving behavioural and emotional functioning among orphan girls.

A quasi-experimental pre-test/post-test control group design was employed. Eighty orphan girls aged 11–18 years participated in the study. The experimental group (n=50) underwent a structured 40-day intervention centered on Bhramari Pranayama, Om chanting, and guided relaxation, while the control group (n=40) continued routine institutional activities. Behavioural and emotional outcomes were measured using the Children's Depression Inventory (CDI), interpreted as an indicator of emotional distress and behaviour-linked depressive tendencies.

Results revealed a substantial reduction in depression-related behavioural risk in the experimental group. The mean score decreased from 70.95 to 49.20, with 96% of participants moving into the average behavioural range. In contrast, the control group exhibited only minimal improvement. Reduced variability in post-test scores indicated consistent benefit across participants.

The findings strongly suggest that Bhramari Pranayama is an effective, low-cost, culturally accessible intervention for improving emotional regulation and behaviour among orphan girls. The study supports integrating yogic breathing practices into institutional care systems and adolescent mental health programs.

### **Introduction**

The loss of parental care fundamentally alters a child's emotional world. Orphan girls, in particular, experience layered vulnerabilities shaped by grief, abandonment, institutional



dependency, and social stigma. These psychological burdens frequently manifest as behavioural disturbances that affect learning, peer relationships, and long-term mental health.

Behaviour is not merely outward conduct; it is the visible expression of internal emotional states. When children lack safe attachment figures, their nervous systems often remain in a heightened state of alert. Chronic stress can impair emotional regulation, increase impulsivity, and contribute to depressive symptoms. For orphan girls, behavioural issues often represent unspoken emotional pain.

Traditional psychological interventions are often difficult to implement in orphanage settings because of financial limitations, shortage of trained professionals, and cultural or logistical barriers. Many institutions lack the resources required for long-term therapy programs or medication-based treatments. This situation creates an urgent need for alternative approaches that are affordable, practical, and sensitive to the cultural environment of the children. Effective interventions in such contexts must be low-cost, easy to implement within daily routines, culturally accepted by caregivers and participants, non-pharmacological to avoid medical dependency, and sustainable over time. Approaches that meet these criteria can provide consistent emotional support and behavioural regulation without placing additional burden on already limited institutional systems. Yoga, particularly pranayama, fulfils these requirements. Bhramari Pranayama, known as the “humming bee breath,” involves slow breathing combined with a gentle humming vibration. This vibration stimulates the vagus nerve, activates the parasympathetic nervous system, and promotes emotional calmness. From a neurological perspective, Bhramari creates internal resonance that reduces stress arousal and stabilizes mood.

The present research explores whether this simple breathing practice can significantly improve behaviour and emotional health in orphan girls.

### **Need and Significance of the Study**

Orphan girls represent one of the most emotionally vulnerable groups in society, yet their mental health needs are often overlooked in policy and practice. Institutional care systems understandably prioritize survival needs such as food, shelter, clothing, and education. While these are essential, emotional well-being frequently remains under-addressed. Many orphan adolescents grow up carrying grief, abandonment, and insecurity without structured psychological support. When emotional pain is ignored, it often appears in the form of behavioural disturbances — anger, withdrawal, poor concentration, and difficulty forming healthy relationships. These behavioural struggles can lead to academic failure, social rejection, and long-term psychological harm that extends into adulthood. Without early intervention, temporary distress can gradually solidify into chronic emotional patterns.

This situation highlights the urgent need for simple, accessible mental health strategies that can be implemented within institutional environments. Bhramari Pranayama offers such a possibility. It functions not only as a calming exercise but as a preventive mental health practice that strengthens emotional resilience before distress becomes severe. By teaching children how to regulate their own breathing, the intervention provides a practical self-regulation skill they can use independently. These shifts healing from external dependence to internal



empowerment. For girls who may feel powerless due to life circumstances, the ability to influence their own emotional state can be deeply transformative.

Another important aspect of Bhramari Pranayama is that it promotes emotional healing without medication. In resource-limited settings, access to psychiatric care is often scarce, and reliance on pharmacological treatment may not be sustainable. Breath-based practices are safe, culturally accepted, and require no equipment or financial investment. This makes them especially suitable for large-scale adoption in orphanages and schools.

The significance of this study lies in its demonstration that meaningful mental health support does not always require expensive infrastructure. The research provides evidence that scalable, low-cost interventions can create real emotional change in vulnerable populations. By documenting measurable improvement in behavioural and emotional well-being, the study contributes to a growing understanding that healing can be supported through simple, human-centered practices that are both practical and compassionate.

### **Objectives of the Study:**

1. To assess emotional and behavioural condition before intervention
2. To evaluate the effect of Bhramari Pranayama
3. To compare experimental and control groups
4. To examine consistency of improvement

### **Hypothesis:**

**H<sub>0</sub>:** Bhramari Pranayama will significantly improve behavioural and emotional outcomes among orphan girls.

### **Research Design:**

The present study adopted a quasi-experimental pre-test/post-test control group design to examine the effect of Bhramari Pranayama on the behaviour of orphan girls. This design was selected because it allows meaningful comparison between participants who receive an intervention and those who do not, while maintaining ethical sensitivity in an institutional care environment. The pre-test/post-test structure enabled the researcher to observe behavioural and emotional changes over time, ensuring that improvements could be linked to the intervention rather than natural fluctuation. The design also provided a practical framework suited to real-life orphanage settings, where strict experimental control is often difficult to maintain due to institutional routines and participant welfare considerations.

### **Sample:**

The sample consisted of 90 orphan girls residing in institutional care, aged between 11 and 18 years. This age group represents a critical developmental period marked by emotional sensitivity, identity formation, and behavioural adjustment. Participants were divided into two groups: an experimental group of 50 girls and a control group of 40 girls. The experimental group participated in the pranayama intervention, while the control group continued with their



regular daily activities without structured breathing practice. The selection of participants ensured representation across different adolescent stages, allowing the findings to reflect a realistic portrait of behavioural and emotional conditions among orphan girls. The all-female sample allowed the study to focus specifically on gender-related emotional vulnerabilities common in institutional settings.

### **Intervention:**

The intervention consisted of a structured 40-day daily practice centered on Bhramari Pranayama, supported by Om chanting and guided relaxation. Each session lasted approximately 20 to 25 minutes and was conducted in a calm, supportive group environment. The humming vibration of Bhramari breathing was practiced slowly and rhythmically, encouraging participants to focus on their internal sensations and breath awareness. Om chanting reinforced collective calmness and emotional grounding, while guided relaxation helped release physical and mental tension. Over the 40-day period, the girls gradually became more comfortable with the practice, often describing feelings of calmness, emotional relief, and increased inner stability. The intervention was intentionally simple so it could be integrated into daily institutional routines without disruption.

### **Tool used:**

Behavioural and emotional functioning were assessed using the Children's Depression Inventory (CDI), a standardized psychological tool widely used to evaluate emotional distress in adolescents. Although originally designed to measure depression, the CDI also serves as an indirect indicator of behavioural and emotional dysregulation, as depressive symptoms in adolescents often manifest through irritability, withdrawal, and conduct disturbances. The tool provided reliable quantitative data that allowed the researcher to evaluate shifts in emotional state and behavioural risk before and after the intervention.

### **Data Collection:**

Data collection followed a three-stage process: pre-test assessment, intervention period, and post-test assessment. At the beginning of the study, all participants completed the CDI to establish baseline emotional and behavioural conditions. The experimental group then engaged in the 40-day pranayama intervention, while the control group continued their routine activities. At the conclusion of the intervention period, the CDI was administered again to both groups. This sequential approach allowed for direct comparison of changes within each group and between groups. The structured timeline ensured consistency, minimized bias, and provided a clear picture of how the breathing practice influenced emotional regulation and behaviour over time.

### **Results:**

#### **Experimental Group: Pre-Intervention Condition:**

The pre-intervention assessment of the experimental group revealed a deeply concerning emotional and behavioural profile. A striking 66% of participants fell within the "very elevated" behavioural risk category, indicating severe emotional distress and maladaptive



behavioural tendencies. The mean score of 70.95 reflected a high concentration of depressive symptoms associated with irritability, withdrawal, and emotional instability. Many participants displayed signs consistent with chronic stress and unresolved trauma, conditions frequently observed among institutionalized adolescents. The high baseline score suggested that the girls were functioning under sustained emotional strain, which likely influenced their interpersonal behaviour, academic engagement, and overall psychological well-being. Importantly, the relatively clustered distribution of scores indicated that emotional distress was not isolated to a few individuals but represented a widespread condition affecting the group collectively.

### **Experimental Group: Post-Intervention Condition:**

After the 40-day practice of Bhramari Pranayama, a clear and meaningful shift was observed in the emotional and behavioural condition of the girls in the experimental group. The post-test results showed that 96% of the participants moved into the average or lower behavioural risk category, and none of the girls remained in the elevated range. The mean score dropped from 70.95 to 49.20, indicating a strong reduction in emotional distress. This change was not limited to a few individuals; instead, improvement was visible across almost the entire group. The narrowing of score variation after the intervention suggests that the breathing practice supported all participants in a fairly consistent way, helping stabilize their emotional responses.

Caregivers also noticed practical changes in daily life. They described the girls as calmer, less reactive, and more cooperative with peers. Conflicts reduced, and group interactions became smoother. Many of the participants shared that they felt lighter, quieter inside, and more in control of their emotions. These lived experiences matched the statistical findings, suggesting that the intervention did not simply produce a short-term mood lift but encouraged real behavioural regulation. The complete disappearance of elevated risk cases after the intervention highlights how powerful structured breathing can be in supporting emotional balance during adolescence.

### **Control Group Outcomes:**

In comparison, the control group showed only small and uneven changes in emotional and behavioural condition during the same time period. The average score dropped slightly from 69.01 to 65.68, but this difference was too minor to suggest real psychological improvement. Many participants continued to fall within elevated risk categories, indicating that emotional distress remained a common experience. The small shifts that did occur were irregular and did not follow a clear pattern of recovery. Instead, they seemed to reflect normal emotional ups and downs that adolescents experience, rather than the result of any structured support.

The persistence of high distress levels in the control group makes an important point: without intentional intervention, emotional difficulties tend to continue. Everyday institutional routines, although necessary for care and discipline, were not enough to help the girls regulate their emotions in a lasting way. This outcome underlines how vulnerable orphan adolescents can be when they lack access to targeted mental health practices, and it reinforces the need for proactive, supportive interventions within institutional environments.

### **Comparative Outcome:**



A direct comparison of the two groups shows a clear difference in how their emotional conditions changed over time. The experimental group experienced a strong and consistent reduction in behavioural distress, while the control group improved only slightly. The size of the improvement seen in the experimental group was far greater than what could be explained by normal emotional ups and downs. The gap between pre-test and post-test scores makes it evident that the breathing practice acted as a genuine therapeutic support, not just a coincidence or temporary shift.

This comparison highlights how effective the intervention was in strengthening emotional regulation and behavioural stability. While many girls in the control group continued to struggle with elevated distress, those in the experimental group moved toward greater emotional balance and healthier functioning. The contrast between the two groups offers convincing evidence that structured breathing practices can serve as a practical and meaningful mental health tool within orphanage environments.

### **Discussion:**

The results of this study show that Bhramari Pranayama brought real and visible change in the lives of the girls who practiced it. As their emotional state became calmer, their behaviour naturally improved. They were less irritable, more patient with one another, and more willing to cooperate in group settings. Caregivers noticed that everyday conflicts reduced and interactions became smoother. This suggests that when inner emotional tension decreases, outward behaviour becomes more balanced. For girls living in institutional care, where stress can quietly build over time, even small emotional relief can create meaningful behavioural change.

What makes these findings especially powerful is how the participants themselves described their experience. Many shared that they felt less anger inside, slept more peacefully, and reacted more calmly to situations that would normally upset them. Some said they felt happier without knowing exactly why — just a lighter feeling in their body and mind. Others spoke about improved friendships and a greater sense of belonging. These voices remind us that the improvement was not just statistical; it was deeply personal. The breathing practice gave them a simple tool to settle their emotions and reconnect with themselves.

Another important point is that the improvement was not limited to a few girls. The reduction in score differences shows that almost everyone benefited in a similar way. This matters greatly in orphanage settings, where interventions must support entire groups rather than isolated individuals. A practice that works collectively helps build a healthier emotional environment for the whole community.

The results also make sense from a biological perspective. Slow, humming breathing is known to calm the nervous system and reduce stress responses. When the body feels safe, the mind follows. This connection between breath and emotion helps explain why such a simple daily practice created such noticeable behavioural shifts. It shows that healing does not always require complex systems — sometimes it begins with something as basic and powerful as breathing.



### **Educational Implications:**

**Can be integrated into school morning routines:** A short session of Bhramari Pranayama at the beginning of the school day can help students settle emotionally before classes start. When children arrive with different moods, stress, or distractions, a few minutes of guided breathing creates a shared calm space. This prepares them mentally for learning and sets a peaceful tone for the entire day.

**Supports classroom discipline:** Many discipline issues in classrooms come from emotional restlessness rather than intentional misbehaviour. When students learn to calm themselves through breathing, they become less reactive and more patient. Teachers may find that classrooms become easier to manage, not because of stricter rules, but because students feel more emotionally balanced.

**Enhances concentration:** A calm mind focuses better. Regular breathing practice helps students slow down racing thoughts and improve attention span. This increased concentration allows them to listen more carefully, participate actively, and stay engaged with lessons for longer periods.

**Reduces conflict:** When emotional tension decreases, arguments and impulsive reactions also reduce. Students who feel calmer are less likely to overreact to small frustrations. Over time, this can create a classroom culture where disagreements are handled more peacefully.

**Improves peer relations:** Breathing together as a group builds a quiet sense of unity. Students become more cooperative and empathetic toward one another. As emotional regulation improves, friendships become more stable and supportive, helping children feel safer and more connected in school.

**Strengthens emotional resilience:** Regular breathing practice helps girls develop the inner ability to handle stress, disappointment, and emotional pain in healthier ways. Instead of being overwhelmed by difficult feelings, they gradually learn how to calm themselves. This resilience is especially important for orphan adolescents, who often carry emotional burdens that require gentle and consistent coping tools.

**Reduces long-term mental health risk:** Early emotional support can prevent distress from becoming chronic in adulthood. By learning simple self-regulation practices during adolescence, the girls build protective habits that may lower their risk of severe anxiety, depression, or behavioural problems later in life. Small daily practices can create long-lasting mental health benefits.

**Encourages self-healing skills:** One of the most powerful outcomes of the intervention is that it teaches girls they can participate in their own healing. Instead of depending entirely on external support, they gain a personal technique to settle their emotions whenever needed. This sense of self-agency builds confidence and independence.

**Promotes dignity and empowerment:** Breathing practices restore a sense of control over one's inner world. For girls who may feel powerless due to life circumstances, this



experience can be deeply empowering. Feeling calm, capable, and emotionally steady supports personal dignity and strengthens their belief in their own worth and abilities.

### **Conclusion:**

The findings of this study highlight the remarkable potential of Bhramari Pranayama as a behavioural and emotional support practice for orphan girls. Over a relatively short period of time, the intervention produced a clear and meaningful reduction in emotional distress, showing that even simple breathing techniques can bring deep psychological relief. The girls who participated did not just show numerical improvement on assessment scales; they experienced visible changes in their daily lives. They became calmer, more emotionally steady, and better able to manage their reactions. These shifts suggest that restoring emotional balance does not always require complex systems or expensive treatments — sometimes healing begins with accessible practices that reconnect individuals with their own bodies.

At a deeper level, the study reminds us that the human body carries its own capacity for healing. Through breath, the girls learned a quiet but powerful form of self-regulation. They discovered that calmness can be cultivated from within rather than imposed from outside. This realization is transformative. It offers not only emotional relief in the present moment but also a lifelong tool for resilience. In this sense, the research does more than evaluate an intervention — it points toward a compassionate model of care that values inner strength, dignity, and self-awareness.

### **Recommendations:**

**Daily pranayama in orphanages:** Orphanages should consider incorporating a short, structured pranayama session into the daily routine of children. Even 10–15 minutes of guided breathing can provide emotional grounding and help create a calmer living environment. When practiced consistently, it can become a shared ritual that supports collective well-being and reduces everyday emotional tension.

**Training caregivers in yoga:** Caregivers and institutional staff should receive basic training in simple breathing and relaxation techniques. When adults understand and practice these methods themselves, they can guide children more effectively and model calm emotional behaviour. This not only strengthens the impact of the intervention but also improves the emotional climate of the institution as a whole.

**Inclusion in school curriculum:** Schools serving vulnerable children should integrate pranayama and mindfulness practices into regular educational schedules. Teaching emotional regulation alongside academic subjects helps children develop balanced growth. These practices can be included in morning assemblies, physical education periods, or mental health programs.

**Government mental health programs:** Policy-makers should recognize the value of low-cost, non-pharmacological interventions like pranayama in national mental health initiatives. Supporting yoga-based programs in child welfare institutions can reduce the long-term burden on healthcare systems while improving quality of life for vulnerable populations.



**Long-term implementation:** The benefits observed in this study suggest the importance of sustained practice rather than short-term programs. Institutions should aim for long-term adoption of breathing practices so that children grow up with consistent emotional support tools. Continuity ensures that the intervention becomes a life skill rather than a temporary activity.

### References:

1. Perry, G., Polito, V., & Thompson, W. F. "How Chanting Relates to Cognitive Function, Altered States and Quality of Life Across Traditions." PMC 9688188. PMC
2. "Positive Effects of 'AUM' Chanting on Mental Health Well-Being." Traditional Medicines Journal. traditionalmedicines.org
3. Fox, K. C., Dixon, M., et al. "Functional neuroanatomy of meditation: A review and meta-analysis of 78 functional neuroimaging investigations."
4. <https://www.irjweb.com/Effect%20of%20Bhramari%20Pranayama%20on%20Mental%20Health%20of%20Orphans.pdf>
5. Srivastava, S., Goyal, P., Tiwari, S. K., & Patel, A. K. (2017). Interventional effect of Bhramari Pranayama on mental health among college students. *International Journal of Indian Psychology*, 4(2), Article 44. <https://doi.org/10.25215/0402.044>
6. Jagadeesan, T., Archana, R., Kannan, R., Jain, T., Allu, A. R., Selvi, T. G., Maveeran, M., & Kuppusamy, M. (2022). Effect of Bhramari Pranayama intervention on stress, anxiety, depression and sleep quality among COVID-19 patients in home isolation. *Journal of Ayurveda and Integrative Medicine*, 13(4), 100661. <https://doi.org/10.1016/j.jaim.2022.100661>
7. Campion, J., Javed, A., Sartorius, N., & Marmot, M. (2020). Addressing the public mental health challenge of COVID-19. *The Lancet Psychiatry*, 7(8), 657–659. [https://doi.org/10.1016/S2215-0366\(20\)30240-6](https://doi.org/10.1016/S2215-0366(20)30240-6)
8. [https://shodhgangotri.inflibnet.ac.in/bitstream/20.500.14146/18254/1/ys\\_av\\_mn.pdf](https://shodhgangotri.inflibnet.ac.in/bitstream/20.500.14146/18254/1/ys_av_mn.pdf)
9. [https://www.iamj.in/public/article/doi/3913\\_3918.pdf](https://www.iamj.in/public/article/doi/3913_3918.pdf)
10. <https://pmc.ncbi.nlm.nih.gov/articles/PMC5755957/>
11. <https://ijip.in/wp-content/uploads/2019/02/18.01.044.20170402.pdf>
12. Singh, S.K. (2009). Dissertation: "Efficacy of Special Pranayama on the Selective Physiological and Psychological factors among college going students". Dept. of Yogic Sciences and Holistic Health, School of Yoga and Health, DSVV, Haridwar (U.K.), p.3.
13. Patanjali, Maharshi. II/1. "Yoga Darshn". Geeta Press Gorakhpur, pp.11.
14. Rajapurkar, M.V. (1999). "Pranayama modulator of cerebral functions". "Yoga Mimamsa", Vol.33, No. 4, Jan (1999), pp.42-60. Kaivalyadham, Lonavala.
15. [https://www.wisdomlib.org/uploads/journals/irjay/2023\\_vol-6-no-5-may\\_165\\_181.pdf](https://www.wisdomlib.org/uploads/journals/irjay/2023_vol-6-no-5-may_165_181.pdf)