ORIGINAL ARTICLE

The Silent Strain: Burnout Syndrome Among Healthcare Personnel in a Tertiary Care Hospital of Dehradun District a Cross sectional study

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ABSTRACT

Background: Burnout syndrome is a growing concern among healthcare professionals globally. The psychological challenges associated with burnout significantly affect the health and performance of healthcare personnel and, in turn, the quality of patient care. However, region-specific data, especially in settings like Dehradun, India, is limited. This study aimed to assess the prevalence and severity of burnout syndrome among healthcare professionals, including doctors, nurses, and technicians, working in a tertiary care hospital District, Dehradun. **Methods:** A cross-sectional study was conducted over five months at the Himalayan Institute & Hospital Trust, including 310 participants selected via simple random sampling. Data were collected using a predesigned, pre-tested, self-administered questionnaire, including the Maslach Burnout Inventory. Statistical analysis was conducted using SPSS Version 20. A 95% confidence interval was considered, and a p-value of <0.05 was taken as statistically significant. **Results**: The majority of participants were under 30 years of age (61%), with 76.5% working in rotating shifts. Burnout was measured across three domains: emotional exhaustion, depersonalization, and personal accomplishment. While emotional exhaustion was low in 70.3% of participants, 31.3% exhibited high depersonalization. Remarkably, 100% reported high personal accomplishment. Nurses showed significantly higher levels of emotional exhaustion (13.3%, p = 0.003) and depersonalization compared to doctors and technicians. **Conclusion:** Despite a strong sense of professional efficacy across roles, notable levels of emotional fatigue and detachment were observed, especially among nurses. The findings emphasize the need for role-specific interventions, mental health support services, and organizational strategies to mitigate stress and burnout among healthcare personnel.

KEYWORDS

Burnout Syndrome, Job Stress, Healthcare Professionals, Emotional Exhaustion, Tertiary Care Hospital

INTRODUCTION

India, with a population exceeding 1.4 billion (1), boasts a vast healthcare system. However, this system is heavily reliant on its workforce, estimated at over 8 million healthcare professionals (HCPs)(2). These individuals are the backbone of medical care, playing a vital role in safeguarding public health. Unfortunately, this critical workforce faces a significant challenge: burnout and stress. Burnout syndrome is a psychological condition marked by emotional exhaustion, cynicism towards patients, and a diminished sense of personal achievement (3). Job stress arises from an imbalance between work demands and available resources, leading to psychological and physical strain. Both conditions negatively impact individuals' health and well-being, as well as the quality and safety of patient care (4).

Studies worldwide have reported high prevalence rates of burnout and job stress among healthcare professionals. To effectively assess and address burnout, researchers rely on validated instruments. The Maslach Burnout Inventory (MBI) stands as a cornerstone in this field (5). This issue is not unique to Dehradun but is a global concern affecting healthcare workers' well-being and patient care quality. However, there is limited research available specifically on burnout and stress among healthcare professionals in Dehradun. Therefore, the study was evaluating the prevalence and severity of burnout syndrome among healthcare personnel working in a tertiary care hospital in the district Dehradun.

MATERIAL & METHODS

This cross-sectional study was conducted in a tertiary care hospital of the district Dehradun over 5 months (March-July 2024), after obtaining informed consent from healthcare personnel and ethical clearance. The study included healthcare personnel, including doctors,

nurses, and technicians, who had been employed at the tertiary care hospital in Dehradun for at least six months and were willing to participate voluntarily. However, individuals with a prior diagnosis of psychiatric disorders, those who had taken a similar questionnaire in the past six months, and those who were on leave during the study period were excluded. Additionally, participants who could not be reached after 3 attempts were excluded from the study.

Inclusion Criteria:

- Healthcare personnel (doctors, nurses and technicians) employed in a tertiary care hospital in District Dehradun for at least six months.
- Individuals who were willing to participate voluntarily.

Exclusion Criteria:

- Healthcare personnel who had previously been diagnosed with psychiatric disorders were excluded from the study, as this could affect their perception of burnout and stress.
- Survey participants who could not be contacted after three attempts.
- Survey participants who were on leave during the study period.
- Individuals who took a similar questionnaire in the previous six months were excluded from the study to avoid redundancy.

The sample size was calculated using the formula:

$n = [Z^2 \times p \times (1 - p)] / d^2$

Where:

n = required sample size

Z = Z-score corresponding to the desired confidence level (e.g., Z=1.96 for 95% confidence level)

p = estimated prevalence of burnout syndrome 27% (6).

d = desired margin of error (usually set at 5% or 0.05)

$n= (1.96)^2 \times 0.27 \times (1-0.27)/ (0.05)^2$

$n= 302.7 \approx 303$

Hence, in this study total of 310 samples were collected. The sampling frame comprised all eligible healthcare professionals (doctors, nurses, and technicians) working in the selected healthcare facility during the study period. A list of participants was obtained from the Human Resource department records and served as the sampling frame.

A simple random sampling technique was employed to select study participants. Each eligible individual was assigned a unique identification number, and participants were selected using a computer-generated random number table to ensure equal probability of selection and to minimize selection bias.

The final sample included participants from different professional groups, ensuring adequate representation of doctors, nurses, and technicians. The distribution of participants across these groups was proportionate to their availability in the sampling frame.

Data collection technique: Permission was obtained from the hospital administration, and ethical clearance was secured from the institutional ethical committee [SRHU/HIMS/E-1/2024/87] before commencing the study. Data collection was conducted through a predesigned, pre-tested, self-administered questionnaire. The Maslach Burnout Inventory (MBI)-HSS (MP): for Medical Personnel (Cronbach's alpha 0.70) evaluates burnout across three dimensions: Emotional Exhaustion (EE), Depersonalization (DP), and Personal Accomplishment (PA). Each dimension is scored separately and interpreted based on established cut-off values. For Emotional Exhaustion, scores of 0–16 indicate low burnout, 17–26 suggest moderate burnout, and 27 or above reflect high burnout. For Depersonalization, scores of 0–6 are considered low, 7–12 moderate, and 13 or above high. In contrast, Personal Accomplishment is reverse-scored, where lower scores indicate higher burnout. A score of 0–31 in PA suggests high burnout (low sense of accomplishment), 32–38 indicates moderate levels, and 39 or above reflects low burnout (high sense of accomplishment).

Data Management and Statistical Analysis: Statistical Package for Social Sciences (SPSS) Version 20.0 and MS Excel were used to create a database for storing and managing the collected data. Percentages and proportions were calculated for all variables, and graphical representations were used to visualize the data. Chi-square and Fisher's exact tests were performed to assess the significance of associations between categorical variables. A 95% confidence interval was considered, and a p-value of <0.05 was taken as statistically significant.

RESULTS

A total of three hundred and ten study participants from a tertiary care hospital, including doctors (23.9%), nurses (36.5%), and technicians (39.6%), were included in the study, which comprised 163 (53%) males and 147 (47%) females. Of these, the age distribution indicates a majority under 30 years (61%), and the mean age of study participants was 31.44 ± 8.16 years. Educational qualifications showed that 43.2% of participants had completed graduation, 31% had post-graduation, and 25.8% held a diploma. The distribution of years of experience revealed that 44.5 percent had 0-3 years, and 55.5 percent had more than 3 years, with a mean experience of 6.58 ± 7.10 years. A significant portion (76.5%) of the participants worked in rotating shifts. Regarding commuting methods, 116 (37.4%) of the study participants used a two-wheeler vehicle, making it the most popular method, followed by 84 (27.1%) who chose to walk. Driving their four-wheeler was the preferred method for 53 (17.1%). (Table 1)

Table 1: Socio-Demographic Details of study participants (N=310)

Socio-Demographic Characteristics		Frequency (n)	Percentage (%)
Age (in years)	<30	189	61
	31-40	75	24.2
	>40	46	14.8
Caste	General	260	83.9
	OBC	44	14.2
	SC/ST	6	1.9
Religion	Hindu	274	88.4
	Muslim	11	3.5
	Sikh	16	5.2
	Christian	9	2.9
Education	Graduation	134	43.2
	Post-graduation	96	31
	Diploma	80	25.8

Profession	Doctors	74	23.9
	Nurses	113	36.5
	Technicians	123	39.6
Years of Experience (in years)	<3	138	44.5
	03-Jun	73	23.5
	06-Sep	39	12.6
	09-Dec	12	3.9
	Dec-15	15	4.8
	>15	33	10.6
	Mean +SD	6.58+7.10	
Do you work in a rotating shift?	Yes	237	76.5
	No	73	23.5
Have additional responsibility or in committees	Yes	50	16.1
	No	260	83.9
How do you commute to work?	Auto/Tempo/Rickshaw	20	6.5
	College Bus	25	8.1
	Own Vehicle (four-wheeler)	53	17.1
	Own Vehicle (two-wheeler)	116	37.4
	Shared Vehicle	12	3.9
	Walking	84	27.1

Regarding overall physical health, 93 (30%) of respondents rated their health as excellent, another 93 (30%) as very good, and 8 (2.6%) reported poor physical health, respectively. In terms of mental health, 93 (30%) of participants rated their mental health as excellent, 96 (31%) as very good, and 12 (3.9%) as poor. When asked about receiving support or counselling services for stress management or mental health, only 13 (4.2%) of respondents confirmed that they were receiving such support. (Table 2)

Table 2: Physical and Mental health details of study participants

Health Status	Frequency(n)	Percentage (%)
How would you rate your overall physical health?		
Excellent	93	30
Very Good	93	30
Good	88	28.4
Fair	28	9
Poor	8	2.6
Do you have any Chronic Health conditions?		
Yes	11	3.5
No	299	96.5
How would you rate your overall Mental Health?		
Excellent	93	30
Very Good	96	31
Good	80	25.8
Fair	29	9.4
Poor	12	3.9
Are you currently receiving any support or counselling services for stress management or Mental Health?		
Yes	13	4.2
No	297	95.8

Burnout assessment was conducted across three major domains: Emotional Exhaustion, Personal Accomplishment, and Depersonalization using Maslach burnout inventory five-point Likert scale—Never, Rarely, Sometimes, Frequently, and Always.

In the Emotional Exhaustion section, a significant proportion of participants reported feeling emotionally fatigued due to their work. 31.3% of individuals mentioned that they sometimes felt they were working too hard on their job, and 32.6% reported sometimes they were at the end of their rope. Additionally, 34.5% of respondents sometimes felt that working with people directly puts too much stress on them. On the other hand, 28.7% of participants said they never felt frustrated by their job, and 25.8% reported never felt burned out.

The Personal Accomplishment domain reflected a generally positive perception of job performance. A large number of respondents felt they were making a meaningful impact—29.4% frequently felt they were positively influencing others' lives, while 23.5% always felt they dealt effectively with recipients' problems. Furthermore, 34.2% sometimes and 30% frequently felt energetic at work. Similarly, 29% frequently felt they could create a relaxed atmosphere, and 31.6% sometimes felt they had accomplished many worthwhile things in their job.

In the Depersonalization domain, most participants demonstrated a low tendency toward detachment or negative attitudes toward recipients. 38.7% reported never treating recipients as impersonal objects, and 35.2% never felt indifferent to what happened to them. However, there were still some concerns—28.1% sometimes felt emotionally hardened by their job, and 24.2% sometimes felt more callous toward people since taking up the job. (Table 3)

Table 3: Burnout Syndrome among Study participants

S. No.	Burnout	Never n(%)	Rarely n(%)	Sometime n(%)	Frequently n(%)	Always n(%)
Emotional Exhaustion						
1	I feel emotionally drained from my work	74(23.9)	82(26.5)	78(25.2)	53(17.1)	23(7.4)
2	I feel used up at the end of the workday	44(14.2)	93(30)	99(31.9)	52(16.8)	22(7.1)
3	I feel fatigued when I get up in the morning and have to face another day on the job	76(24.5)	69(22.3)	86(27.7)	57(18.4)	22(7.1)
4	Working with people all day is really a strain for me	79(25.5)	82(26.5)	81(26.1)	50(16.1)	18(5.8)
5	I feel burned out from my work	80(25.8)	95(30.6)	80(25.8)	39(12.6)	16(5.2)

6	I feel frustrated by my job	89(28.7)	84(27.1)	68(21.9)	42(13.5)	27(8.7)
7	I feel I'm working too hard on my job	40(12.9)	74(23.9)	97(31.3)	59(19)	40(12.9)
8	Working with people directly puts too much stress on me	80(25.8)	65(21)	107(34.5)	44(14.2)	14(4.5)
9	I feel like I'm at the end of my rope	100(32.3)	54(17.4)	101(32.6)	32(10.3)	23(7.4)
Personal Accomplishment						
1	I can easily understand how my recipients feel about things	25(8.1)	60(19.4)	95(30.6)	58(18.7)	72(23.2)
2	I deal very effectively with the problems of my recipients	12(3.9)	50(16.1)	90(29)	85(27.4)	73(23.5)
3	I feel I'm positively influencing other people's lives through my work	8(2.6)	47(15.2)	94(30.3)	91(29.4)	70(22.6)
4	I feel very energetic	20(6.5)	39(12.6)	106(34.2)	93(30)	52(16.8)
5	I can easily create a relaxed atmosphere with my recipients	20(6.5)	47(15.2)	78(25.2)	90(29)	75(24.2)
6	I feel exhilarated after working closely with my recipients	22(7.1)	62(20)	80(25.8)	78(25.2)	68(21.9)
7	I have accomplished many worthwhile things in this job	24(7.7)	45(14.5)	98(31.6)	92(29.7)	51(16.5)
Depersonalization						
	I feel I treat some recipients as if they were impersonal 'objects'	120(38.7)	69(22.3)	76(24.5)	27(8.7)	18(5.8)
	I've become more callous toward people since I took this job	88(28.4)	79(25.5)	75(24.2)	44(14.2)	24(7.7)
	I worry that this job is hardening me emotionally	80(25.8)	79(25.5)	87(28.1)	46(14.8)	18(5.8)
	I don't really care what happens to some recipients	109(35.2)	64(20.6)	69(22.3)	41(13.2)	27(8.7)
	I feel recipients blame me for some of their problems	91(29.4)	83(26.8)	72(23.2)	43(13.9)	21(6.8)

A majority of participants (70.3%) reported low emotional exhaustion, suggesting that most individuals do not frequently feel emotionally drained by their work. However, a noteworthy proportion (31.3%) exhibited high levels of depersonalization, indicating that nearly one-third may experience emotional detachment or treat recipients in a more impersonal manner. In contrast, 100% of participants reported high personal accomplishment, demonstrating a strong sense of professional efficacy, satisfaction, and fulfilment in their roles despite emotional or interpersonal challenges. (Figure 1)

Figure 1: Burnout among Study Participants

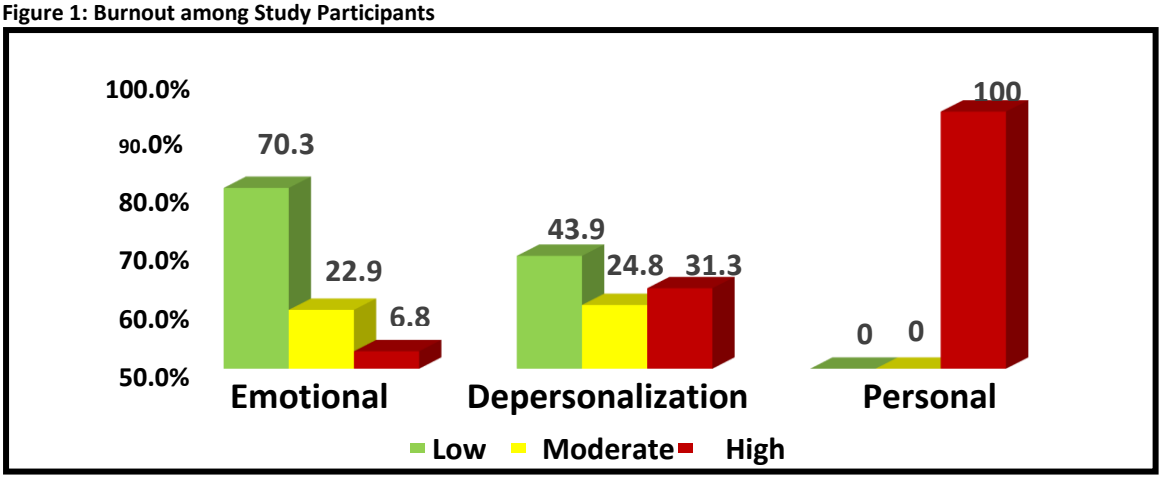

Table 4 indicates that doctors had the lowest levels of emotional exhaustion, with none reporting high burnout, whereas nurses showed the highest percentage (13.3%) in the high emotional exhaustion category, a statistically significant difference (p = 0.003). Across all professions, 100% reported high personal accomplishment, indicating a strong sense of job satisfaction. In terms of depersonalization, nurses had the highest proportion (38.1%) reporting high levels, while doctors and technicians had lower rates (29.7% and 31.3% respectively), though this difference was not statistically significant (p = 0.052).

Table 4: Association between burnout syndrome and work profession of study participants

Variables	Doctors n (%)	Nurses n (%)	Technicians n (%)	p value
Emotional Exhaustion				
Low (≤17)	59(79.7)	76(67.3)	83(67.5)	
Moderate (18-29)	15(20.3)	22(19.5)	34(27.6)	**0.003**
High (≥30)	0(0)	15(13.3)	6(4.9)	
Personal Accomplishment				
Low (≤33)	0(0)	0(0)	0(0)	-
Moderate (34-39)	0(0)	0(0)	0(0)	
High (≥40)	74(100)	113(100)	123(100)	
Depersonalization				
Low (≤5)	37(50)	37(32.7)	62(50.4)	0.052
Moderate (6-11)	15(20.3)	33(29.2)	77(24.8)	
High (≥12)	22(29.7)	43(38.1)	97(31.3)	
() parentheses show column percentages				

DISCUSSION

The mean age of 31.44 ± 8.16 years, with 61 percent under 30 years, aligns with national trends that indicate a younger health workforce, particularly among nurses and technicians (7). A substantial majority (76.5%) of participants reported working in rotating shifts. Shift work is a well-established factor contributing to sleep disturbances, work-life imbalance, and burnout among healthcare providers. A study by Mathew JJ et al. (2018) in Bangalore found that shift work disorder and poor sleep quality were common among rotating shift staff, leading to decreased performance and satisfaction (8).

The self-reported physical and mental health status of the healthcare professionals in this study reflects a generally positive perception of well-being, with 30% of participants rating both their physical and mental health as "excellent" and another 30% and 31% rating them as "very good," respectively. These findings suggest that a substantial proportion of healthcare workers perceive themselves as being in good overall health. This aligns with the findings by Mathias et al. (2023), who reported that the pooled prevalence of depression, anxiety, and stress among HCWs in India was 32.96% 29.49% and 33.47%. (9) Another study suggests global trends where healthcare professionals underutilize psychological support, even when experiencing high levels of burnout and emotional fatigue (4).

In the domain of Emotional Exhaustion, many participants reported moderate levels of fatigue and emotional strain related to work. Afnan F M et al. (2020) found that a substantial proportion of healthcare professionals reported high levels of emotional exhaustion, 3.7%. (10) Similarly, a study by Salvagioni et al. (2017) emphasized that excessive workload and poor organizational support were significant predictors of emotional burnout among health workers across different healthcare settings. (11)

In contrast, the Personal Accomplishment scores were generally high among respondents, indicating a strong sense of efficacy and satisfaction. 29.4% frequently felt they were positively influencing others' lives, and 23.5% always felt effective in solving recipients' problems. These results align with Dyrbye et al. (2017), who reported that a sense of achievement often buffers against the effects of burnout, particularly in clinical roles with high patient interaction. (12) Furthermore, Kumar (2016) found that healthcare workers with a strong sense of purpose and intrinsic motivation reported higher personal accomplishment and lower rates of overall burnout (13).

The Depersonalization domain showed relatively lower levels of detachment or negative attitudes toward patients. A significant portion (38.7%) never treated recipients as impersonal objects, and 35.2% never felt indifferent to their outcomes. This trend is supported by Maslach and Leiter (2016), who explained depersonalization as a defence mechanism in high-stress environments. (14) Similarly, a study by Parola et al. (2017) reported moderate depersonalization levels among frontline health workers, particularly in emotionally taxing roles such as emergency care or intensive care units (15).

A substantial majority of participants (70.3%) reported low emotional exhaustion aligns with research suggesting that certain professions or work environments may foster resilience against feeling emotionally drained (16). Another study also finds that 54% participants reported emotionally exhausting to a very high degree (17). This could be attributed to factors such as strong social support at work, a healthy work-life balance, or the intrinsically rewarding nature of their roles. This could be attributed to factors such as strong social support at work, a healthy work–life balance, or the intrinsically rewarding nature of their roles. A similar finding was reported in Joseph and Ravindran (2025) workplace coping strategies among nurses India, where nurses predominantly used adaptive (approach-based) coping strategies influenced by workplace support, professional experience, and organizational environment, which contributed to better stress management and reduced emotional exhaustion (18).

However, the noteworthy 31.3% exhibiting high levels of depersonalization presents a contrasting picture. This prevalence is higher than reported in some studies examining similar populations (19), suggesting that a significant portion of this group may be employing detachment as a coping mechanism to navigate workplace stressors. This could be linked to factors such as high workload, lack of control, or interpersonal conflicts, as highlighted in previous research (20).

The universally high level of personal accomplishment (100%) is particularly intriguing when juxtaposed with the

presence of depersonalization in a considerable subgroup. This finding resonates with studies that have shown individuals can maintain a sense of professional efficacy and satisfaction even when experiencing emotional detachment (21). Participants may derive a strong sense of identity and purpose from their work, which buffers against the negative impacts of emotional exhaustion or interpersonal strain on their feelings of accomplishment. Alternatively, the high personal accomplishment could act as a protective factor, potentially mitigating the development of emotional exhaustion in the majority of the sample.

Our Study finds that doctors reported the lowest levels, with no individuals experiencing high emotional exhaustion, suggesting that factors inherent in their work environment or coping mechanisms may buffer against this dimension of burnout. This aligns with studies highlighting the potential for high job control and perceived professional status to mitigate emotional depletion (22).

Conversely, the significantly higher percentage of nurses (13.3%) reporting high emotional exhaustion ($p = 0.003$) underscores the considerable emotional demands often associated with nursing. This is consistent with extensive research documenting high rates of burnout among nurses, often attributed to heavy workloads, emotional labor, and exposure to patient suffering (23). The statistically significant difference further underscores the distinct experiences of emotional exhaustion across the two healthcare professions in our study.

Despite these differences in emotional exhaustion, the universal report of high personal accomplishment (100%) across all professions, including doctors and nurses, is a notable finding. This aligns with the findings by Khorfan R et al. (2021), who reported high PA 89.4% among study participants (24). This suggests that even amidst the emotional challenges faced by nurses and the potential for such challenges in other professions, individuals maintain a strong sense of professional efficacy and satisfaction. This resilience in personal accomplishment, despite varying levels of emotional strain, warrants further exploration in the context of healthcare professionals. It could indicate a strong professional identity or a sense of purpose that remains intact even when experiencing other facets of burnout.

Regarding depersonalization, the trend of nurses exhibiting the highest proportion (38.1%) reporting high levels, while doctors (29.7%) and technicians (31.3%) showed lower rates, although not statistically significant ($p = 0.052$), is also noteworthy. The higher tendency towards depersonalization among nurses may be a consequence of the sustained emotional demands and interpersonal stressors they encounter (17).

Conclusion

The findings indicate variations in burnout dimensions among healthcare professionals, with doctors exhibiting lower levels of emotional exhaustion and nurses showing higher levels of depersonalization. No significant association was observed between burnout and socio-demographic factors such as age, caste, religion, or years of experience. These findings highlight the importance of developing targeted strategies to address burnout among healthcare professionals, particularly focusing on improving support systems and resilience in clinical settings.

Recommendation

- **Implement targeted burnout interventions**: Develop and apply profession-specific strategies to address the higher emotional exhaustion in nurses and the trend of depersonalization, while monitoring stress in all staff.
- **Enhance access to mental health support**: Increase awareness, improve accessibility, and address barriers to utilizing confidential stress management and well-being resources for all healthcare personnel.
- **Optimize work organization**: Address factors like shift work and workload through optimized scheduling, workload assessment, and fostering better communication and collaboration.
- **Conduct longitudinal, multi-site research**: Utilize longitudinal studies across multiple hospitals to understand the causal dynamics of burnout and stress and improve the generalizability of findings.

Limitation of the Study

Cross-sectional design limits causal inferences between burnout and socio-demographic factors. Self-reported data may also introduce response bias, affecting the accuracy of burnout levels.

Authors Contribution

All authors have contributed equally.

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Nil

Conflict of Interest

There are no conflicts of interest.

Declaration of Generative AI and AI Assisted Technologies in the Writing Process

The authors haven't used any generative AI/AI assisted technologies in the writing process.

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