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Research Paper

Relationship between Cognitive Flexibility and Burnout among Health Professionals: A Cross-Sectional Correlational Study

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ABSTRACT

Background: Healthcare professionals regularly encounter changing clinical situations, demanding workloads and emotionally intensive interactions. Cognitive flexibility may help professionals adjust their responses when circumstances change, whereas burnout reflects prolonged occupational strain and includes exhaustion and psychological distancing from work. Cognitive flexibility has been introduced as the ability to reconsider alternatives and adapt responses, while burnout has been described as a multidimensional occupational phenomenon associated with sustained job demands. **Objective:** To examine cognitive flexibility and burnout among healthcare professionals and to determine whether cognitive-flexibility dimensions are associated with burnout. **Methodology:** A quantitative cross-sectional correlational study was conducted among 120 registered healthcare professionals aged 25–60 years in Lucknow, Uttar Pradesh. Data were obtained through a demographic schedule, the Cognitive Flexibility Scale and the Maslach Burnout Inventory–General Survey. The reported dataset was analysed using descriptive statistics, t-tests, one-way ANOVA and Pearson correlation. **Results:** The supplied study data showed significant variation in cognitive-flexibility dimensions according to professional experience and education. Living area was not significantly associated with cognitive flexibility. Correlation coefficients between cognitive flexibility and burnout were very small and non-significant: alternative solution with exhaustion (r=.088), disengagement (r=−.110) and total burnout (r=.044); ability to control any situation with exhaustion (r=.048), disengagement (r=.000) and total burnout (r=.001). Night-shift professionals had higher exhaustion scores than day and rotating-shift professionals (F=4.43, p=.014). **Conclusion:** In the available dataset, cognitive flexibility was not significantly related to burnout. The findings indicate that occupational burnout should not be interpreted through cognitive flexibility alone and that work-schedule and other contextual factors warrant attention.

Keywords: *Cognitive flexibility, burnout, healthcare professionals, occupational stress, exhaustion, disengagement, professional experience*

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Relationship between Cognitive Flexibility and Burnout among Health Professionals: A Cross-Sectional Correlational Study

Healthcare professionals work in environments characterized by changing clinical conditions, time pressure, complex decision-making and sustained interpersonal demands. Doctors, nurses, dentists and other health professionals may need to respond quickly to unexpected patient needs, coordinate with colleagues, communicate with patients and families, and revise plans when clinical information changes. These demands require continuous attention, judgement and adaptive thinking. At the same time, prolonged exposure to demanding work environments can contribute to occupational stress and burnout, making the study of individual and workplace factors particularly relevant in healthcare settings [3,4,7–9].

Cognitive flexibility refers to the capacity to reconsider an existing approach, shift between alternatives and modify responses when circumstances change. Martin and Rubin conceptualized cognitive flexibility as involving the perception of alternatives and the willingness and ability to adapt to changing situations [1]. Subsequent work on the Cognitive Flexibility Scale provided evidence for its use in examining how individuals perceive and manage alternatives in interpersonal and problem-solving contexts [2]. In healthcare, such flexibility may be useful when familiar solutions are inadequate, when several demands compete for attention, or when professionals must modify their decisions in response to new information.

The relationship between cognition and occupational burnout is nevertheless more complex than a simple assumption that greater flexibility necessarily protects against burnout. Reviews have reported that burnout may be associated with changes in aspects of cognitive functioning, including attention, memory and executive processes, but findings are heterogeneous and do not establish a single causal pathway [5,6]. Burnout itself is generally understood as a response to chronic occupational stress, with exhaustion and psychological distancing or disengagement representing important dimensions of the experience [3,4]. Among healthcare workers, systematic reviews have documented substantial burnout burden and have linked burnout with outcomes relevant to patient safety, satisfaction and quality of care [7,8].

Work organization may also play an important role. Healthcare professionals working night shifts may experience disruption of sleep, recovery and normal circadian routines, while also managing demanding clinical responsibilities. The present dataset therefore provides an opportunity to examine burnout not only in relation to cognitive-flexibility scores but also across selected professional and workplace characteristics. This broader approach is consistent with contemporary perspectives that view burnout as a phenomenon shaped by the interaction between individual functioning and occupational conditions rather than by a single personal characteristic [4,12].

Against this background, the present study examines whether the measured dimensions of cognitive flexibility—alternative solution and ability to control any situation—are associated with exhaustion, disengagement and total burnout among healthcare professionals. The study also describes variation in cognitive-flexibility scores across selected demographic and professional characteristics and examines burnout-related exhaustion across workplace and health characteristics. The analysis is cross-sectional; therefore, observed associations should be interpreted as relationships within the sample rather than as evidence of causation. The reporting structure follows the general principles of transparent observational research reporting [14].

Aim and Objectives

- To examine the relationship between cognitive flexibility and burnout among healthcare professionals.
- To describe cognitive-flexibility scores across selected demographic and professional characteristics.
- To examine burnout-related exhaustion across selected workplace and health characteristics.
- To determine the association of cognitive-flexibility dimensions with exhaustion, disengagement and total burnout.

METHODOLOGY

Study design and setting

A quantitative, cross-sectional correlational design was used. Participants were healthcare professionals working in healthcare settings in Lucknow, Uttar Pradesh. The study identified South City, Alambagh, Telibagh, Utrathiya and Shaheed Nagar among the selected areas. Because the study used a cross-sectional design, the findings describe relationships observed at the time of assessment and do not establish temporal or causal relationships [14].

Sample and sampling

The sample comprised 120 healthcare professionals aged 25–60 years. The supplied study described multistage random sampling and representation across professional and demographic categories. Professionals on long-term leave or sabbatical and individuals with diagnosed psychological or neurological disorders were excluded.

Measures and data analysis

The dataset included demographic characteristics and scores from the Cognitive Flexibility Scale and Maslach Burnout Inventory–General Survey. The Cognitive Flexibility Scale is grounded in the conceptualization of flexibility as the ability to perceive alternatives and adapt one's approach [1,2]. Burnout was assessed using dimensions represented in the Maslach framework, including exhaustion and disengagement or psychological distancing [3,4]. The reported analyses used frequencies, percentages, means, standard deviations, independent-samples t-tests, one-way ANOVA and Pearson correlations, with $p<.05$ treated as statistically significant.

RESULTS

The demographic composition of the sample is presented below using the numerical data from the previous study.

Table 1: Socio-demographic characteristics of participants

Variable	Category	n	%
Age	25–35	12	10.0
	35–45	31	25.8
	45–55	50	41.7
	55–65	27	22.5
Gender	Male	58	48.3
	Female	62	51.7
Location	Urban	87	72.5
	Rural	33	27.5

Education	MBBS/MD	31	25.8
	BDS	20	16.7
	BHMS	18	15.0
	Nursing	14	11.7
	BAMS	3	2.5
	Other	34	28.3
Family	Nuclear	90	75.0
	Joint	30	25.0
Hospital	Own	16	13.3
	Private	41	34.2
	Government	25	20.8
	Clinic	38	31.7
Health rating	Excellent	5	4.2
	Good	81	67.5
	Fair	28	23.3
	Poor	6	5.0

Table 2: Cognitive flexibility by selected demographic characteristics

Variable	Group	Mean ± SD	Test	p
Living area	Urban	25.47 ± 4.94	t=−0.074	.693
	Rural	25.54 ± 4.65		
Alternative solution	Urban	63.80 ± 6.53	t=−0.520	.611
	Rural	64.51 ± 7.04		
Work experience	10–15 years	66.56 ± 7.45	F=4.442	.000
	15–20 years	62.26 ± 6.50		
	20–25 years	63.68 ± 4.24		
	>25 years	61.29 ± 4.64		
Education – ability to control	All categories	—	F=3.19	.010
Education – alternative solution	All categories	—	F=1.70	.139

Table 3: Interpersonal intelligence by age and selected characteristics

Variable	Group	Mean ± SD	Test	p
Age	25–35	66.41 ± 8.80	t=2.72	.048
	35–45	62.93 ± 4.28		
	45–55	62.50 ± 3.93		
	55–65	61.77 ± 4.56		
Education	MBBS/MD	63.83 ± 3.96	t=0.795	.555
	BDS	61.85 ± 4.79		
	BHMS	62.22 ± 5.56		
	Nursing	62.85 ± 4.50		
	BAMS	59.33 ± 4.93		
	Other	63.14 ± 5.63		
Hospital type	Own	63.31 ± 3.77	t=0.379	.768
	Private	63.19 ± 6.30		
	Government	61.96 ± 3.65		
	Clinic	62.84 ± 4.46		
Shift	Night	61.00 ± 6.75	t=0.388	.680

Variable	Group	Mean ± SD	Test	p
	Day	62.88 ± 5.00		
	Rotating	63.20 ± 3.90		

Table 4: Burnout by selected workplace and health characteristics

Variable	Group	Exhaustion Mean ± SD	Test	p
Gender	Male	17.67 ± 2.28	t=0.95	.340
	Female	17.29 ± 2.09		
Location	Rural	17.60 ± 2.16	t=−0.40	.680
	Urban	17.42 ± 2.20		
Shift	Night	20.20 ± 3.11	F=4.43	.014
	Day	17.40 ± 2.15		
	Rotating	17.07 ± 1.58		
Health rating	Excellent	15.60 ± 1.52	F=2.68	.050
	Good	17.34 ± 2.16		
	Fair	17.85 ± 2.23		
	Poor	19.00 ± 1.67		

Table 5: Pearson correlations between cognitive flexibility and burnout

Cognitive-flexibility variable	Exhaustion r	Disengagement r	Burnout total r	Interpretation
Alternative solution	.088	−.110	.044	Not significant
Ability to control any situation	.048	.000	.001	Not significant

The largest group was 45–55 years (41.7%). Women represented 51.7% of participants, while 72.5% lived in urban areas. Most participants reported good health (67.5%), and 75.0% belonged to nuclear families.

Cognitive flexibility did not differ significantly between urban and rural participants. Work experience was significantly associated with the reported alternative-solution dimension ($F=4.442$, $p<.001$), with the 10–15-year group showing the highest mean. Education was significantly associated with the ability-to-control dimension ($F=3.19$, $p=.010$), whereas the education comparison for alternative solution was not significant.

The supplied data showed the highest interpersonal-intelligence mean in the 25–35-year group. The reported age comparison was statistically significant ($t=2.72$, $p=.048$). Education, hospital type and shift pattern were not statistically significant in the reported comparisons.

The reported exhaustion scores were similar for men and women and for urban and rural participants. The clearest workplace difference was associated with shift: night-shift participants had the highest exhaustion mean (20.20 ± 3.11), compared with 17.40 ± 2.15 for day shift and 17.07 ± 1.58 for rotating shift ($F=4.43$, $p=.014$). Health rating showed a borderline association with exhaustion ($F=2.68$, $p=.050$).

The supplied data do not show a statistically significant relationship between either cognitive-flexibility dimension and any of the reported burnout outcomes. The coefficients are close to zero, indicating very weak linear associations in this sample.

DISCUSSION

The numerical pattern provides a clear answer to the main research question. Although cognitive-flexibility scores varied across some professional characteristics, the correlations with burnout were negligible. Thus, within this sample, greater or lower scores on the measured flexibility dimensions were not accompanied by a meaningful linear difference in exhaustion, disengagement or total burnout. This finding is important because previous literature has suggested that burnout can be accompanied by cognitive difficulties, but the evidence does not imply that a single cognitive characteristic can explain the occurrence or severity of burnout [5,6].

Professional experience showed a significant association with the alternative-solution dimension, and education was associated with the ability-to-control dimension. These findings indicate that flexibility-related scores may vary with professional background. They should not, however, be interpreted as evidence that education or experience causes cognitive flexibility because the design was cross-sectional. The observed differences may reflect accumulated professional experience, differences in training, job roles, workplace demands or other unmeasured factors.

The burnout results point toward the importance of working conditions. Night-shift participants had the highest exhaustion score, and the difference was statistically significant. This pattern suggests that scheduling, sleep disruption and opportunities for recovery may be important when occupational exhaustion is considered. The broader burnout literature similarly emphasizes that burnout is shaped by the work environment and the chronic mismatch between occupational demands and available resources [4,12].

The absence of a significant correlation between cognitive flexibility and burnout should also be interpreted carefully. A non-significant association in this sample does not demonstrate that cognitive flexibility has no relevance to burnout under any circumstances. It indicates that, using the measures and sample available for this study, there was insufficient evidence of a meaningful linear relationship. Other mechanisms—including workload, staffing, organizational support, sleep and recovery, interpersonal stressors, job control and individual coping strategies—may contribute to burnout and may interact with cognitive functioning [4,11,12].

The findings are therefore consistent with a multidimensional understanding of occupational burnout. Recent research has increasingly examined both cognitive and organizational factors, while longitudinal work suggests that coping flexibility and strategy use may have temporal relationships with burnout that cannot be captured by a single cross-sectional correlation [6,11]. Future studies could therefore examine whether changes in cognitive flexibility predict later burnout, whether burnout predicts subsequent changes in flexibility, or whether both are influenced by common workplace factors.

CONCLUSION

Based on the study and numerical data table, cognitive flexibility was significantly associated with selected region and professional characteristics but was not significantly

correlated with burnout. In particular, neither the alternative-solution dimension nor the ability-to-control-any-situation dimension showed a statistically significant relationship with exhaustion, disengagement or total burnout. The correlations were very small and close to zero, indicating that the measured cognitive-flexibility dimensions did not provide a meaningful linear explanation of burnout variation in the present sample. This result should be understood as a finding specific to the available sample, measures and cross-sectional design rather than as evidence that cognitive flexibility is universally unrelated to occupational fatigue and burnout.

The strongest burnout-related difference in the reported data concerned shift pattern, with night-shift professionals showing greater exhaustion than day and rotating-shift professionals. This finding highlights the importance of considering workplace organization, scheduling and opportunities for adequate recovery when assessing occupational well-being. Taken together, the findings support a broader interpretation of burnout that includes work conditions, professional context and health-related factors rather than relying on cognitive flexibility as a single predictor. Consistent with current burnout literature, prevention and intervention strategies are likely to be more useful when they address both individual coping resources and the organizational environment.

In practical terms, healthcare organizations may benefit from monitoring exhaustion among night-shift staff, reviewing scheduling practices, supporting recovery periods and maintaining accessible well-being resources. Professional development can also include adaptive problem-solving and coping skills, but such training should complement rather than replace organizational approaches to workload and working conditions. Future research should use larger and more diverse samples, repeated measurements and longitudinal designs to clarify the direction of relationships among cognitive flexibility, workplace conditions and burnout.

Practical implications

- Healthcare organizations should pay particular attention to shift scheduling and adequate recovery periods for night-shift staff.
- Professional development can include adaptive problem-solving exercises without presenting cognitive flexibility as the sole solution to burnout.
- Burnout monitoring should consider exhaustion, work schedules, health status and other occupational conditions together.
- Future studies should use larger samples and repeated assessments to determine whether changes in flexibility precede or follow changes in burnout.

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Conflict of Interest
The author(s) declared no conflict of interest.

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