Examining How Medical Staff Members Perceive How Emotions Affect Their Behavior When Interacting with Patients

Atef Eid Madkour Elsayed[1], Abdulrahman Omar Alfakhri[2], Yoused Mohammed Alhowaiti[3], Najah Almutairi[4], Raneem Ahmed Altalal[5], Fatema Mohsin Khamis[6], Ammar Ahmed Zamil[7], Mohammed Mohsin Khamis[6], Zainab Abdulkhaleq Mohamed Habib Mohamed[6], Norah Majed Albalawi[8], Rayan Khalid R Albalawi[6]

[1]*Consultant cardiology, King abdelaziz hospital sakaka Saudi Arabia*
[2]*Medicine and surgery*
[3]*General practioner, King Salman Medical city at Medina*
[4]*Doctor of Physical Therapy, Ministry of Health*
[5]*Physiotherapist, North Medical Tower Hospital*
[6]*General practitioner*
[7]*King Saud Bin Abdulaziz University for Health Sciences -Jeddah, Medicine and Surgery*
[8]*Bachelor ln Medicine and Surgery*
Email: a_b65155@yahoo.com

Abstract: Background: Emotions significantly influence physicians' behavior during patient interactions, yet their impact remains underexplored. Transient mood states (e.g., positive mood, fatigue, nervousness) and enduring emotional conditions such as burnout can shape clinical decisions and care quality. Burnout, defined as a response to chronic work stress, may further moderate these effects. This study investigates how medical staff perceive the role of emotions in their professional behavior and examines burnout as a moderating factor.

Methods: The study recruited 150 physicians (56.7% male) from a major healthcare organization, including family physicians, pediatricians, and internists. Participants completed a validated questionnaire assessing mood states, burnout, and self-reported engagement in five patient-related behaviors: communication, prescribing, ordering lab tests, requesting diagnostic imaging, and specialist referrals. Burnout was measured using Kushnir and Melamed's scale. A two-way repeated-measures ANOVA analyzed the effects of mood states and burnout levels on these behaviors.

Results: Significant mood effects were observed across all five behaviors ($p < 0.001$), with positive moods enhancing communication (mean = 5.75) and negative moods, fatigue, and nervousness reducing it. Burnout significantly influenced behaviors such as ordering lab tests ($p = 0.04$), diagnostic imaging ($p = 0.003$), and specialist referrals ($p = 0.02$). Interaction effects between mood and burnout were significant for most behaviors, highlighting the complex interplay between these factors. For instance, high-burnout physicians exhibited increased diagnostic testing in negative emotional states.

Conclusion: Emotions, both transient and enduring, shape physicians' professional behaviors, with burnout serving as a critical moderating factor. High burnout levels exacerbate the negative impact of adverse moods on patient interactions and decision-

making. Interventions targeting emotional well-being and burnout in medical staff could improve communication, reduce errors, and enhance care quality. Further research should explore strategies to mitigate these effects in clinical settings.

Keywords: Physician Emotions, Burnout in Healthcare, Clinical Decision-Making.

1. Introduction

The interplay between emotions and physician behavior during patient interactions is a critical yet underexplored domain in medical research. While clinical decisions are often regarded as the result of rational and evidence-based processes, emotional states—both fleeting and enduring—can influence these interactions in profound ways. Affects encompass temporary mood states such as anxiety, as well as more persistent conditions like depression and burnout. Despite being perceived as subjective phenomena, emotions inevitably intertwine with physicians' professional conduct. This study seeks to delve into how medical staff perceive the role of emotions in shaping their behavior during patient encounters, with a specific focus on the influence of burnout as a moderating factor in these dynamics (1).

Current research into the impact of emotional states on physician behavior is limited, leaving significant gaps in understanding how mood and affect might alter medical practice. For example, a recent study demonstrated that fatigue negatively influenced physicians' ability to effectively communicate when delivering bad news to simulated patients (2). Similarly, stress, often linked to heavy workloads, has been found to correlate with self-reported medical errors and suboptimal care (3). Earlier investigations also highlighted that stress from uncertainty could increase referral rates (5), while general feelings of stress from factors such as overwork or exhaustion led to a reduction in clinical care standards, sometimes resulting in serious mistakes (4). These findings suggest a potential, yet underexamined, relationship between transient emotional states and physician behavior.

While studies on transient moods remain relatively scarce, research on more lasting emotional states, such as burnout, has garnered increasing attention. Burnout, defined as a work-related response to chronic stress, involves emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment (6). It has been associated with various negative outcomes, including poor communication with patients (2) and reduced quality of care (10). Interestingly, however, some studies present mixed findings. For instance, while emotionally exhausted physicians often struggle with communication, those experiencing certain dimensions of burnout—such as emotional exhaustion and depersonalization—may spend more time in patient-centered discussions, particularly on mental health topics (7).

The nuanced relationship between burnout and physician behavior becomes more apparent when examining its distinct components. For example, physicians with high scores in depersonalization or emotional exhaustion may spend additional time addressing patients' mental health concerns, whereas those with low personal accomplishment scores often demonstrate less affective communication and reduced patient-centeredness (7). Such variability underscores the complexity of burnout and highlights the need for a more granular understanding of its effects on physician behavior.

Burnout's implications extend beyond patient interaction styles to encompass broader aspects of medical practice. Multiple studies have linked burnout to an increased likelihood of self-reported medical errors (3, 8, 9) and suboptimal care practices (3, 10). Physicians experiencing burnout may also report diminished empathy toward patients (11), which can further compromise the quality of care provided. The potential for burnout to undermine key elements

of medical professionalism, such as effective communication and clinical decision-making, highlights the urgency of addressing this pervasive issue within healthcare systems.

One particularly striking finding is the relationship between burnout and prescribing behavior. Research suggests that burnout can distort clinical decision-making, resulting in inefficiencies such as increased pharmaceutical expenditures. For instance, physicians experiencing higher levels of emotional exhaustion have been shown to incur greater prescription costs per patient compared to their less burned-out counterparts (12). This phenomenon illustrates how burnout can extend its influence beyond immediate patient interactions to affect broader healthcare resource management.

Despite the growing body of research on burnout, there remains a dearth of studies specifically examining how physicians perceive the role of emotions in shaping their behavior during medical encounters. While existing literature provides valuable insights into the objective consequences of emotional states, subjective perceptions remain underexplored. Understanding how medical staff interpret the effects of mood and burnout on their own behavior could reveal crucial opportunities for intervention and support within clinical settings.

This study aims to address these gaps by exploring how medical staff members perceive the impact of their emotional states—both transient and enduring—on their behavior during interactions with patients. Additionally, it examines whether burnout serves as a moderating factor in these mood-behavior relationships. By focusing on subjective experiences and perceptions, this research provides a novel perspective on the interplay between emotions and professional conduct, with implications for improving physician well-being, patient care, and overall healthcare quality.

2. Methods

Participants and Procedures

The study included 150 male and female physicians from a major healthcare organization. Participants consisted of family physicians, pediatricians, and internists working in both community clinics and hospitals. Physicians in the organization are regularly provided with dedicated time for professional development activities, such as attending continuing medical education (CME) sessions, workshops, and conferences.

A total of 200 physicians attending professional seminars were invited to participate in the research. Two physician co-authors distributed the research questionnaires to interested participants during seminar breaks. Participation was voluntary, and all responses were collected anonymously. Completed questionnaires were handed back to the researchers immediately after completion.

Study Variables

Independent Variables

The study investigated two independent variables: transient mood states and burnout levels. The mood states were categorized into four types: positive mood, negative mood, fatigue, and nervousness. Burnout was classified into two levels: high and low.

Dependent Variables

The study measured five dependent variables: the self-reported frequency of engaging in behaviors related to patient care. These behaviors included:

1. Communicating with patients.
2. Prescribing medications.
3. Ordering laboratory tests.
4. Requesting diagnostic imaging (e.g., X-rays, ultrasounds, CT, MRI).
5. Referring patients to specialists.

Measures

Demographic Information

The questionnaire collected details on age, gender, marital status, managerial responsibilities (yes/no), medical specialty, primary workplace (community clinic/hospital), and weekly working hours.

Burnout Assessment

Burnout was measured using a validated scale developed by Kushnir and Melamed (13), widely used in studies on physician burnout (14, 15, 16). The scale conceptualizes burnout as comprising emotional exhaustion, physical fatigue, and cognitive weariness (6). It consists of 14 items split into two subscales:

- Emotional and Physical Exhaustion: Eight items assessed physical fatigue and emotional depletion. Example items include: "I feel physically drained" and "I am emotionally overwhelmed."
- Cognitive Weariness: Six items measured mental fatigue and reduced clarity. Examples include: "I feel mentally foggy" and "I am increasingly disorganized."

Each item was rated on a seven-point Likert scale, ranging from 1 ("almost never") to 7 ("almost always"). The total burnout score was calculated as the average of all 14 items. Cronbach's alpha for this scale in the current study was 0.89.

Physician Behaviors

Self-reported engagement in five behaviors was assessed:

1. Talking with patients.
2. Prescribing medications.
3. Ordering lab tests.
4. Requesting diagnostic imaging.
5. Referring patients to specialists.

Participants rated how often they engaged in each behavior under four different mood states (positive mood, negative mood, fatigue, and nervousness). Each behavior was evaluated using a seven-point scale ranging from 1 ("50% less than usual") to 7 ("50% more than usual"). For example, participants answered: "On a day when you feel [specific mood state], how often do you [specific behavior]?"

Data Analysis

The study employed two-way repeated measures analyses of variance (ANOVAs) to assess the effects of mood and burnout on the five behavior categories. The two factors analyzed were:

1. Mood State: Four levels (positive mood, negative mood, fatigue, and nervousness).
2. Burnout Level: Two levels (high and low), determined by median-split scores.

For each behavior, ANOVAs examined interactions between mood and burnout. Contrast analyses compared the positive mood state to the three negative states (negative mood, fatigue, and nervousness).

Demographic variables were not significantly associated with the study outcomes and were therefore excluded from the main analysis. The focus was on mood and burnout effects for the reported results.

3. Results

Demographic Characteristics

Table 1 summarizes the demographic characteristics of the study sample. Out of 200 physicians invited, 150 physicians responded to the questionnaire, yielding a response rate of 75%. The sample included more males than females and a greater proportion of pediatricians compared to family physicians. A minority (12%) identified as "other," including internists involved in primary care. Most participants (70%) worked in community clinics, and 30% held managerial positions. Only a small percentage worked part-time.

Table 1. Demographic Characteristics of the Study Sample (N = 150)

Variable	n (%)
Gender	
Male	85 (56.7)
Female	65 (43.3)
Medical Specialization	
Family	55 (36.7)
Pediatrics	75 (50.0)
Other	20 (13.3)
Managerial Status	
Director	45 (30.0)
Non-director	105 (70.0)
Primary Workplace	
Community Clinic	105 (70.0)
Hospital	35 (23.3)
Both	10 (6.7)
Work Hours	
Full-time plus	40 (26.7)
Full-time	95 (63.3)
Part-time	15 (10.0)

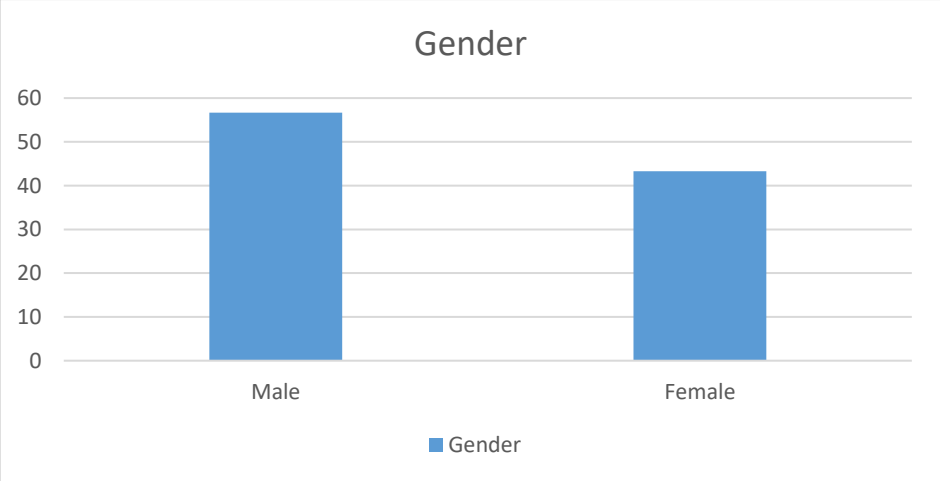

Fig 1: Gender

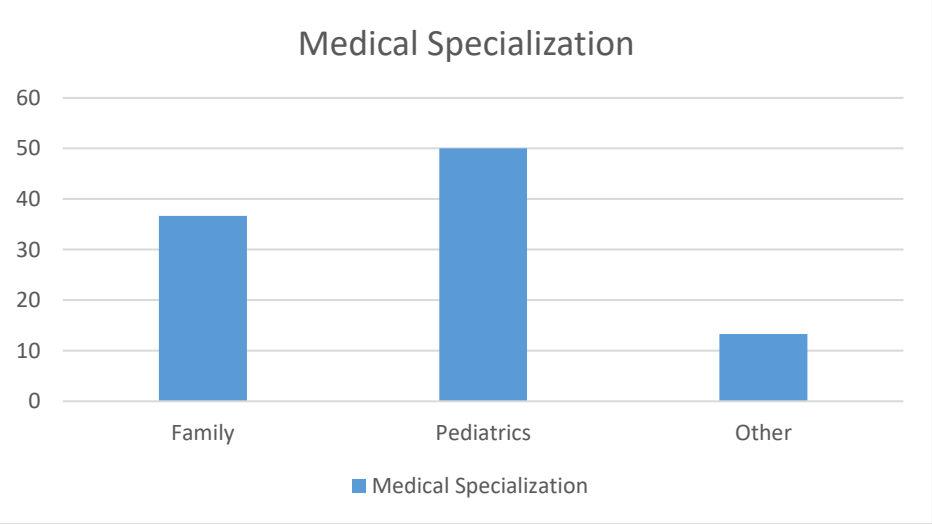

Fig 2: Medical Specialization

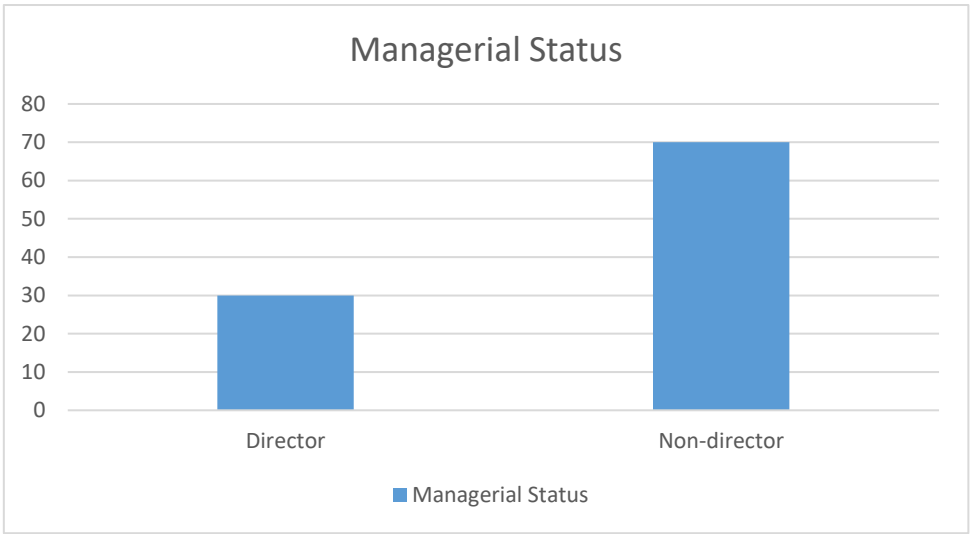

Fig 3: Managerial Status

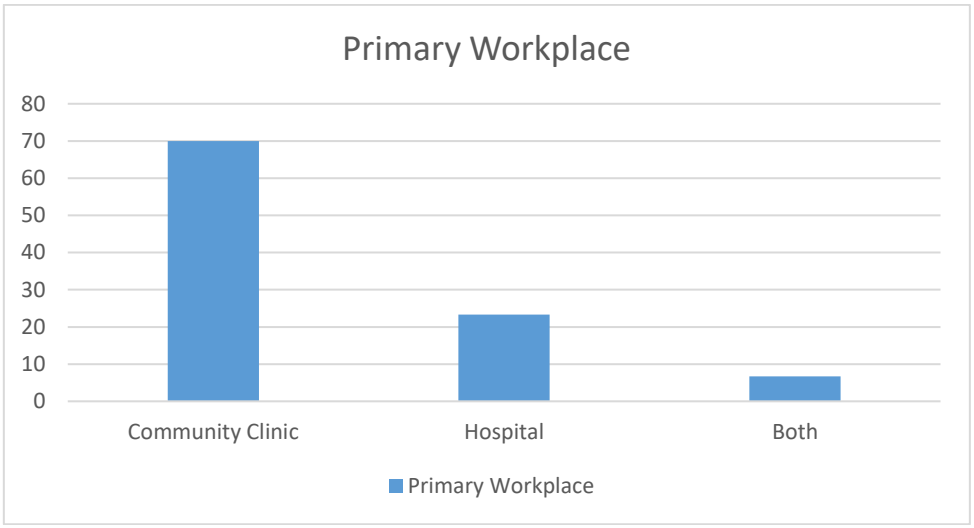

Fig 4: Primary Workplace

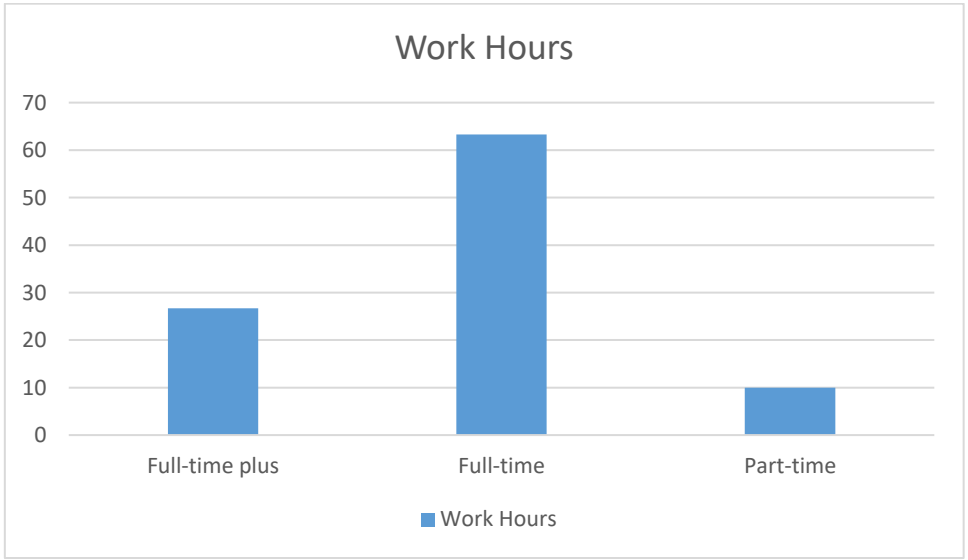

Fig 5: Work Hours

Mood States and Physician Behaviors

Table 2 presents the results of five separate 4 × 2 ANOVAs conducted on the five behavior categories, showing the mean perceived rates of behavior across four mood states and two burnout levels. Significant effects of mood were observed for all five behaviors ($P < 0.001$ for all mood effects). Burnout significantly influenced three referral behaviors (laboratory tests: $P = 0.04$, diagnostic tests: $P = 0.003$, consultations: $P = 0.02$). Interaction effects between mood and burnout were significant for all behaviors except prescribing medications.

Table 2. Perceived Rates of Physician Behaviors Under Four Mood States and Two Burnout Levels: Means, SDs, and P-Values

Behavior	BO Level	Good Mood	Bad Mood	Tired	Nervous	P Mood	P BO	P Interaction
Talk	High	5.75 ± 1.05	3.10 ± 1.25	3.15 ± 1.30	3.05 ± 1.28	<0.001	n.s.	0.01
	Low	5.50 ± 1.20	3.50 ± 1.10	3.45 ± 1.15	3.30 ± 1.20			
Prescribe	High	3.85 ± 1.10	4.55 ± 0.95	4.40 ± 0.90	4.50 ± 0.90	<0.001	n.s.	n.s.
	Low	3.95 ± 1.05	4.40 ± 0.90	4.35 ± 0.85	4.45 ± 0.88			
Lab Tests	High	3.60 ± 0.95	4.70 ± 0.85	4.60 ± 0.80	4.80 ± 0.85	<0.001	0.04	0.03
	Low	3.75 ± 1.00	4.50 ± 0.90	4.40 ± 0.85	4.50 ± 0.95			
Diag Tests	High	3.55 ± 1.00	4.65 ± 0.75	4.55 ± 0.80	4.70 ± 0.80	<0.001	0.003	0.03
	Low	3.70 ± 1.10	4.40 ± 0.85	4.35 ± 0.90	4.40 ± 0.90			
Consultations	High	3.50 ± 1.10	4.75 ± 0.90	4.70 ± 0.85	4.65 ± 0.80	<0.001	0.02	0.02
	Low	3.60 ± 1.15	4.40 ± 0.85	4.30 ± 0.90	4.35 ± 0.95			

Key Findings

1. Mood Effects: Positive mood days were associated with significantly higher perceived rates of talking with patients, compared to negative mood days ($P < 0.001$). In contrast, prescribing and referral behaviors were reported at lower rates on positive mood days than on negative mood days.
2. Burnout Effects: Physicians with higher burnout reported significantly higher perceived rates of referral behaviors for laboratory tests, diagnostic tests, and consultations compared to those with lower burnout levels.
3. Interaction Effects: The interaction of mood and burnout had a significant influence on all behaviors except prescribing. The effects of mood on perceived behavior rates were more pronounced among physicians with high burnout compared to those with low burnout.

4. Discussion

There is a wealth of literature addressing physician burnout, but the majority focuses on identifying its causes rather than examining the resulting consequences on clinical practice (17). Furthermore, research exploring how physicians' moods influence their behavior is relatively scarce. The findings of this study contribute to the limited body of knowledge by highlighting how moods and burnout impact physician-reported behaviors.

Impact of Moods

Our results indicate that positive and negative moods are perceived to have contrasting effects on various aspects of physician behavior. Two key trends emerged from the findings. First,

positive and negative moods were reported to influence behaviors in opposite directions. Second, physicians perceived that communication with patients was affected differently by moods compared to other behaviors.

For instance, physicians reported that they engaged more in patient communication during positive mood states, while other behaviors, such as prescribing medications or making referrals for tests and consultations, were less frequent. In contrast, during negative mood states, physicians perceived a decrease in communication but an increase in prescribing and referrals. These findings suggest that time spent on communication during positive mood states may reduce reliance on prescribing or referrals, and the reverse occurs on negative mood days.

Impact of Burnout

While prescribing behaviors did not appear to be directly associated with burnout, referral behaviors showed a notable connection. Physicians with higher burnout levels reported increased engagement in all forms of referrals. Additionally, the interaction between mood and burnout revealed that burnout levels intensified the effects of mood on behaviors. Physicians with high burnout reported more pronounced differences in their behaviors between positive and negative mood states compared to their lower-burnout counterparts.

Interestingly, burnout influenced communication behaviors in unexpected ways. Physicians with high burnout reported more frequent patient communication on positive mood days than those with lower burnout, possibly reflecting an amplified sense of mood improvement. Conversely, on negative mood days, high-burnout physicians communicated less than their lower-burnout peers, aligning with the expectation that depleted emotional resources hinder interaction.

These findings align partially with earlier studies. For example, research on primary care physicians with high burnout levels indicated they spent more time discussing psychosocial issues with patients suffering from mental health concerns, which could paradoxically enhance care quality in specific contexts (7). While our research approach differed from these studies, the outcomes underscore the complexity of the relationship between mood, burnout, and physician behavior, warranting further investigation.

Comparing Moods and Burnout Effects

The effects of daily moods on perceived behaviors were more significant than those of burnout. This discrepancy could be attributed to differences in awareness: while burnout represents a long-term, underlying state, daily moods are more immediate and noticeable. Future studies could explore these distinctions further by comparing the influence of transient moods with the persistent effects of burnout.

Implications and Future Research

The potential consequences of these findings on healthcare quality and cost are notable. If negative moods are associated with increased prescribing and referrals, this may lead to unnecessary interventions, which could compromise care quality and increase healthcare expenses (18, 19). On the other hand, positive moods appear to support more patient-centered communication, which has been associated with better outcomes and reduced healthcare costs (20, 21, 22).

Further research should delve into the reasons behind increased communication during positive mood states and reduced reliance on unnecessary referrals. Employing observational methods or experimental designs that induce specific mood states could provide deeper insights. Additionally, exploring how patient-centered communication varies with mood states would help clarify these relationships.

5. Limitations

This study has several limitations. First, the reliance on self-reported data may introduce recall bias or social desirability effects. Future research should integrate objective behavioral

measures to mitigate these biases. Second, the cross-sectional design limits our ability to draw causal inferences. Longitudinal studies that track mood and burnout over time would provide a more comprehensive understanding of their effects on behavior.
Moreover, this study's general focus on behaviors without linking them to specific medical conditions limits its scope. Future research should consider specific clinical scenarios, particularly those requiring significant emotional or cognitive effort. Lastly, the sample was limited to primary care physicians. Replicating this study across diverse specialties and healthcare settings would enhance its generalizability.

6. Conclusion

Our findings suggest that physician behaviors are influenced by both transient mood states and more enduring factors like burnout. Moreover, burnout appears to amplify the effects of moods, making the combined impact of these factors potentially detrimental to healthcare quality and system efficiency. Further studies are needed to explore these dynamics comprehensively, as they could have significant implications for healthcare systems and patient outcomes.

References

1. Croskerry P, Abbass A, Wu AW. How doctors feel: affective issues in patients' safety. Lancet. 2008;372:1205–1206.
2. Brown R, Dunn S, Byrnes K, et al. Doctors' stress responses and poor communication performance in simulated bad-news consultations. Acad Med. 2009;84:1595–1602.
3. Williams ES, Manwell LB, Konrad TR, Linzer M. The relationship of organizational culture, stress, satisfaction, and burnout with physician-reported error and suboptimal patient care: results from the MEMO study. Health Care Manage Rev. 2007;32:203–212.
4. Firth-Cozens J, Greenhalgh J. Doctors' perceptions of the links between stress and lowered clinical care. Soc Sci Med. 1997;44:1017–1022.
5. Bachman KH, Freeborn DK. HMO physicians' use of referrals. Soc Sci Med. 1999;48:547–557.
6. Shirom A, Nirel N, Vinokur AD. Overload, autonomy, and burnout as predictors of physician quality of care. J Occup Health Psychol. 2006;11:328–342.
7. Zantinge EM, Verhaak PFM, de Bakker DH, van der Meer K, Benzing JM. Does burnout among doctors affect their involvement in patients' mental health problems? A study of videotaped consultations. BMC Fam Pract. 2009;10:60.
8. West CP, Huschka MM, Novotny PJ, et al. Association of perceived medical errors with resident distress and empathy. JAMA. 2006;296:1071–1078.
9. Fahrenkopf AM, Sectish TC, Barger LK, et al. Rates of medication errors among depressed and burnt-out residents: prospective cohort study. BMJ. 2008;336:488–491.
10. Shanafelt TD, Bradley KA, Wipf JE, Back AL. Burnout and self-reported patient care in an internal medicine residency program. Ann Intern Med. 2002;136:358–367.
11. Thomas MR, Dyrbye LN, Huntington JL, et al. How do distress and well-being relate to medical student empathy? A multicenter study. J Gen Intern Med. 2007;22:177–183.
12. Cebria J, Sobreques J, Rodriguez C, Segura J. Influence of burnout on pharmaceutical expenditure among primary care physicians. Gac Sanit. 2003;17:483–489. (Spanish)
13. Kushnir T, Melamed S. The Gulf War and its impact on burnout and well-being of working civilians. Psychol Med. 1992;22:987–995.
14. Kushnir T, Kitai E, Cohen A. Continuing medical education and primary physicians' job stress, burnout, and dissatisfaction. Med Educ. 2000;34:430–436.
15. Kushnir T, Levhar C, Cohen A. Are burnout levels increasing? The experience of Israeli primary care physicians. Isr Med Assoc J. 2004;6:451–455.

16. Kushnir T, Cohen A. Positive and negative work characteristics associated with burnout among primary care pediatricians. Pediatr Int. 2008;50:546–551.
17. Halbesleben JRB, Rathert C. Linking physician burnout and patient outcomes: exploring the dyadic relationship between physicians and patients. Health Care Manage Rev. 2008;33:29–39.
18. Hall JA, Rotter DL, Rand CS. Communication of affect between patient and physician. J Health Soc Behav. 1981;22:18–30.
19. Carter WB, Inui TS, Kukull WA, Haigh VH. Outcome-based doctor-patient interaction analysis. II: Identifying effective provider and patient behavior. Med Care. 1982;20:550–566.
20. Epstein RM, Franks P, Shields CG, et al. Patient-centered communication and diagnostic testing. Ann Fam Med. 2005;3:415–421.
21. Bertakis KD, Azari R, Callahan EI, Helms AI, Robbins IA. The impact of physician practice style on medical charges. J Fam Pract. 1999;48:31–36.
22. Stewart M, Brown IB, Donner A, et al. The impact of patient-centered care on outcomes. J Fam Pract. 2000;49:796–804.