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Exploring the Impact of 'Monday Blues' on Burnout Levels Among Orthopedic Residents: A Study at Tertiary Care Medical College

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ABSTRACT
This study investigates the phenomenon of "Monday blues" among orthopedic residents at SAIMS Medical College, Indore and its impact on their well-being. Drawing from existing literature on circaseptum mood cycles and the influence of cultural expectations on mood, the study aims to manipulate participants' expectations regarding Monday blues and assess their mood fluctuations prospectively and retrospectively. A survey was conducted among 48 orthopedic residents, collecting data on demographic variables and burnout levels using the Copenhagen Burnout Inventory (CBI). Participants were divided into two groups: one informed about the existence of Monday blues (pro-blues group) and the other told it was a myth (anti-blues group). Data analysis included descriptive statistics and one-way ANOVA. Study shows that the majority of participants experienced burnout, with personal burnout being the most prevalent. There was a significant association between year of residency and burnout scores, with first-year residents reporting higher levels of burnout. Additionally, manipulation of participants' expectations regarding Monday blues influenced their mood fluctuations, indicating the role of cultural stereotypes in shaping perceptions of mood. The findings highlight the need for interventions to address burnout among orthopedic residents, including stress management strategies and improvements in working conditions. Incorporating training on burnout recognition and management into orientation programs for residents is recommended. Further research is warranted to explore the broader implications of cultural expectations on mood and well-being in healthcare settings.

INTRODUCTION

Introduction- It is commonly believed in industrialized cultures that Monday is the most unfavorable day of the week in terms of mood and well-being, commonly referred to as the "Monday blues." Several research studies have corroborated this notion, revealing an increased incidence of suicide attempts and temporary work absences, specifically on Mondays compared to the rest of the week.

However, prospective studies examining the day-to-day variations in self-assessed mood indicate a more intricate scenario. A circaseptum mood cycle has been observed in several studies, including those conducted by Farber, Larsen and Kasimatis, Mansfield, Hood and Henderson, McFarlane, Martin and Williams, Rossi and Rossi and Stone, Hedges, Neale and Satin. Larsen and Kasimatis discovered a prominent occurrence at precisely 7 days in prospective daily mood reports through spectral analysis. Afterwards, they overlaid a 7-day sinusoidal pattern onto their data and discovered a strong correlation, indicating that a weekly cycle accounted for 40% of the variation in daily mood. Their findings provide robust evidence for the presence of a weekly mood cycle, wherein depression levels are significantly lower on Friday and Saturday and notably higher on Monday and Tuesday.

Rossi and Rossi conducted a study that yielded similar results, indicating a recurring pattern of happiness throughout the week. Happiness levels were found to be highest on Friday for men and on Saturday for women, while reaching a low point on Monday for women and Tuesday for men. Contrary to this, depression levels were found to be the lowest during the weekend in other research studies. There was minimal or no noticeable variation in depression levels across the other weekdays. These studies indicate that the feeling of sadness or low mood commonly associated with Mondays is not necessarily caused by Mondays themselves, but rather by the contrast in mood between the typical workweek and the weekend.

The current understanding of how a social cycle, such as the day of the week, can affect mood is not yet clear. Circaseptum rhythms have been observed in certain physiological processes. Research conducted by Larsen and Kasimatis in 1990 has demonstrated that there is a weekly fluctuation in levels of electrolytes, immune system responses to disease, body temperature and red-blood-cell count. These rhythms are believed to indicate biological adjustment to environmental stress, as they are observed in the recovery process of patients undergoing surgery or suffering from severe illness. These physiological changes can be linked to mood changes either through central pathways, such as neurotransmitter activity, or through peripheral pathways, such as glucose metabolism. In the end, social cognition processes are expected to play a role in connecting the cues that determine the socially constructed weekly cycle with the corresponding patterns in biological processes and mood. The prevalence of the belief in the Monday blues indicates that personal expectations may play a role in this phenomenon.

The impact of subjective expectations on our perception of other individuals, known as the self-fulfilling prophecy effect, has been extensively demonstrated in various studies. Expectancies are postulated to influence the actions of individuals in a manner that prompts the anticipated behaviors from the recipient, thus making them influential interpersonal processes. Several studies have indicated that expectations can also influence one's self-perception of both physical and emotional conditions. As an illustration, Anderson and Pennebaker, guided participants in an experiment to anticipate feeling either a slightly painful or enjoyable sensation when touching a neutral stimulus (a vibrating emery board). Individuals who anticipated pain tended to characterize the experience as "stinging" or "burning," whereas the group with expectations of pleasure were more inclined to describe the experience as pleasantly tingling. Similarly, the seminal research conducted by Schachter and Singer and other scholars such as Dutton and Aron have indicated that both expectations and situational cues contribute to the understanding and perception of emotional states.

The study has investigated the influence of expectations on mood fluctuations during the menstrual cycle. Some researchers have suggested that women might perceive uncertain emotional states that occur in the days leading up to menstruation as negative due to mood expectations influenced by stereotypical beliefs about premenstrual tension. This hypothesis has been extensively employed to elucidate the disparities observed in the retrospective and prospective self-reports of mood states throughout the menstrual cycle. Retrospective accounts tend to report higher levels of premenstrual depression and irritability compared to prospective ratings of the same period. This has been observed in studies such as Ablanalp, Donnelly and Rose, and Parlee. However, it is important to consider methodological issues and variations in experiences between menstrual cycles, as these factors contribute to the discrepancy. Richardson has highlighted this point. Additional support for the impact of expectations on premenstrual mood reports can be found in studies that have manipulated women's beliefs regarding their current menstrual cycle phase or the influence of the menstrual cycle on mood. As an illustration, women who were informed

that happiness and euphoria are typical experiences before menstruation rated themselves as less depressed and irritable compared to women in the control group.

Studies examining mood fluctuations throughout the week have identified disparities between retrospective and prospective reports. Specifically, Mondays have consistently been retrospectively rated as the most unfavorable day of the week, whereas this negative perception is not anticipated in prospective evaluations. In a study conducted by Stone *et al*. 58 married couples were surveyed daily for 90 consecutive days to report their mood. Afterward, they were asked to identify the specific day of the week that they considered to be the worst. The results from the simultaneous data indicated that while mood was higher on weekends, there was no significant difference between Monday, Tuesday, Wednesday, or Thursday. However, in the retrospective data, 65% of the participants selected Monday as their least favorable day in terms of mood. Consequently, the authors propose that retrospective reports may be subject to a comparison effect, wherein Monday is perceived as unfavorable when contrasted with the weekend. Expectancy effects may potentially impact both retrospective and prospective reports, with retrospective accounts being more susceptible to bias due to their reliance on recall. This initial evidence indicates a possible influence of expectations on both circaseptum and menstrual mood patterns. As of now, there have been no studies conducted that have explored this possibility through the manipulation of expectations regarding the Monday blues[1-5].

The current study seeks to examine the influence of culturally ingrained stereotypes on the reporting of daily mood fluctuations by directly manipulating participants' expectations regarding the phenomenon known as the "Monday blues." The primary hypothesis posits that individuals who are informed about the well-established nature of the Monday blues (the pro-blues group) will exhibit notably lower mood levels on Mondays compared to a group informed that the Monday blues are a fallacy (the anti-blues group).

MATERIAL AND METHODS

A survey was conducted among orthopaedic resident doctors at SAIMS PGI in the city of Indore. The doctors were notified that their involvement in the survey was entirely optional, only essential demographic information would be gathered, the collected data would be kept confidential and in the event of publication, no individual respondent would be identified. All 48 doctors who were given the questionnaire responded, resulting in a response rate of 100%. The instrument was created as a uniform evaluation tool for measuring Monday blues. Information regarding the gender, age and educational attainment of the doctors was also gathered. Data analysis refers to the process of inspecting, cleaning, transforming and modelling data in order to discover useful information, draw conclusions and support decision-making. The data was analysed using the statistical software Analyse. One-way ANOVA was applied to the mean values. The mean scores for domains of the CBI scale were distributed according to the year of residency among 28 pro-blues on Mondays. The statistical significance was determined at a p-value of 0.05.

RESULTS

The questionnaire based survey was distributed to all resident employed in the orthopedic departments of the institute. Out of these, a total of 48 residents provided responses to the survey. All 48 residents were males, accounting for 100% of the total population. The mean age of the participants was 28 years. The study participants were distributed among different years of residency as follows: out of 48 residents, 25% (12) were in their first year, 25% (12) were in their second year, 25% (12) were in their third year and the remaining 25% (12) were residents preparing for an exam. Information regarding the number of hours worked per week was also collected. Out of the total residents, 48.8% (23) work for 41-60 hours per week, 34.8% (17) work for 61-80 hours per week, 6.3% (3) work for less than 40 hours per week and 10.1% (5) work for more than 80 hours per week.

Out of the total number of residents, 57.59% (28) have less than 2 years of experience in a government hospital. Additionally, 36.08% (17) of residents have 2-5 years of experience, while 6.33% (3) have more than 5 years of experience in a government hospital (Table 1).

Table 2 illustrates that approximately 39.24% (19 individuals) exhibited scores indicative of experiencing

Table 1: Sociodemographic variables of study participants

Sociodemographic variables	Number (N = 48)	Percentage
Gender		
Male	48	100
Year of residency		
1st	12	25
2nd	12	25
3rd	12	25
Exam going	12	25
Working hours in a week (self reported)		
<41	3	6.3
41-60	23	48.8
61-80	10	20.8
>80	12	25
Years of experience working in hospital		
<2	28	57.59
2-5	17	36.08
>5	3	6.33

Table 2: Association of problue and antiblue with sociodemographic variables of study participants

Socio-demographic variables	Distribution of Monday blues		
	Pro-blue, N (%)	Anti-blue, N (%)	Total N (%)
Total	28 (58.33)	20 (41.67)	48 (100)
1st	9 (75)	3 (25)	12 (100)
2nd	8 (67.67)	4 (33.33)	12 (100)
3rd	7 (58.33)	5 (41.67)	12 (100)
Exam going	4 (33.33)	8 (67.67)	12 (100)

Table 3: Distribution of mean scores for domains of CBI scale according to the year of residency among pro-blues (n = 28) on Mondays

Year of residency	Burnout		
	Personal	Work related	Patient related
1st	50.07± 10.720	47.37±10.417	44.49±12.377
2nd	49.02± 17.555	43.04±14.253	38.62±19.744
3rd	43.34±14.982	39.80±13.588	34.41±18.941
Exam going	45.34±12.982	37.80±12.588	31.41±10.941
p-value for ANOVA test	0.055	0.012	0.013

Mean scores for domains of CBI scale among Pro-Blues on Mondays, (n = 28), (Mean±SD)

complete burnout. A total of 61.39% (29) of the residents exhibited personal burnout, while 43.03% (21) experienced burnout related to their work and 44.93% (22) reported burnout related to their patients. Approximately 24.1% of the residents encountered instances of verbal or physical abuse perpetrated by patients or their family members.

The data presented in Table 3 displays the average scores for each burnout domain, categorized by the year of residency. Our study revealed that the levels of personal burnout, work-related burnout and personal burnout are significantly higher in the first year of residency compared to the second and third years of residency. The disparity is statistically significant for work-related burnout scores ($p = 0.012$) and patient-related burnout scores ($p = 0.013$). The difference in personal burnout scores is not statistically significant ($p = 0.055$).

DISCUSSION

The questionnaire based survey was distributed to all resident employed in the orthopedic departments of the institute. Out of these, a total of 48 residents provided responses to the survey. All 48 residents were males, accounting for 100% of the total population. The mean age of the participants was 28 years. The study participants were distributed among different years of residency as follows: out of 48 residents, 25% (12) were in their first year, 25% (12) were in their second year, 25% (12) were in their third year and the remaining 25% (12) were residents preparing for an exam. Information regarding the number of hours worked per week was also collected. Out of the total residents, 48.8% (23) work for 41-60 hours per week, 34.8% (17) work for 61-80 hours per week, 6.3% (3) work for less than 40 hours per week and 10.1% (5) work for more than 80 hours per week.

Out of the total number of residents, 57.59% (28) have less than 2 years of experience in a government hospital. Additionally, 36.08% (17) of residents have 2-5 years of experience, while 6.33% (3) have more than 5 years of experience in a government hospital.

These results shed some light on the role of cultural stereotypes in people's perceptions of mood on Mondays. It has been suggested that the subjective experience of a "bad Monday" is primarily a result of the expectations imposed by the cultural myth of a blue-Monday phenomenon. These results lend some support to this theory. One group of participants, led to believe that everyone experiences bad moods on Monday, did indeed experience their lowest positive affect and highest negative affect on Monday. Another group, having been told that the Monday blues are a myth, reported their lowest positive affect on Wednesday and highest negative affect on Thursday. Manipulation of these groups' expectations is associated with a differential interpretation of their moods, suggesting that what we believe to be the case can have some influence on how we feel. Of course, it could be argued that the manipulation simply altered participants' reports of mood, rather than affecting how they actually felt throughout the study. The issue of the reliability of self-reports of mood and the extent to which they reflect our true feelings is a complex one and warrants further investigation. However, the absence of a manipulation effect in retrospective reports of mood suggests that these findings do not simply reflect a social desirability bias.

This study supported previous research involving self-reports of mood in revealing a discrepancy between concurrent and retrospective reports. In this study, all three groups recalled Monday as being the worst day of the week and Saturday as being the best, irrespective of manipulation or results obtained from concurrent data. Even though the anti-blues group showed little or no evidence of a blue-Monday phenomenon prospectively, it seems that the belief in such a phenomenon is so strong that retrospective reports of mood throughout the week are virtually assured of finding Monday as the worst day.

The doctors' emotional and physical health is negatively impacted by burnout syndrome. Furthermore, it hampers their capacity to provide effective and empathetic care to patients. Multiple scales, including the Maslach Burnout Inventory (MBI), Burnout Clinical Subtype Questionnaire 12 and Oldenburg Burnout Inventory, have been employed to evaluate burnout in diverse professional populations. we employed the CBI (Copenhagen Burnout Inventory) to assess burnout across various dimensions. The questionnaire is self-explanatory, straightforward, thorough and includes self-assessment. The outcomes of our study demonstrated exceptional performance in all three areas of CBI. 39.24% (62) of the study participants obtained mean scores on the CBI that

indicate burnout. A study conducted by Divatia *et al*.[4] in 2014 among ICU doctors in India, using the MBI scale, yielded comparable findings. Approximately 54% of the respondents obtained a rating of "moderate to high" on the emotional exhaustion scale, while 40% received a rating of "moderate to high" on the depersonalization scale.

Personal burnout exhibits the highest prevalence among the three dimensions of burnout. This indicates that the majority of the inhabitants were fatigued and experiencing either physical or emotional exhaustion. Langade *et al*.[5] observed comparable findings among Indian physicians. Within this study, 65.98% of individuals exhibited elevated scores on the depersonalization scale, while 45.02% of participants demonstrated high scores on the emotional exhaustion scale as measured by the Maslach burnout inventory[1]. The results were also congruent with the studies conducted on oncologists in the USA.23Our study revealed that female residents exhibited elevated levels of burnout compared to their male counterparts. This finding is also congruent with other investigations conducted in India and globally. This could be attributed to factors such as greater domestic expectations and responsibilities placed on females in society compared to their male counterparts[6-7].

According to the National Health Profile 2018, the doctor-to-patient ratio in India is approximately 1:11,082, which falls significantly short of the ideal ratio of 1:1000 recommended by the World Health Organization (WHO)[8]. Resident doctors employed in government hospitals face exceedingly long working hours and a heavy workload. Doctors employed in Indian government hospitals encounter additional challenges, including a lack of recognition, substandard living conditions, unhealthy dietary practices, absence of insurance and safeguards and instances of violence perpetrated by patients' family members. This renders them susceptible to lifestyle disorders such as cardiovascular diseases, hypertension, hyperlipidemia and fatigue, which in turn hinders their ability to engage in social activities with loved ones and increases the risk of burnout syndrome[9]. Burnout syndrome is linked to psychological disorders and somatic symptoms such as insomnia, irritability, chronic low mood and even suicidal tendencies. While acknowledging that a sample size of 158 is insufficient to accurately represent all resident doctors in government hospitals nationwide, it did offer valuable insights into the serious problem of physician burnout in the country.

CONCLUSION

Primarily, it is crucial to focus on recognizing the indicators of burnout syndrome and implementing strategies to address them across multiple levels. It is imperative to generate additional employment opportunities within public sector hospitals, while simultaneously augmenting the capacity for specialty training programs. Residents should have access to stress management strategies, such as meditation and psychological counseling. Ultimately, it is imperative that such training becomes an integral component of the orientation and recruitment procedures in government hospitals.

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