**Psychological Thought**
psyct.swu.bg | 2193-7281
South-West University "Neofit Rilski"

Research Article

# Predicting Stress in Police Professionals: The Role of Chronotype, Resilience, and General Health

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## Abstract

Globally, the profession of police is a highly stressful occupation. The present study focuses on investigating how chronotype, resilience, and general health predict stress among police professionals. Data was collected from 428 male and female police professionals through purposive sampling from different districts of Uttar Pradesh, India. Standardised tools were used to assess all variables. A cross-sectional correlational study was conducted where the results indicated moderate levels of stress, general health conditions, resilience, and appropriate sleep quality. Correlational analysis revealed that stress was positively correlated with good sleep, resilience, and poor general health, while it was negatively associated with depressed mood. Regression analysis identified general health and resilience as the strongest predictor of stress, with morningness having smaller predictive value of 42.4% variance in stress levels, highlighting the combined influence of psychological and circadian factors to explain stress among police professionals. This study highlights that despite average sleep quality and high resilience police professional experiences elevated stress due to the demanding nature of their work. Therefore, the findings point to the necessity of a comprehensive approach to stress reduction in policing integrating health promotion, psychological support, and organizational change.

*Keywords:* Chronotype; Resilience; General Health; Stress; Police Professionals.

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Psychological Thought, 2026, Vol. 19(1), 272-293, https://doi.org/10.37708/psyct.v19i1.1220
Received: 2025-12-16. Accepted: 2026-04-21. Published (VoR): 2026-05-31.
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The profession of police is a highly stressful occupation globally. This becomes more profound in a country with a population of over 1.45 billion. It has been stated in the official website of Uttar Pradesh Police that, particularly, in a state like Uttar Pradesh with India's largest police force (3.10 lakh personnel approx.), serving a population of over 200 million, larger than most countries. Frequent political and religious agitations, high rates of crime, economic constraints, violence, and tensions engulf the urban, semi-urban, and rural populations of the state. Police professionals here are often required to work extended hours, perform in irregular shifts, and handle public emergencies.

These occupational demands increase the likelihood of sleep and mood disturbances and overall health issues. Stress is a relationship between the person and the environment that is appraised as personally significant and as taxing or exceeding resources for coping (Lazarus & Folkman,1984). Stressors for police are majorly of two types (McCreary et al., 2006), operational such as working in shifts, risk of injury, critical incidents, shooting, violence, traumatic incidents, work-family conflict, or it can be organizational such as work overload, political pressures, conflict with supervisor or colleagues, excessive administrative task, leadership problems, lack of training, and the like (McCreary et al., 2006; Zhao et al., 2002;

Shane, 2010; Queiros et al., 2013; Griffin & Sun, 2018). These factors contribute to a work culture where chronic stress is not uncommon, with potential consequences for both psychological well-being and physical health. Nowadays, stress is considered as a psychosocial aspect of work (Aumayr-Pintar et al., 2018). When job stress is inadequate, chronic burnout occurs which is the prolonged response to chronic stressors characterized by exhaustion, cynicism and inefficacy (Aumayr-Pintar et al., 2018). In police officers, burnout causes exhaustion, depersonalization, anxiety, depression, and post-traumatic stress disorder (Queiros et al., 2020; Talavera-Velasco, 2018; Foley & Massey, 2021; Demou et al., 2020; McCarty et al., 2019). One area that has recently gained attention in occupational health research is chronotype, an individual's natural inclination towards morning or evening activity patterns, and its influence on how people respond to stress (Adan et al., 2012). Chronotype has been conceptualised as a relatively stable, trait-like circadian preference of sleep-wake timing, while acknowledging that it may have some situational variation due to environmental and occupational demands. However, although chronotype is traditionally defined as one's circadian preference along the morningness-eveningness continuum, the Sleep, Circadian Rhythms, and Mood (SCRAM) (Bryne et al., 2017) framework extends beyond to incorporate sleep quality and mood-related processes, which the current study also adopts. Chronotype plays a role in determining sleep quality, cognitive alertness, and emotional regulation, all of which are particularly relevant to police work, where irregular and overnight shifts are the norm (Vitale & Weydahl, 2017).

A study on 365 police officers established that those working in night shifts and also during afternoon reportedly faced more stressful events, including physical forms of danger and administrative pressure (Ma et al., 2015). Psychological disorders such as depression and anxiety are also associated with circadian misalignment mostly prevalent among police Professionals and shift workers (Chavez et al., 2025). The concept of chronotype has gained huge attention; however, its value is not much explored in law enforcement and other high-level professions. Resilience is the ability to adapt to adverse situations and a key factor in stress management especially in challenging occupations. Due to the difficult nature of the job, the officers persistently face traumatic events such as accidents, crime, violent attacks and other urgencies. Therefore, positive adaptation to traumatic situations helps people to tackle stressful jobs with ease. The duty of police officers is eventually stressful due to its unpredictable nature. Resilience often serves as a barrier against stress and lays a foundation for psychological stamina for a long term. For those going through programs on resilience training often show low

stress, depression and better circadian functions (McCraty & Atkinson, 2012), improved quality of sleep (Christopher et al., 2016), improved memory (Page et al., 2016), improved awareness of situations in job (Arnetz et al., 2009; Arnetz et al., 2013). General health is another important factor for understanding the vulnerability caused due to stress. Along with mental, socio-psychological and emotional well-being, general health encompasses proper physical conditions of the body, as well as cognitive, emotional, and psychological functioning (Magomedova & Fatima, 2025). Emotional discord related to poor health can hinder a person's ability to meet the demands of his/her occupations as it holds a relationship with burnout (Andela & Truchot, 2017; Kenworthy et al., 2014; Schaible & Gecas, 2010; Bakker & Heuven, 2006). Many studies revealed that police professionals having lack of good health face burnout and stress more often, hence predictive models should include their health status (Kukic et al., 2023). Research also proved the fact that police officers who are physically fit face less job injuries and can manage the policing work effectively (Lockie et al., 2020). An exploration of the interaction between resilience, circadian functioning and health among police officers in the West are ample (Christopher et al., 2016; Patterson et al., 2014; Kosmadopoulos et al., 2021), however native context related to the fact is scarce. Keeping an eye on the political and demographic conditions of such areas a study on the sleep pattern, mood regulation, stress and circadian preferences of police professionals is deemed necessary. Subsequently, the present study deals to examine the interaction between resilience, chronotype and general health in predicting the level of stress among police professionals of Uttar Pradesh. Incorporating an integrated approach, the study seeks to enlighten the development of inclusive wellness strategies for the reduction of stress and burnout and aiming for better public safety and their sustainable performance.

**Objective**

- To examine the relationship of chronotype dimensions (i.e. good sleep, morningness, and depressed mood), resilience, and general health with stress among police professionals.
- To explore the predictor of stress among police professionals.

**Hypotheses**

- There is significant relationship of chronotype dimensions (i.e. good sleep, morningness, and depressed mood), resilience, and general health with stress among police professionals.
- There is significant predictor of stress among police professionals.

# Method

The current study's methodology includes a brief description of the research participants together with criteria for selecting them and how the necessary size was calculated. The measurements used as well as their psychometric features were stated in the research design.

## Sample and Participants

The data was collected from 428 police professionals serving as Sub-Inspectors and Inspectors in various police station of Uttar Pradesh. Their ages ranged from 24 to 59 years, mean age being 37.20 years (*SD* = 10.01). To present the sample's age-wise distribution, the sample was grouped into four intervals. Around 36.2% were between 21 and 30 years of age, 30.4% percent fell in the age range of 31 to 40, 18.7% sample belonged to 41-to-50-year range, and 14.7% were between 51 and 60 years. Male police professionals (81.3%) formed most of the sample, with female being 18.7%. All 428 data were completed and were included in final analysis.

## Research Design

This study utilized a quantitative, cross-sectional, and correlational research design. This approach was deemed suitable as it aligns with the objective of examining chronotype, general health, and resilience as main predictors and stress as a criterion variable. The quantitative method was chosen because it allows for the objective assessment of variables and supports statistical evaluation of their relationships (Creswell & Creswell, 2018). The cross-sectional design was used to gather data at a single point of time. The cross-sectional design shall help in delivering practical results especially for demanding schedule organizations. For the exploration of the direction of relationships between dependent and independent variables a correlational design was added in advance, without manipulating experiments (Gay et al., 2012).

## Sample characteristics

Participants are in policing services from various districts of Uttar Pradesh, India. They work for 8-12 hours with rotational day and night shifts. Short notice changes are made in their schedules as per requirements and emergencies. The requirements comprise of uncertain

events, irregularities pertaining to circadian maladjustment, thereby resulting in imperfect psychological and physiological well-being (Boivin & Boudreau, 2014). Therefore, work conditions are important for better interpretation of findings in the study especially on mood, sleep and level of stress among police professionals.

## Inclusion Criteria

- Participants having the ability to read, write, and understand both English and Hindi.
- Actively serving in the police profession.
- Service experience of minimum five years.

### Exclusion Criteria:

- Police professionals who have been on long-term leave.
- Participants with severe medical or psychiatric conditions.

## Sample Size

Cochran's formula (1977) was utilized to determine the appropriate sample size for an infinite population. Based on a 95% confidence level (Z = 1.96), a 5% margin of error (e = 0.05), and an assumed maximum variability (p = 0.5), the sample size calculation is given as

$$n_0 = \frac{Z^2 \times p(1-p)}{e^2} = \frac{(1.96)^2 \times 0.5(1-0.5)}{(0.05)^2} = \frac{3.8416 \times 0.25}{0.0025} = 384.16$$

This is indicating a minimum requirement of approximately 384 participants. To enhance the robustness of the finding and account for potential non-responses or incomplete data, a total of 428 police professionals were purposively chosen for inclusion in the study.

### Sampling Technique

The data for the current study was collected through purposive sampling, a non-probability technique in which participants are deliberately selected based on predefined inclusion criteria aligned with the research objectives (Etikan, Musa, & Alkassim, 2016). Eligible participants were active-duty police professionals with a minimum of five years of continuous service and no ongoing medical leave. This approach was employed because it offers a practical means of accessing specific populations, such as police or military professionals, that are difficult to reach using random sampling methods.

## Measures

The following standardized tools were used to assess chronotype, resilience, general health, and stress of police professionals. The present research includes human respondents as this research did not undergo any form of clinical trials. It's purely based on survey and responses were collected through questionnaires.

**Brief Resilience Scale:** This scale measures the resilience factors and contains six items. Out of the six items, item 1, 3 and 5 are positively worded while, item 2, 4 and 6 are negatively worded. Scoring for the BRS is done by reverse coding of items 2, 4 and 6 and finding the average of the six items (Smith et al., 2008). The Cronbach's alpha is 0.80 to 0.91, which shows a good internal consistency. The computed Cronbach's alpha for the present sample of the BRS is 0.728.

**The Sleep Circadian Rhythms and Mood Questionnaire:** The questionnaire is designed to assess sleep patterns, circadian rhythms, and mood. It includes a total of 15 items with three dimensions where items 5, 10, and 12 are scored in reverse. The scores for Good Sleep, Morningness, and Depressed mood are determined by summing the scores of each item after applying reverse scoring where specified. The Cronbach's alpha for Morningness is .79, Good Sleep is .81, Depressed Mood is .77 (Byrne et. al., 2017). In the present sample, the SCRAM has internal consistency as shown by Cronbach's alpha to be 0.74 for Good Sleep, 0.67 for Morningness, and 0.69 for Depressed Mood.

**General Health Questionnaire:** The GHQ-12, which was designed by Goldberg (1972), was used for the measurement of general health. This questionnaire contains twelve items. Six items in this questionnaire are positively worded, and six are negatively worded. The scale has appropriate reliability 0.877 and validity 0.88 (Goldberg & Williams, 1988). The GHQ-12 has good internal consistency in the present sample with Cronbach's alpha of 0.773.

**Perceived Stress Scale:** The level of perceived stress was determined using the PSS Scale. The PSS Scale is a self-reporting instrument for measuring the degree of perceived stress over the past one month. It consists of 10 items that are answered on a 5 -point response scale, where 0 = never, 1= almost never, 2 = once in a while, 3 = often, 4 = very often. The Cronbach's alpha is 0.71 to 0.91, which shows a good internal consistency. (Cohen et al., 1983). In the present sample, there is good internal consistency with Cronbach's alpha of 0.788.

## Procedure

Data was collected over a period of approximately four months from March 2024 to July 2024, across nine districts of Uttar Pradesh, India, in selected police stations. The survey was handed to the respondents. Prior to this, those expressing willingness were politely asked to read the participant information sheet comprising the purpose of the study and ethical considerations for their anonymity, withdrawal, consent, etc., as well as contact information of researchers for further explanations. Then, they were asked to sign that they understood the goals and they wished to proceed with the process only after writing their personal code, including the three last letters of their first name and the three last digits of their telephone number. Next, the chronotype, resilience, general health, and stress questionnaire were administered to them for about 18 minutes. Then, they were thanked for participating in the study by debriefing about the background and literacy regarding the variables that were examined. More importantly, the proposed study, prior to collecting the data, had received a permission letter issued by the Commissioner of Police of each of the nine districts Uttar Pradesh Police Department. Lastly, on collecting the data, their scores were summed for every questionnaire's sample that were analysed.

## Statistical Analysis

All data analyses were conducted using IBM SPSS (version 26). Descriptive statistics were computed to summarize the means and standard deviations of chronotype dimensions, resilience, general health, and stress. Pearson’s correlation analysis was used to examine the relationships between chronotype dimensions, resilience, general health, and stress. To identify significant predictors of stress, stepwise multiple regression analysis was performed separately.

### Assumption Testing

Before applying multiple regression, the necessary assumptions were tested. Shapiro-Wilk and Kolmogrov-Smirnov tests were used for normality tests with considerable deviations ($p > 0.05$). Homoscedasticity and linearity were verified by residual plots (visual inspection). Durbin-Watson statistics confirmed residual independence particularly under acceptable range (1.5 to 2.5). Assessment of multi-collinearity was performed using VIF (Variance Inflation Factor), all values below 2 indicating the lack of concern of multicollinearity. Findings demonstrated accurate results for assumptions in multiple regression analysis.

### Ethical Considerations

Participants have been debriefed regarding the purpose and nature of the study. The participants have been provided written informed consent. Prior to administration of the tests, participants were notified regarding their right to withdrawal from the study at any point of time. Participants have been assured about the confidentiality issues.

# Results

Multiple regression analysis was stepwise used to investigate the predicting factors of stress among police professionals. Pearson's correlation and descriptive statistics was used for calculation at first. The results are as follows:

**Table 1.**
*Descriptive Statistics for Study Variables: Police Professionals, Chronotype Dimensions, Resilience, General Health, and Stress (N = 428)*

| Variables | *M* | *SD* |
|---|---|---|
| 1. Good Sleep | 15.95 | 4.49 |
| 2. Morningness | 19.60 | 3.49 |
| 3. Depressed Mood | 17.46 | 3.54 |
| 4. Overall Chronotype | 53.00 | 6.27 |
| 5. Resilience | 3.28 | .593 |
| 6. General Health | 22.96 | 4.84 |
| 7. Stress | 24.17 | 5.74 |

The study analysed major variables, the mean and standard deviation are displayed via Table 1. The sample (*N* = 428) consisted of police professionals. Chronotype dimensions (morningness, good sleep, depressed mood) were included during the assessment of the variables along with general health, resilience, stress and chronotype in general. An average score of good sleep dimension particularly suggestive of sleep pattern and sleep quality of the participants was (*SD* = 4.49, *M* = 15.95). The result outlays a reasonable insight of sleep quality among police professionals. A bit of variability is also witnessed among individuals. The dimension of morningness (alertness and activeness in morning hours) presents a mean score of (*M* = 19.60, *SD* = 3.49). This means a fair preference to morningness among respondents. The dimension of depressed mood associated with disruptions in circadian rhythm measures its negative effect with a present score of (*M* = 17.46, *SD* = 3.54). The result outlays moderate occurrence of mood symptoms with reasonable differences in individuals. On the whole, the chronotype score

measured with combination of three sub-dimensions shows score of (*M* = 53.00, *SD* = 6.27). The aforementioned score displays the participant's general circadian preference. The high values represent most favourable patterns of chronotype. Measurement of resilience was on a scale probably between 1-5 with average value of mean and standard deviation such as (*M* = 3.28, *SD* = 0.593). Therefore, moderate to high levels of resilience were noted for police professionals in the findings. Moreover, steady scores were noted relatively across the sample. While assessing the full-fledged health status (high scores denoted poorer health) the mean score of general health was (*M* = 22.96, *SD* = 4.84). This denotes moderate concerns related to health among the respondents. Levels of stress ranged from moderate to average, with a mean score of (*M* = 24.17, *SD* = 5.74). The data points considerable level of stress with noticeable variability between participants.

**Table 2**
*Correlation Coefficients Chronotype Dimensions, Resilience, General Health, and Stress (N = 428)*

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1. Good Sleep | 1 | | | | | | |
| 2. Morningness | .048 | 1 | | | | | |
| 3. Depressed Mood | -.427** | .265** | 1 | | | | |
| 4.Overall Chronotype | .501** | .740** | .407** | 1 | | | |
| 5.Resilience | .213** | -.199** | -.329** | -.144** | 1 | | |
| 6.General Health | .354** | -.094 | -.325** | .018 | .432** | 1 | |
| 7.Stress | .232** | .039 | -.230** | .058 | .394** | .624** | 1 |

In Table 2, the Pearson correlation coefficients is illustrated exploring the way various factors pertaining to chrono-biological and psychological relate to stress in a sample (N = 428) of police professionals. Dimensions of chronotype such as morningness, good sleep and depressed mood as well as general health and resilience are considered in the analysis as some key predictors. Significance test was performed using list-wise deletion at p<.01 and p< .05 level. A significant and positive correlation was established between stress and good sleep (r = .232, p<0.01). This indicates that the individuals having good sleep also faced higher stress reportedly. No significant relationship between stress and morningness was established (r = .039). This suggests that morning routine does not influence stress levels faced by police professionals. Significantly negative correlation was originated between stress and depressed mood (r = -.230, p<.01). This indicates that as stress increases depressed mood decreases. This contradictory association might be due to how items were scored or some specific

characteristics within the sample. The value (r =.058) indicated lack of statistically significant correlation between stress and chronotype. This means that in this group the stress levels are not strongly influenced by general circadian orientation. This outlays that chronotype lacks in capturing the score of stress influencers in occupational settings such as policing jobs. A positive correlation moderate in nature was established between stress and resilience (r =.394, p<.01). This provides an unexpected result and indicates that police professionals being more resilient with effective stress management skills are more self-aware leading them to be likely reporting more stress. An observation of positive correlation was made between stress and general health (r = .624, p<.01). Hence, the findings suggest strong existence of evidence linked between increased stress and deterioration of physical and mental health, particularly in demanding professions like policing.

**Table 3.**
*Regression analysis (Stepwise), Stress as criterion variable (N = 428).*

| Predictors | R | $R^2$ | Adjusted R Square | R Square change | F change | Beta | t | *p* |
|---|---|---|---|---|---|---|---|---|
| General Health | .624 | .390 | .388 | .390 | 271.89 | .624 | 16.49 | .000 |
| General Health + Resilience | .639 | .409 | .406 | .019 | 13.74 | .558<br>.153 | 13.49<br>3.71 | .000<br>.000 |
| General Health + Resilience + Morningness | .651 | .424 | .420 | .016 | 11.45 | .559<br>.178<br>.127 | 13.69<br>4.29<br>3.38 | .000<br>.000<br>.001 |

Table 3, (N = 428) displays the result of multiple regression analysis performed stepwise and conducted for the determination of biological and psychological factors for stress prediction among police professionals. In three stages, the analysis was initiated along with addition of predictors one at a time. It was meant for the assessment of their combined and individual impact in the elucidation of variations in levels of stress. General health in the first step was entered into the model on its own. The results showed a positive and strong relationship of general health with stress (R = .624), displaying 39.0% variable in levels of stress which could be accounted for general health perceived alone ($R^2$ = .390). The value $R^2$ = .390 confirms the robustness of the model and reliability is supported through (F-change 271.89, p < .000). Poor general health tends to be a strong predictor of high stress as the values demonstrate standardized beta value (β = .624), high (t = 16.49, p < .000). In simpler words, stress is reportedly found more in police professionals who also lack good health. In the second step, a

second predictor was added i.e. resilience. An improvement in the model was slightly noticeable after addition of this variable. The overall correlation was increased to (R = .639) and variance ($R^2$ = .409). This means that resilience and general health account for variation in levels of stress for about 40.9% altogether. The elevation in $R^2$ ($\Delta R^2$ = .019) proved meaningful statistically, also, resilience's uniqueness was confirmed in this value (F-change = 13.74, <.000). After significant adjustments in various predictors, an increase in the $R^2$ was noted i.e. (.388 to .406) which also indicated an actual improvement in model fit. While general health remained the more influential factor (β = .558, t = 13.49, p < .000), resilience also significantly contributed to predicting stress (β = .153, t = 3.71, p < .000). This outlays that resilient police officers are likely to experience less stress; however, the role of resilience is relatively small in case of general health. In the final step, morningness was initiated in the model as it provides a calculation of circadian preference. By adding this, there is an increase in overall correlation (R = .651), and 42.4% of variance in stress ($R^2$ = .424) is explained by the model. The modification in $R^2$ ($\Delta R^2$ = .016) was also important (F-change = 11.45, <.000), indicating that morningness added value beyond the first two predictors. By adjusting the improvement in $R^2$ value from .420 to .406 in the earlier phase, a redefined model is indicated as it fits data even after correcting the additional predictor. In this full model, general health continued to be the strongest predictor (β = .559, t = 13.69, p < .000), followed by resilience (β = .178, t = 4.29, p < .000), and morningness (β = .127, t = 3.38, p < .001). The results are suggestive of the fact that police professionals who recognize morning routine might also experience slightly elevated stress, most probably due to work shifts disrupting their preference of how daily life flows.

# Discussion

The descriptive findings revealed moderate levels of good sleep and morningness, alongside some degree of mood disturbance, suggesting that while many officers demonstrate stable circadian rhythms, a significant number of them may experience sleep related issues, majorly as a result of irregular work schedules, especially night shifts (Charles et al., 2007; Koshy et al., 2019). The overall chronotype scores indicates generally well-adjusted circadian preference, though the presence of underlying mood symptoms points to psychological distress. Resilience was found to be moderately high among participants, implying a reasonable capacity for adaptive stress coping. However, higher scores in stress and general health suggest ongoing and underlying psychological and somatic strain (Violanti et al., 2017). These aligns with prior findings that continuous exposure to stressful work environments leads to long-term health

issues (Fedd, 2024; Ganster, & Rosen, 2013; Kivimäki & Kawachi, 2015). Furthermore, recent research highlights the interconnected influence of sleep quality, resilience, and stress in law enforcement populations. Quality of sleep has been identified as a significant mediator between stress and burnout, while resilience has taken place a protective role by reducing the impact of stress (Chen et al., 2025; Xu et al., 2025; Garbarino et al., 2013). These findings raise the urgent need for wellness programs that promotes circadian health, need for resilience and stress reduction training. The correlation analysis highlights important connections. Interestingly, a positive correlation has been found between good sleep and stress, suggesting that officers who reported better sleep also experienced elevated stress. Although this seems counter intuitive and complicated, but it might indicate use of sleep as a coping strategy reflecting a compensatory behaviour (Heusea & Grebe, 2024). Moderate to high level of resilience found in this sample shows possession of better coping resources thereby protecting sleep quality despite stress (Li et al., 2019). Besides, cultural norms, duty norms, organisational structure, social support may have also influenced reporting. Morningness or preference for morning activity shows no significant correlation with stress, suggesting that being a morning person has no necessary influence on stress level in this group. This might be because unpredictable work hours in policing overshadow the effects of circadian preferences as also found by (Mehta, 2025). Recent work in healthy adult samples found that morningness has significant link to better sleep quality and greater resilience but did not show a direct effect on stress or depressive symptoms after accounting for mediating variables such as sleep disturbance (Poon et al., 2024). Typically, depression and stress go hand in hand, but here a negative association between depressed mood and stress was observed. This can be due to how symptoms were measured or could be the influence of specific sample characteristics. Moreover, this can suggest underreporting of depressive symptoms by officers, perhaps due to stigma or lack of awareness, or probably those with depression have eventually developed coping skills (Liu et al., 2025, Miño et al., 2025; Li & Xu, 2023). This intricacy highlights the significance of routine mental health assessments in law enforcement agencies. It is surprising that resilience and stress have a beneficial relationship because resilience typically reduces stress. This may be due to that resilient officers recognise and report their issues or resilience here is a response developed against ongoing stress, because resilience measures at times reflect coping responses activated under stress (e.g., engagement, problem-solving, adaptation) rather than a trait present even in absence of stress itself (Poon et al., 2024). Lastly, a strong positive link between poor general health and stress confirms well established findings that physical health

problems are closely tied to psychological stress, especially in demanding jobs like policing, as also reported by Mehta (2025) that high stress leads to poor sleep and burnout in this field. The unexpected patterns found in the correlation analysis may reflect response tendencies, instrument limitations and other unmeasured occupational factors in police professionals, which can influence the reporting and experience of stress-related outcomes (Queirós et al., 2020). Hence, Hypothesis 1 was not supported.

General health, resilience, and morningness has come up as key predictors of stress in police professionals, indicated by the stepwise multiple regression analysis. General health accounts for 39% of the variance in stress levels, standing out as the strongest contributor. This highlights the vital connection between mental and physical health. Officers who suffer from health issues are unable to give their best efforts, which increases their stress levels. These results align with those of previous studies (Pandeya, 2025; Kukucska et al., 2023; Violanti et al., 2017). The model's predictive value was enhanced by the inclusion of resilience, indicating that officers who are resilient are less likely to feel stressed even when they are in the same high-pressure situation. According to earlier studies, officers who receive resilience training are better able to control their emotions and experience less stress (Moreno et al., 2024; Zueger et al., 2023; Chitra & Karunanidhi, 2021; Miller, 2008). Curiously, although its effect was less pronounced, morningness, the tendency for being active earlier in the day, also greatly enhanced the model. The discrepancy between morning-oriented people and the frequently nighttime work schedules that are typical in law enforcement may account for this oddity. Such circadian misalignment can disrupt sleep and increase vulnerability to stress as also observed by previous researches that individuals whose natural biological rhythms clash with their job schedules are more prone to stress and burnout. (Li et al., 2024; de Azevedo Bringel et al., 2023; Gu et al., 2023; Elliott, 2017) Overall, these results reflect how general health, personal resilience, and biological rhythms work together in shaping how officers experience stress. Addressing these areas holistically through health programs, resilience training, and scheduling practices aligned with biological preferences may provide effective strategies for reducing stress in the police professionals' field. This implies hypothesis 2 has been accepted.

## Implications of the Study

The findings of the study offer actionable pathways for officer welfare and policy formulation. General health emerged as the strongest predictor of stress, emphasising the need for regular health checkups, comprehensive wellness programs, and accessible healthcare in law

enforcement departments (Resurreccion, 2024; Grupe et al., 2021; Habersaat et al., 2015; Avdija, 2014). The role of resilience supports the implementation of resilience training focused on coping skills, emotional regulation, and psychological flexibility in both recruitment and ongoing training (Moreno et al., 2024; Jones et al., 2019; Andersen et al., 2015). An interesting finding was the impact of morningness. Police professionals with morning-oriented biological rhythm experience greater stress from working on night shifts likely due to circadian misalignment. Departments can implement brief chronotype assessment during recruitment and work on person-centric shift rostering (Kervezee et al., 2021; Hittle & Gillespie, 2018; Boudreau et al., 2013). This may not always be operationally feasible but possible efforts should be made to align an officer's natural rhythm with their shift cycle. The regression model shows the necessity for a validated screening tool. Assessment of new recruits, as well as, serving officers on general health, resilience, and chronotype is necessary to identify individuals at potentially higher risk of stress accumulation and plan appropriate intervention.

This study also makes several contributions to the theoretical understanding of occupational stress in risky professions. It challenges and refines the classic Job Demands-Resources (JD-R) model. The model posits psychological resources as buffers against demands but our finding shows that resilience has positive, and not negative, correlation with stress. This suggests that in police, resilience may not simply be a passive resource but an actively engaged capacity. Secondly, the study successfully integrates a biological variable, chronotype, into the psychosocial stress paradigm. The finding that morningness was the significant and independent predictor in the final regression model validates the importance of person-environment fit theory. It suggests that misalignment between and officer's innate circadian preference and erratic shift and sleep schedule constitutes unique biological stressor.

## Limitations of the study

Although the present study offers valuable insights it has some major limitations. Cross-sectional design prevents to conclude about cause-and-effect relationship. Secondly, reliance on self-reported data comes with potential for bias and underreporting due to prevailing stigma. Third, the sample has come from a single organization, thereby, limiting generalizability to other populations, regions, and cultures. The findings should also be interpreted with caution as there is some possible conceptual overlap between chronotype and sleep-related variables, which may have contributed to the observed associations (Chauhan et al., 2024) as well as purposive sampling may have some issue related to generalizability to the population of different ranks,

units, or geographical settings. Lastly, the study has not examined several relevant factors that are likely to influence stress such as trauma exposure, organizational support, workload, and work life balance. Future research should consider these for a more comprehensive understanding.

## Future Directions

Future research should focus on diverse samples and employ longitudinal design to assess changes over time. Although the SCRAM provides multidimensional assessment of chronotype and sleep related variables, future studies may consider using chronotype-specific measures that might improve construct specificity. Future research should explicitly explore interaction effects and examine other variables in a mediation-moderation framework to capture the complexity of stress processes. Replicating findings across different regions, ranks, and units within police departments would enhance generalizability and external validity.

## Conclusion

This study presents the complex interplay between physical health, psychological resilience, sleep patterns, and stress in police professionals. Police professionals generally report moderate sleep quality, preference for morningness, high level of resilience, and a stable circadian rhythm, yet many of them still experiences high stress and significant health issues. These findings suggest that even when individual coping factors like good sleep and resilience are present, the demanding nature of police work can still lead to elevated stress levels. Contrary to conventional assumptions, stress was positively correlated with resilience and good sleep, while conventionally there is also positive association to poor health and depressed mood, suggesting that stress in this occupation may function both adaptively and maladaptively depending on the outcome. General health and resilience emerged as the strongest predictor of stress, highlighting the urgent need for physical health monitoring and wellness initiatives within police departments as well as psychological training that enhances adaptability and emotional regulation. The influence of morningness, though modest, suggests that shift misalignment with natural biological rhythms may contribute to increased stress, supporting the case for more flexible, chronotype-informed scheduling. Overall, the findings point to the necessity of a comprehensive approach to stress reduction in policing integrating health promotion, psychological support, and organizational change. Future longitudinal research is essential to track how these factors evolve overtime and to evaluate the long-term impact of targeted interventions addressing the improvement of wellbeing and performance of police professionals.

## Funding/Financial Support

The authors have no funding to report

## Other Support/Acknowledgement

The authors wish to thank the entire police professionals of Uttar Pradesh, who were very cooperative and supportive towards the research idea.

## Competing Interests

The authors have declared that no competing interests exist.

## Ethical Approval

The ethical approval for this study was obtained from the office of Institutional Ethics Committee (IEC) of Rajiv Gandhi University, Arunachal Pradesh with reference form no. (RGU/EO-55/IEC/2022/199) dated on 27 December 2024.The ethical committee asked the researcher to maintain and follow all prescribed ethical norms. They also assured the researcher to maintain the confidentiality of collected data and subject as per the Uttar Pradesh Police Department's guidelines. All these measures were adopted by the researcher while collecting the data in the field. The researcher has also collected written permission and informed consent from 9 zones of Police Commissioners Uttar Pradesh to allow him collect data from the Inspectors, Sub-inspectors of various police stations in Uttar Pradesh.

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