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Cite this article: Sherriff D, Solomon S, Ward L, Nielson SA, Yang C, Duraccio KM, and Kay DB (2025). Exploring sleep value: Distinct profiles and individual differences. *Research Directions: Sleep Psychology*. **2**, e3, 1–8. https://doi.org/10.1017/slp.2024.7

Received: 20 August 2024
Revised: 19 November 2024
Accepted: 21 November 2024

Keywords:
sleep value; sleep valuation; sleep prioritization; sleep attitudes; sleep health

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Research Directions

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Exploring sleep value: Distinct profiles and individual differences

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Abstract

Sleep value is the relative worth individuals assign to sleep. We previously found that individual differences in several sleep value subfactors relate to demographic, health and sleep variables. Given the pivotal role values play in health behavior and the positive association between sleep value and sleep disturbance, individual differences in sleep value may influence vulnerability/resilience to sleep and circadian disturbance. This survey study ($N = 455$) aimed to establish the latent factor structure of sleep value and identify whether sleep value profiles relate to demographic and sleep characteristics. Factor analysis on the Sleep Valuation Item Bank 2.0 identified five factors (wanting, prioritizing, devaluing, appreciating and preferring). Latent profile analyses revealed five distinct sleep value profiles (unconcerned, appreciative, devalue, ambivalent priority and concerned). Depression, sleep disturbance and sleep-related impairment were highest among those who highly value sleep (concerned profile) and lowest among those who neither value nor devalue sleep (unconcerned profile). Findings suggest sleep value is a complex aspect of sleep health rather than a "more is better" construct and highlight that individual differences in sleep value profiles may be associated with vulnerability/resilience to sleep disturbance.

Introduction

Sleep value refers to the relative amount of worth an individual places on their sleep (Kay *et al.*, 2023; Nielson *et al.*, 2021) and is considered by some to be a core principle of sleep health (Espie, 2022). Sleep health is a multidimensional pattern of sleep and wakefulness (Buysse, 2014) that an increasing number of medical, safety and scientific organizations recognize as important to overall health, wellness and performance (AASM, 2021; CDC, 2024; NHTSA, 2022; NSF, 2024). Advocacy efforts by these organizations speak to a growing recognition that increasing personal sleep value is essential to sleep health promotion. Often, the underlying assumption seems to be that more sleep value equates to better sleep health. However, using the original version of the Sleep Valuation Item Bank, we previously found that individuals with poorer sleep tend to place high value on their sleep (Nielson *et al.*, 2021). Research done in the context of insomnia, suggests intentional effort and rituals aimed at inducing sleep are typically thought of as contributing factors to increased sleep disturbances, showing that an overemphasis on sleep may be associated with poorer sleep health (Espie, 2023; Kalmbach *et al.*, 2018). On the surface at least, it seems as though the people who are most satisfied with their sleep rarely ever think about it, and those with the highest levels of sleep disturbance may value it maladaptively. These findings indicate that sleep value may have important implications for an individual's resilience/vulnerability to sleep disturbance which may have further implications on how best to target sleep value in sleep health promotion efforts.

Human value systems are inherently complex, multidimensional, and often conflicting. Recognizing individual level values will likely lead to greater understanding of health behaviors and outcomes (Fulford, 2011). Indeed, studies have shown that when personal values are taken into consideration along with empirical evidence, health promotion efforts become more effective (DiClemente *et al.*, 2010; Mead & Irish, 2020; Stacey *et al.*, 2017). For example, previous research has shown that identifying latent profile structures can enhance health promotion efforts for specific groups, such as risk assessments of older adults in primary care settings and workplace health programs (Ford *et al.*, 2017; Jessiman-Perreault *et al.*, 2020). Similarly, identifying distinct sleep value profiles could enhance sleep health promotion efforts by allowing messaging to be tailored to different sleep value types. How sleep is valued amidst other values depends on a myriad of factors including an individual's knowledge about sleep, expectations of sleep, attitudes towards sleep, current sleep behaviors, social obligations, biological needs, and intrinsic motivation to sleep (Grandner, 2017; Nielson *et al.*, 2021). For example, prioritization of sleep, a dimension of sleep value, has been shown to be inconsistent with behavior when sleep conflicts with other obligations (Huang *et al.*, 2023). Understanding these complexities can provide insights into individual differences in sleep value, which, in turn, can help to explain variations in vulnerability and resilience to sleep disturbances.

We recently reported that sleep value is composed of multiple factors, including wanting (a desire to obtain more sleep), prioritizing (a proactive intention to obtain sleep), preferring (preferring sleep over other activities at night when sleepy), and devaluing (believing sleep is unimportant) sleep (Kay *et al.*, 2023). We also found that these factors manifest differently and to varying degrees across individuals. Relevant to the present paper, we found that more severe insomnia symptoms were associated with greatly wanting sleep but also devaluing it (Kay *et al.*, 2023). This finding, along with findings of higher sleep value in those with greater sleep disturbance, sleep-related impairment, psychological distress, depression, or anxiety (Nielson *et al.*, 2021), raises the possibility that approaching sleep value as a unidimensional, "more is better" aspect of sleep health may be counterproductive in individuals vulnerable to sleep disturbance. However, the latent factor structure of sleep value remains tentative, and whether there are distinct sleep value profiles uniquely associated with sleep disturbance and sleep-related impairment is unknown.

The aims of this study were to establish the latent factor structure of sleep value using the Sleep Value Item Bank 2.0 (SVIB-2.0) and to explore how distinct sleep value profiles relate to demographic, psychological, and sleep characteristics. A better understanding of sleep value and how it relates to sleep disturbance and sleep-related impairment addresses the question, "What factors influence individual differences in vulnerability/resilience to sleep loss and/or circadian misalignment." Identifying these profiles and their associations with sleep disturbance and sleep-related impairment may also help guide future research on what factors predict resilience and vulnerability to sleep loss and circadian misalignment.

Methods

This secondary analysis used data from a study fully described in our methods paper (Sherriff *et al.*, 2025). In brief, data were collected by a Qualtrics team via an anonymous online survey between July 13, 2023 and August 9, 2023. A feasibility sample of 500 participants was originally requested based on funding availability. The survey was open to adults within the continental United States who were at least 18 years old. The parent study aimed to develop and validate novel measures of overlooked dimensions of sleep health, which included sleep resilience and sleep value. Following the exclusion of participants for invalid responses, the analysis dataset consisted of 455 participants. The questionnaires relevant to this study include the participant demographics survey (gender, age, race, education level, number of dependents, income level, and marital status), SVIB-2.0, Patient Reported Outcomes Measurement Information System Depression – Short Form (PROMIS-DEP), Patient Reported Outcomes Measurement Information System Sleep-Related Impairment – Short Form (PROMIS-SRI) and Patient Reported Outcomes Measurement Information System Sleep Disturbance – Short Form (PROMIS-SD). The PROMIS measures are widely used and well-validated. The PROMIS-DEP has high internal consistency ($\alpha = .95$) (Pilkonis *et al.*, 2011). The PROMIS-SRI and SD also have high internal consistency ($\alpha = .92$ and .89, respectively) (Chimenti *et al.*, 2021). The SVIB-2.0 is a 60-item questionnaire updated from the original version (Nielson *et al.*, 2021). The original SVIB has been shown to have sufficient internal reliability, high face validity, adequate factor loadings and concurrent validity (Kay *et al.*, 2023). We sought to improve the SVIB by removing items with poor face validity or factor loadings and by adding several items to help capture sleep liking/enjoyment, a dimension we had hypothesized might relate to the value placed on sleep (see Sherriff *et al.*, 2025 for more details).

Table 1. Demographic Features of the Analysis Sample ($N = 455$)

Sample characteristics	Sample metrics M (SD); N (%)
Age	45.4 (16.7)
Female	242 (53%)
Non-Binary	4 (1%)
White	372 (82%)
Education	2.9 (1.6)
Number of Dependents	1.5 (2.1)
Income	1.9 (1.2)
Married	226 (50%)

Note: Education (What is the highest degree or level of school you have completed?) 0 = less than a high school diploma, 1 = high school degree or equivalent, 2 = some college, 3 = associate degree, 4 = bachelor's degree, 5 = master's degree, 6 = professional degree or doctorate degree. Income (What is your household annual income, total gross income received by all members of a household within a 12-month period? 0 = less than $10,000, 1 = $10,000–$40,000, 2 = $40,001–$90,000, 3 = $90,001–$190,000, 4 = more than $190,000).

Sample features have been previously reported (Sherriff *et al.*, 2025). Table 1 shows the demographic features of the analysis sample used in these analyses. In brief, the sample was 53% female, ages ranged from 18 to 85 years, 82% were White, and 50% were married. For context, the phrasing of the Likert-style questions on education and income in the note accompanying Table 1.

Analyses

To establish the latent structure of sleep value using the SVIB-2.0, we used both exploratory and confirmatory factor analyses. The number of factors was determined using the scree plot method based on the results of an exploratory factor analysis (EFA) in one half of the sample ($n = 221$). Four and five factor models were compared by Chi-Square difference test, Comparative Fit Index (CFI), Tucker–Lewis index (TLI) and Root Mean Square Error of Approximation (RMSEA). Factor loadings were used to calculate Omega, rather than obtaining Cronbach's Alpha using raw item scores (Peters, 2014). Following the EFA, we used the other half of the sample ($n = 234$) for a confirmatory factor analysis (CFA) to validate the EFA structure. A final CFA in the total sample was conducted, and factor scores were saved for subsequent latent profile analyses (LPA).

We conducted LPA to identify the presence and number of sleep value profiles. Three, four and five classes were compared in terms of the Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and the sample-size-adjusted BIC (ABIC), Entropy, Likelihood Ratio Test (LRT), and interpretability. To explore how the latent profiles related to sleep and psychological variables, we compared the profile types separately across PROMIS-DEP, PROMIS-SRI and PROMIS-SD which were included as auxiliary variables using the R3STEP method in Mplus. Demographic variables were included as covariates to predict class membership without contributing to the latent profile structure. Analyses were performed with MPLUS, Version 8.11 (Muthén & Muthén, 1998–2025).

Results

In the EFA with 221 participants, five factors were supported by the data, as shown by the point of deflection on the scree plot

https://doi.org/10.1017/slp.2024.7 Published online by Cambridge University Press

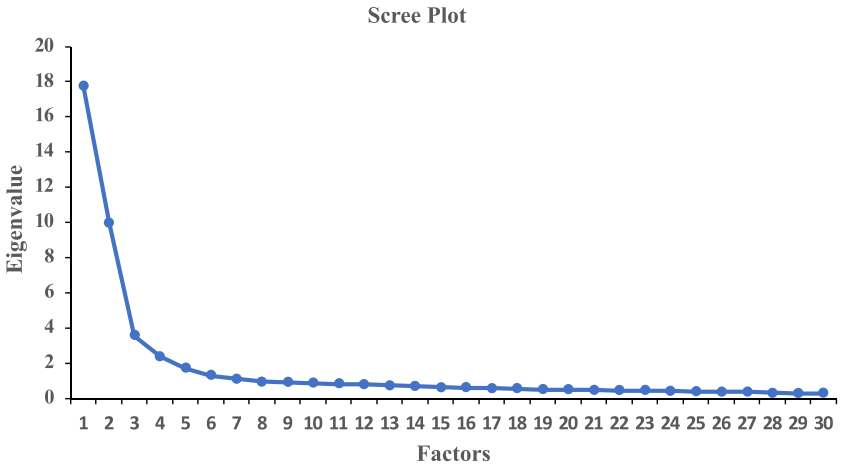

Figure 1. Scree plot for Exploratory Factor Analysis with an inflection suggesting a five factor solution.

(Figure 1). These factors correlated with eigenvalues that accounted for 67% of the total variance (Table 2). The test of model fit was acceptable for the five-factor model, which was superior to the four-factor model based on a lower chi-square value and a significant result of ($p < .001$), which suggests that a five-factor model captures more of the variance than a four-factor model (Table 3). Table 4 shows the CFA of five factors in the full sample. Internal consistency was assessed using omega, with each factor demonstrating a high level of internal consistency (Table 5). The model fit indices showed that all the measurement models fit the data well (Table 6). The factor scores resulting from the CFA in the total sample were obtained and saved for subsequent latent profile analyses.

Each factor of the SVIB-2.0 was assigned a descriptive label based on the type of items that loaded onto it, as well as alignment with our prior factor analysis of the original SVIB (Kay *et al.*, 2023). *Sleep Wanting* was exemplified by items suggesting a desire for more sleep, including, "I would rather stay asleep than wake up most mornings" and "Generally, I want to sleep more because I feel sleepy." *Sleep Prioritizing* included items reflecting an emphasis on organizing the day to accommodate sleep, including, "I modify my daytime activities to accommodate my sleep" and "I schedule my day around my sleep." *Sleep Devaluing* encompassed items suggesting a disregard for sleep's importance including, "I feel that sleep is a waste of time," "I avoid sleeping" and "I resent that I have to sleep each night." *Sleep Appreciating* included items suggestive of placing high value on and appreciation for sleep such as, "I value my sleep," "I desire to get satisfying sleep" and "It is very important to get a proper amount of sleep every night." *Sleep Preferring* captured items indicating a preference for sleep over other activities, which included, "When I am sleepy at night, I generally prefer going to sleep over staying up later to engage in social activities, staying up later to do my hobbies, surfing the web, watching movies, engaging in social media, or playing video games."

Table 7 displays the results of latent profile analyses conducted with saved factor score variables. The five-class model was selected based on the smallest information criteria (AIC, BIC, ABIC) and the highest entropy, as it provided the best model fit and interpretability. Table 8 displays the five profiles with descriptive labels. The **unconcerned** profile comprised 26% of the sample and was characterized by low scores across all factors, indicating an indifferent relationship with sleep. Individuals in this profile place a low importance on sleep but also do not actively avoid or disregard it. The **appreciative** profile comprised 28% of the sample and was middling for most factors. This profile reflects a favorable view of sleep, actively enjoying it but does not necessarily prioritize or seek it out. This profile may view sleep as something to value and prefer but not something urgent. The **devalue** profile comprised 26% of the sample who did not want, appreciate, or prefer sleep and endorsed several negative attitudes about sleep. This profile is characterized by engaging in sleep out of necessity or obligation rather than out of a positive experience. Individuals in this profile may prioritize sleep due to external demands but do not enjoy it or feel it is a source of personal satisfaction. The **ambivalent priority** profile comprised 14% of

Table 2. Eigenvalues

Factors	Eigenvalue	% Variance	Cumulative %
1	17.78	33.55	33.55
2	9.97	18.81	52.36
3	3.56	6.72	59.08
4	2.37	4.47	63.55
*5	1.70	3.21	66.75
6	1.29	2.44	69.19
7	1.09	2.05	71.25

Note: Extraction Method: Factor analysis. Includes only those with eigenvalues >1.
% = Percentage. * Indicates the number of factors supported by the scree plot method.

Table 3. Model fit for 4 or 5 factors

Model	Parameters	Chi-Square	Degrees of Freedom	*p*-value
4-factor	206	1776.84	1172	<.001*
5-factor	255	1525.81	1123	<.001*
4-factor against 5-factor		229.54	49	<.001*

Note: *$p < .001$.

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Table 4. Confirmatory Factor Analysis of Sleep Value Item Bank 2.0

Items	Wanting	Prioritizing	Devaluing	Appreciating	Preferring
2. When I have nothing to do, I prefer to sleep	0.86				
8. I would rather stay asleep than wake up most mornings	0.84				
23. Generally, I want to sleep more because I feel sleepy	0.82				
3. I generally prefer to sleep in	0.76				
1. I generally desire more sleep	0.75				
4. When I wake up in the morning or my alarm goes off, I generally prefer to go back to sleep	0.75				
21. I want to sleep more because I am not getting enough restful sleep	0.74				
5. If I had to choose between sleeping a little longer in the morning or eating breakfast, my choice would be to sleep in	0.67				
10. I want to sleep more even when I feel rested		0.88			
16. I want to sleep more even when I am not sleepy		0.87			
26. I modify my daytime activities to accommodate my sleep		0.86			
25. I schedule my day around my sleep		0.83			
29. If I need more sleep, I am likely to sleep in even if it means I will be late for work or other important meetings		0.82			
12. I want to sleep more because I enjoy it so much		0.81			
27. I keep track of how much sleep I've lost and how much sleep I hope to make up later		0.81			
7. I take every opportunity I can to sleep		0.80			
28. If I lost sleep on one night, I try to make it up by napping or sleeping more another night		0.66			
54. I feel that sleep is a waste of time			0.90		
60. When I feel like "I have to sleep", I take revenge by staying awake doing other things I want to do instead			0.87		
51. I avoid sleeping			0.87		
57. I resent that I have to sleep each night			0.86		
49. I wish I could sleep less than I do			0.84		
47. I try to get away with as little sleep as possible			0.83		
48. When I feel sleepy at night, I push through it, so I can stay awake longer			0.79		
46. Sleep is less pleasant to me than being awake			0.76		
59. I could get so much more done if I didn't have to sleep			0.71		
56. I identify with the mantra "You can sleep when you're dead."			0.71		
45. I put off going to sleep at night even when I am sleepy			0.70		
52. If I could function without sleep, I would sleep less than I do			0.68		
50. I never think about my sleep			0.63		
35. I value my sleep				0.88	
36. Sleep is important to me				0.88	
43. Sleep is valuable to me				0.86	
38. I value getting a refreshing night of sleep				0.84	
33. I desire to get satisfying sleep				0.84	
44. It is very important to get a proper amount of sleep every night				0.81	
34. Sleep is pleasurable to me				0.80	
37. Sleep is valuable because it helps me perform better during the day				0.77	
32. I like to sleep soundly through the night				0.77	

(*Continued*)

https://doi.org/10.1017/slp.2024.7 Published online by Cambridge University Press

Table 4. (*Continued*)

Items	Wanting	Prioritizing	Devaluing	Appreciating	Preferring
41. I value falling asleep quickly				0.68	
18. When I am sleepy at night, I generally prefer going to sleep over staying up later to engage in social activities					0.87
17. When I am sleepy at night, I generally prefer going to sleep over staying up later to do my hobbies					0.84
19. When I am sleepy at night, I generally prefer going to sleep over surfing the web, watching movies, engaging in social media, or playing video games					0.77
20. When I am sleepy at night, I generally prefer going to sleep over staying up later to do household tasks					0.76

Note: Factor loading values calculated as Omega.

Table 5. Factor loading for SVIB-2.0

Factor	Omega
Wanting	0.92
Prioritizing	0.95
Devaluing	0.95
Appreciating	0.95
Preferring	0.88

Table 6. CFA split sample and total sample

Model	Value	df	*p*-value	RMSEA (90% CI)	CFI	TLI
[Specified] model (split)	1571.54*	892	<.001*	0.06 (0.052–0.062)	0.96	0.96
[Specified] model (full)	2375.50*	892	<.001*	0.06 (0.058–0.063)	0.95	0.95

Note: *$p < .001$ df = Degrees of freedom.

Table 7. Class comparison of latent class analysis

Class	AIC	BIC	ABIC	Entropy	Smallest class	LRT
3	6161	6310	6195	0.83	0.20	0.04
4	6013	6215	6059	0.81	0.19	0.22
5	5885	6140	5944	0.84	0.07	0.04

Note: AIC = Comparison of Akaike Information Criterion, BIC = Bayesian Information Criterion, ABIC = sample-size-adjusted BIC, LRT = Likelihood Ratio Test.

Table 8. Results of latent class analysis - five class model

	Unconcerned	Appreciative	Devalue	Ambivalent Priority	Concerned
Wanting	−1.20	0.13	0.01	1.08	1.74
Prioritizing	−1.39	−0.25	0.35	1.72	1.48
Devaluing	−0.57	−0.50	0.59	1.13	−0.35
Appreciating	−0.57	0.68	−0.83	0.40	1.82
Preferring	−1.02	0.45	−0.51	1.07	1.76
n (%)	117 (0.26)	125 (0.28)	117 (0.26)	65 (0.14)	31 (0.07)

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Table 9. Results of the latent class analyses including auxiliary and demographic variables

	Unconcerned (n =117)	Appreciative (n = 125)	Devalue (n = 117)	Ambivalent Priority (n = 65)	Concerned (n = 31)
Age	55.9(16.7)^{cd}	49 (16.8)^{cd}	38 (13.2)^{ab}	34.8 (7.9)^{abd}	41.7 (14.6)^{a}
Female	0.57 (0.5)^{d}	0.66 (0.48)^{d}	0.57 (0.5)^{d}	0.08 (0.27)^{abcd}	0.81 (0.40)^{d}
White	0.8 (0.4)	0.84 (0.37)	0.77 (0.42)	0.88 (0.33)	0.84 (0.37)
Education	2.3 (1.39)^{bd}	2.98 (1.44)^{a}	2.59 (1.6)	4.42 (1.52)^{a}	2.23 (1.28)
Income	1.53 (0.93)	1.85 (1.12)	1.7 (1.12)	3 (1.1)	1.52 (0.93)
Married	0.4 (0.49)	0.49(0.5)	0.48 (0.5)	0.83 (0.38)	0.26 (0.45)
Dependents	0.88 (1.37)	1.12 (1.43)	1.48 (1.92)	3.37 (3.21)	1 (1.44)
SD	−0.57 (1.01)^{bcd}	0.22 (1.28)^{a}	0.16 (0.92)^{a}	−0.03 (1.24)^{a}	0.82 (1.35)^{abcd}
SRI	−0.97 (0.96)^{bcd}	0.05 (1.19)^{ad}	0.29 (0.97)^{a}	0.56 (1.18)^{ab}	1.23 (1.34)^{abcd}
DEP	−1.31 (1.94)^{bcd}	0.19 (2.39)^{ac}	0.77 (1.99)^{abd}	0.01 (2.07)^{ac}	0.82 (1.35)^{abd}

Note: a = significantly different than class 1, b = significantly different than class 2, c = significantly different than class 3, d = significantly different than class 4. Scores for Sleep Disturbance (SD), Sleep-Related Impairment (SRI), Depression (DEP) are respectively independent variables of the latent class analysis and the values refer to the mean differences between classes. Negative values indicate the group had lower values than the average. Female, White, Married are displayed as percentages. Education and Income were measured using a Likert scale with the following categories: Education (What is the highest degree or level of school you have completed?) 0 = less than a high school diploma, 1 = high school degree or equivalent, 2 = some college, 3 = associate degree, 4 = bachelor's degree, 5 = master's degree, 6 = professional degree or doctorate degree. Income (What is your household annual income, total gross income received by all members of a household within a 12-month period? 0 = less than $10,000, 1 = $10,000–$40,000, 2 = $40,001–$90,000, 3 = $90,001–$190,000, 4 = more than $190,000).

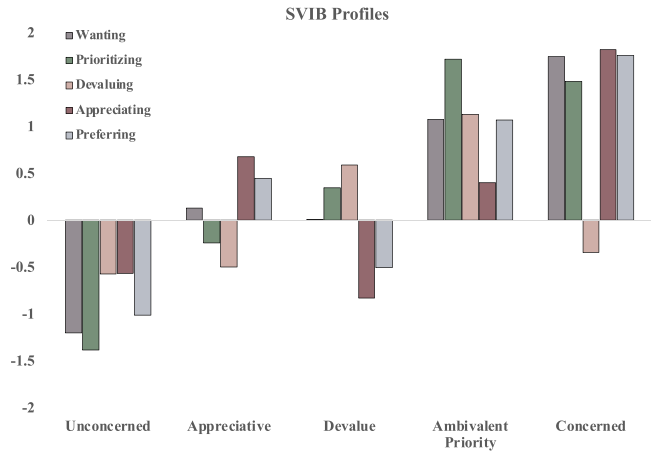

Figure 2. Sleep Value Profile Types.

the sample who highly wanted, preferred, prioritized and even appreciated sleep yet devalued it. This profile was characterized by a strong desire for sleep and a clear prioritization of it, yet it also exhibited conflicting views on the importance of sleep. This profile actively seeks and prioritizes sleep but experiences some ambivalence or dissatisfaction, which may lead to tension between their desire for sleep and their indifferent attitudes. The **concerned** profile comprised 7% of the sample. This profile was characterized by a strong desire for and prioritization of sleep, accompanied by positive attitudes toward its importance and an absence of devaluation. These traits suggest that individuals in this profile value sleep because they currently lack it (Figure 2).

Table 9 displays differences in depression severity (PROMIS-DEP), sleep-related impairment (PROMIS-SRI), sleep disturbance (PROMIS-SD), and demographics across the five profiles. Individuals in the concerned profile were more likely to be female, high in depression, sleep disturbance and sleep-related impairment. Conversely, individuals in the unconcerned profile tended to be less educated, older adults, low in depression, sleep disturbance and sleep-related impairment. Those with an ambivalent priority profile were more likely to be males of working age, highly educated with mild sleep-related impairment. The appreciative profile tended to include those with mild sleep disturbance and depression. The devalue profile tended to include those with mild sleep disturbance and sleep-related impairment and higher depression.

Conclusions

By establishing the latent factor structure of sleep value, identifying distinct sleep value profiles and linking those profiles to differences in sleep disturbance and sleep-related impairments, the results of this study address the question, "How do psychological factors relate to individual differences in vulnerability/resilience to sleep loss and/or circadian misalignment." We identified five factors of sleep value using the SVIB-2.0 that represent distinct aspects of sleep value. We conceptually replicated the findings of the factors identified previously using the original SVIB (Kay *et al.*, 2023) including, sleep wanting, prioritizing, devaluing and preferring. Items corresponding to these factors in our previous study show some difference in loading order and loading strength but generally suggest refined alignment within their respective factors. Highlighting improvements in the SVIB-2.0, the factor loadings in this study were generally higher and more consistent than those produced by the original SVIB, reflecting stronger item-factor relationships and greater conceptual clarity of the factor structure of sleep value. In this study, we also extended the scope of sleep value to include a sleep appreciation factor. Although some of the items that loaded onto this factor include the items added to capture sleep liking/pleasure, this newly emerging 5th factor better reflects an appreciation for certain aspects of sleep and recognizing its importance including, "I value my sleep," "sleep is important to me" and "I value getting a refreshing night of sleep." Collectively, we are approaching a stable representation of sleep value with the SVIB-2.0.

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We also found that individuals clustered into five major sleep value profiles based on the five factors of the SVIB-2.0 including a(n) (1) unconcerned profile, who neither valued nor devalued sleep, (2) appreciative profile, who appreciated sleep and preferred it but did not prioritize it, (3) devaluing profile, who did not want, appreciate, or prefer sleep and endorsed general negative attitudes about sleep, (4) ambivalent profile, who highly wanted, preferred, prioritized and even appreciated sleep and yet still devalued it and (5) concerned profile, who wanted, preferred, prioritized and appreciated sleep, and did not devalue it with negative attitudes about sleep. Strikingly, most of the groups had some level of conflict over the value of sleep across the five factors of sleep value, illustrating the complex nature of sleep value as a construct. Paradoxically, the concerned profile who tended to have poorer sleep was the only type that had a consistent pattern of valuing sleep across the five sleep value factors. Although appearing to be the model valuers, this group had a nuanced relationship with their sleep when compared to the other profiles. Indeed, despite highly wanting, prioritizing, preferring and appreciating sleep, they also had poor sleep, high daytime sleep-related impairment and depressed mood, suggesting that they may value sleep as they currently lack it. This pattern may be further reflected, in the opposite sense, by the unconcerned profile, as this group tended to have lower levels of sleep disturbance, sleep-related impairment and depressed mood, indicating that they may not need to pay much attention to their sleep since it is of a higher quality. It is possible that concern or overvaluing sleep may confer risk for poor sleep, worse mood and greater daytime impairments, leading to a vicious cycle. Greater cognitive preoccupation with sleep can contribute to insomnia symptoms (Espie, 2023; Kalmbach *et al.*, 2018).

The other profiles differed in important ways across demographics, sleep disturbance, sleep-related impairment and depression as well. The unconcerned profile tended to be older, less educated and ironically had better sleep and mood. Future research is needed to determine whether a lack of appreciation and prioritization of sleep confers an increased vulnerability to developing sleep/circadian disturbances or if sleep disturbances lead to an overvaluation of sleep. The ambivalent priority profile tended to be highly educated working-age males with low depression and sleep disturbance but also higher daytime sleep-related impairments. Future research may benefit from exploring whether resolving their ambivalence about sleep might improve their overall sleep health.

Recognition of individual differences in sleep value and sleep value profiles may be important psychological factors in vulnerability/resilience to sleep and circadian rhythm disorders. Sleep value is a complex construct that varies across demographics and is associated with differences in sleep disturbance and daytime functioning. Based on the results of this study, we recommend future studies use the SVIB-2.0 that includes only those items that had strong factor loadings and were confirmed in our factor analysis as valid metrics of sleep value (Table 4). An important next step is to explore how the factors of the SVIB-2.0 and sleep value profiles can inform preventative interventions for sleep and circadian rhythm disorders, as well as efforts to promote sleep health. Additionally, further investigation may be valuable in examining the relationship between sleep value and psychological factors. For example, exploring the relationship that sleep value has with the Dysfunctional Beliefs and Attitudes About Sleep Scale (DBAS) may be helpful in understanding how sleep value can be harnessed to provide effective interventions.

The primary limitation of this study is that the sample was collected exclusively within the United States and was a convenience sample, which may limit generalizability. We strove to include a variety of age, race and sex throughout the continental United States and results across samples are beginning to converge on a consistent pattern of sleep value factors and their associations with demographic, sleep and psychological variables. Another limitation that prevents us from making causal inferences about these results is the cross-sectional nature of the data. While sleep value could conceivably influence thoughts and behaviors that have implications on sleep health, sleep value is also likely influenced by sleep health as well. Ultimately, longitudinal and experimental studies are needed to determine whether sleep value is a factor involved in vulnerability and resilience to sleep loss and circadian misalignment.

In conclusion, this study found evidence for five sleep value factors and uncovered five distinct sleep value profiles. These profiles differ in important ways across demographic, psychological and sleep variables. The presence of individual differences in sleep value and their associations with sleep disturbance and sleep-related impairment provides preliminary evidence for their potential role in vulnerability or resilience toward sleep disturbance. The resulting SVIB-2.0 is a new measure that can be used in research to better understand personal sleep values. This study represents an initial step in identifying patterns of individual differences in sleep value across different factors of sleep value and how these differences may have implications for understanding vulnerability and resilience to sleep loss and circadian misalignment.

Data availability statement. The data is openly available on the community site (https://www.cambridge.org/engage/coe/article-details/67344e14f9980725cf060283?show=item).

Author contributions. **Dustin Sherriff** made substantial contributions to this paper which include the conception and design of the project, acquisition, analysis, and interpretation of the data, and drafting the manuscript. **Samantha Solomon** made substantial contributions to the drafting of the manuscript. **Levi Ward** made substantial contributions to this paper that included the conception and design of the project analysis and interpretation of the data. **Spencer Nielson** made substantial contributions to the drafting of the manuscript. **Chongming Yang** made substantial contributions to analysis and modeling. **Kara M. Duraccio** made substantial contribution to the drafting of the manuscript. **Daniel B. Kay** made substantial contributions to this paper including the conception and design of the project, acquisition, analysis, and interpretation of the data and drafting of the manuscript.

Financial support. This study was funded with internal funds provided by the College of Family Home and Social Science, Department of Psychology, and Generous Donations to Brigham Young University. The undergraduate students, Dustin Sherriff, Bryce Klingonsmith, Danika Calvin and Levi Ward were funded by Experiential Learning Funds (ELF) provided by the Department of Psychology at Brigham Young University.

Competing interests. None.

Ethics statement. This project was approved by the Institutional Review Board at Brigham Young University (IRB# IRB2023-146) Study participants gave informed consent to take part in the study.

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https://doi.org/10.1017/slp.2024.7 Published online by Cambridge University Press