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Sleep and Behavioral Control in Earlier Life Predicted Resilience in Young Adulthood: A Prospective Study of Children of Alcoholics and Controls

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Abstract

Aims—Children of alcoholics (COAs) are at higher risk for developing an alcohol use disorder and substance-related problems than non-COAs. This study examined (i) the relationships between sleep rhythmicity in childhood (aged 3–5) and behavioral control in adolescence (aged 9–14) and (ii) whether sleep rhythmicity and behavioral control predicted resilience in COAs in emerging adulthood (aged 21–26). Resilience was defined as successful adaptation in spite of adversity. Resilience among COAs was operationalized in three different ways (i) absence of alcohol disorder diagnoses, (ii) absence of alcohol and drug related problems, (iii) a continuous latent variable measured by depressive symptoms, work satisfaction and relationship satisfaction.

Design—A prospective, longitudinal study of children assessed from early childhood (ages 3–5) to emerging adulthood (ages 21–26).

Setting—A community study of families at high risk for alcoholism and matched controls conducted in a 4-county area in the Midwest.

Participants—715 children (75% children of alcoholics, 29% female)

Measurement—Data on sleep were gathered by the Dimensions of Temperament Survey (DOTS) and Child Behavior Checklist. Behavioral Control was measured by Child and Adult Q-sort. Substance use data were collected by Drinking and Drug History – Youth form.

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Contributors

This study is a part of the Michigan Longitudinal Study (MLS). Dr. Zucker designed the MLS. All authors contributed to the design of this study. Drs. Wong managed the literature searches, conducted the statistical analyses for the study and wrote the first draft of the manuscript. All authors contributed to and approved the final manuscript.

Conflicts of interest

No authors have any conflicts of interest to report.

Findings—Structural equation modeling analyses indicated that higher rhythmicity of sleep, lower level of tiredness and infrequent sleep difficulties predicted higher behavioral control in adolescence, which in turn predicted two resilience outcomes in young adulthood. Behavioral control significantly mediated the effect of childhood sleep rhythmicity and resilience. No group differences between COAs and controls were found.

Conclusions—Good sleep and higher self-regulation act as resource factors for young adults, regardless of parent alcoholism status.

Keywords

children of alcoholics; sleep; behavioral control; resilience; alcohol use

INTRODUCTION

Children of alcoholics (COAs) are at an elevated risk for developing an alcohol use disorder (AUD) and substance related problems compared with non-COAs (1–3). COAs are also more likely to report depressive symptoms (4–6) and less likely to be academically successful than non-COAs (7, 8), which may affect later job prospect and work satisfaction. Socially, COAs tend to be less competent (9, 10) and report lower relationship satisfaction compared with non-COAs (11–13). However, despite the challenge of having an alcoholic parent, many COAs do not have AUD or any substance-related problems, experience few depressive symptoms and report high work and relationship satisfaction. These COAs are resilient because they show positive adaptation in spite of adversity (14, 15). Understanding factors that lead to resilience in COAs is therefore an important area of research.

Compared to the literature on risk factors associated with the development of alcoholism and alcohol-related problems among COAs, there are far fewer studies on understanding protective factors and resilience (16, 17). Existing studies indicate that child characteristics such as IQ (17), the ability to sustain attention (17), the ability to process negative emotional stimuli effectively (18), having an affectionate temperament (19), an internal locus of control (19) and increased positive affect (8) are associated with resilience among COAs. To our knowledge, no study has examined the relationship between sleep and resilience among children of alcoholics and identified possible mediators of this relationship. The current study addressed this gap.

Recent research found that sleep problems precede the development of alcohol use disorders (20–22). Our work showed that maternal ratings of childhood sleep problems (3–8 years old) prospectively predicted early onset of alcohol and other drug use in adolescence (12–14 years old) as well as number of alcohol- and drug-related problems in emerging adulthood (18–20 years old) ($N=386$) (22–24). In these studies, COAs do not differ from controls on sleep parameters. The effects of sleep on alcohol use were also the same among the two groups. However, one actigraphy study reported that COAs had shorter total sleep time and more motor activity during sleep compared to controls ($N=92$) (25). Two other studies ($Ns=30$ and 25) compared sleep electroencephalogram (EEG) of the two groups found that even though there were no differences on any major sleep variables, COAs had lower NREM delta power than controls, which may reflect a failure of the structures responsible for

protecting sleep (26, 27). It is unclear whether differences found in actigraphy and polysomnography studies are directly related to alcohol use.

Behavioral control is the tendency to express or contain one's impulses, motor responses, and behaviors (28, 29). Research consistently shows that poor behavioral control is associated with an increased risk for substance abuse and problems. A 6-month longitudinal study of 2,270 college students found that self-report of poor behavioral control at Time 1 predicted alcohol abuse at Time 2 (30). Our group reported a longitudinal study of 514 COAs and matched controls showing that interviewer ratings of behavioral control was inversely related to alcohol and other drug use (31). Even though behavioral control is associated with risk of substance-related problems, little has been done to ascertain the role of behavioral control on resilience to substance use outcomes among COAs. The current study addresses this question.

The relationship between sleep and behavioral control in children and adults has been documented in previous studies. Meta-analyses of adults found that sleep deprivation had the greatest negative effect on mood, followed by cognitive tasks and motor behavior (32, 33). Among children, sleep extension was associated with better executive functions and behavioral control in both cross-sectional ($N=77$) (34) and longitudinal studies (22). However, research on the longitudinal relationship between sleep and behavioral control remains scant.

This study aims at extending the current literature by longitudinally examining the relationships among childhood sleep parameters (i.e., rhythmicity and an absence of trouble sleeping), adolescent behavioral control and resilience in emerging adulthood among COAs. Analyses were also conducted among matched controls to ascertain whether similar relationships were present.

METHOD

Study design

The present study presents a subset of data from an ongoing longitudinal study of the development of risk for alcohol and other substance use disorders (35, 36). The larger study recruited a sample of alcoholic men, their partners and their 3–5 year-old sons. Their 3–11 year-old siblings were also invited to participate later. These men were convicted of drunk driving and met the Feighner diagnosis of probable or definite alcoholism. Subsequently, they were administered the Short Michigan Alcohol Screening Test (37), the Diagnostic Interview Schedule Version III (38), and the Drinking and Drug History Questionnaire (39). Those who received a DSM IV alcohol use disorder diagnosis were recruited to the study. A control group of children and families were recruited by a door-to-door canvassing in the neighborhood where the alcoholic families resided. Presence of fetal alcohol syndrome in the target child was an exclusionary criterion (40).

The current sample consists of 715 participants (75% COAs; 29% female). All were Caucasian. Participants and their families received a comprehensive assessment of drinking and drug use, psychiatric symptomatology, physical health and other behavioral measures at

baseline and every 3 years afterward. Participants were ages 3–5 at Time 1 (T1), 6–8 at T2, 9–11 at T3, 12–14 at T4, 15–17 at T5, 18–20 at T6, 21–23 at T7 and 24–26 at T8.

Measures

Sleep rhythmicity and absence of difficulties (ages 3–5, T1)—Sleep rhythmicity and absence of difficulties during childhood were measured by maternal ratings on two items of the Dimensions of Temperament Survey (DOTS) and two items of the Child Behavior Checklist (CBCL) (41). The DOTS items were “gets sleepy at the same time” and “wakes up at the same time” (0=more false, 1=more true). The CBCL items were “having trouble sleeping” and “overtired” (0=not true, 1=sometimes or often true).

Behavioral control (ages 9–17, T3–5)—Behavioral control is defined as the tendency to express or contain one’s impulses, motor responses, and behaviors. It was measured by interviewer ratings using the California Child Q-sort (CCQ) (42) at T3–4 and the California Adult Q-sort at T5. Both instruments consist of 100 statements that portray a variety of different behavioral adaptations. Behavioral control was measured 19 items (43). Examples include “Is reflective; deliberates before speaking or acting,” “Has a rapid personal tempo; reacts and moves quickly” (–). Higher scores indicate higher behavioral control. Cronbach alphas of behavioral control are .86 (T3), .83 (T4) and .72 (T5).

Resilience indicators (ages 21–26, T7–8)—Based on existing literature (1–13), resilience among COAs was operationalized in three different ways (i) absence of alcohol disorder diagnoses, (ii) absence of alcohol and drug related problems, (iii) a continuous latent variable measured by depressive symptoms, work satisfaction and relationship satisfaction.

Absence of alcohol use disorder diagnoses (AUD): AUD diagnoses were measured by the Diagnostic Interview Schedule – Version 4 (DIS-IV) (44). COAs who did not have an AUD diagnoses at ages 21–26 were considered resilient (0=no, 1=yes).

Absence of substance related problems (SRP): Alcohol and other drug-related problems were assessed by the Drinking and other Drug Use History Questionnaire (39). All items in DDHQ-Y have been extensively used in a variety of survey and clinical settings. Two of these items were examined - (i) presence of alcohol-related variables (e.g., binge drinking) and (ii) presence of drug-related problems (e.g., driving under the influence of drugs). Thirty-one problems were listed separately for drinking and drug use (0=no problem; 1=any problem). COAs who did not report any alcohol or other drug use related problems by ages 21–26 were considered resilient.

Depressive symptoms: Depressive symptoms were measured by the Beck Inventory (BDI) (45, 46), a widely used self-report instrument on depressive symptoms that has good reliability and validity. Participants were asked to rate their symptom on a 3-point scale (a higher score=more severe symptom). Cronbach α 's of these items are .90 for T7 and .86 for T8. Scores for the two waves were averaged.

Work satisfaction: Work satisfaction was measured by the Work Satisfaction Questionnaire (WSQ), which used items from a national survey of work satisfaction (Renwick and Lawler, 1978). Three items were analyzed – “Doing my job gives me a good feeling,” “All in all, I am satisfied with my job,” and “In general, I like working where I do.” (Cronbach’s $\alpha = .80$). A mean score was computed.

Relationship satisfaction: Relationship satisfaction with one’s spouse/partner was measured by two items in the Investment Model Scale (47), “I feel very satisfied with our relationship” and “Our relationship makes me very happy.” (Cronbach’s $\alpha = .94$). A mean score was computed using the two items.

We used depressive symptoms, work and relationship satisfaction as indicators of a continuous latent variable to measure resilience.

Parental alcoholism—Parental lifetime alcohol use disorder (abuse or dependence; AUD) when the child was 3–5 years old was assessed by the Short Michigan Alcohol Screening Test (37), the Diagnostic Interview Schedule Version III (38), and the Drinking and Drug History Questionnaire (39). Based on information collected by these instruments, a trained clinician made diagnoses of DSM-IV AUD ($\kappa = .81$). COAs had at least one parent who met lifetime AUD criteria at ages 3–5 (0=control; 1=COA).

Data Analysis

Data were analyzed by Structural Equation Modeling (SEM) using Mplus (48). Resilience outcomes at ages 21–26 were modeled as observed dichotomous variables (absence of AUD and substance-related problems) and a continuous latent variable (measured by depressive symptoms, work and relationship satisfaction). Sleep rhythmicity at ages 3–5 (measured by DOTS items “gets sleepy and wake up at the same time”, CBCL items “trouble sleeping and overtired”) and behavioral control (BC) at ages 9–17 (measured by BC at ages 9–11, 12–14 and 15–17) were modeled as latent variables. The hypothetical model was presented in Figure 1. Multiple group analyses were conducted to test whether the relations among sleep, behavioral control and resilience outcomes were similar in COAs and controls. Gender was used as a covariate to predict resilience due to documented differences in AUD (49), substance-related problems (50) and depression (51). For each outcome, we did a number of model comparisons. We first estimated a more parsimonious model in which all regression paths were constrained to be the same for both groups. Then we estimated more complex models by eliminating one constraint at a time to test for group differences using chi-square tests that are appropriate for categorical outcomes (52). A significant χ^2 test indicated that there was a significant group difference on a regression path.

We used the product-of-coefficients approach to test whether behavioral control in adolescence mediated the relationship between childhood sleep rhythmicity and young adulthood resilient outcomes (53–55). Specifically, we tested whether the 95% asymmetric confidence interval (ACI) of the mediated effect includes 0. The mediator is considered significant at $p < .05$ if the 95% asymmetric ACI does not include 0. When the direct effect of sleep rhythmicity is not significant, we constrained the path at 0 to preserve model parsimony and improve overall model fit.

The effect of having multiple members from the same family on the analysis, also known as design effect (56, 57), was estimated. The design effect is a function of the intra-class correlation (ICC) and cluster (i.e., family in this study) size. The ICCs of resilience outcomes range from .01 to .27. The average cluster size is 1.77. The design effect is 1.28 at the maximum $(1 + (\text{cluster size} - 1) * \text{ICC})$. Based on simulation studies, a design effect of less than 2 indicates that the effect of cluster on analyses is minimal and can therefore be ignored (56, 57). In all analyses, participants were treated as independent subjects.

Missing data were handled by Full Information Maximum Likelihood (FIML) (58, 59). FIML allows all available data to be used and provided unbiased parameter estimates. The amount of missing data on all but one variable ranged from 4% to 48%. Relationship satisfaction has 79% of missing data because some participants did not have a partner/spouse between ages 21–26.

RESULTS

Descriptive statistics of the major variables in the study are presented in Table 1. Behavioral control (BC) variables at different ages were significantly correlated with one another ($r_{9-11 \text{ \& } 12-14} = .40, p < .001$; $r_{9-11 \text{ \& } 15-17} = .37, p < .001$; $r_{12-14 \text{ \& } 15-17} = .39, p < .001$). COAs were more likely than controls to receive an alcohol use disorder diagnosis ($OR = 1.75, p < .05$), to have an alcohol-related problem ($OR = 1.85, p < .01$) or a drug-related problem ($OR = 2.81, p < .001$). Men were more likely than women to have an alcohol use disorder ($OR = 1.95, p < .01$) but not more likely to have alcohol ($OR = 1.27, p = .20$) or drug related problems ($OR = 1.34, p = .15$).

All observed indicators loaded significantly onto the two latent constructs, sleep and behavioral control. The overall model fit statistics of the measurement model were excellent (Table 2).

Resilience indicators

Gender was not a significant covariate in any analyses and was dropped from the final models.

Absence of alcohol use disorder (AUD)—We first tested a model similar to Figure 1 for both COAs and controls. None of the chi-square tests comparing the regression paths for the two groups was significant (Appendix). There was no direct effect of sleep rhythmicity on absence of AUD so the path was constrained to be zero. Childhood sleep rhythmicity predicted lower adolescent behavioral control, which in turn decreased the odds of absence of alcohol disorder diagnosis among all participants. Model fit statistics was excellent (Figure 2).

Absence of substance-related problems—There was no evidence that the relationships among sleep rhythmicity, behavioral control and substance-related problems were different for COAs and controls (Appendix). As sleep rhythmicity did not have a significant direct effect on substance-related problems, we constrained the path to zero to improve overall model fit. Sleep rhythmicity predicted higher behavioral control, which in

turn predicted lower odds of resilience to substance-related problems. Behavioral control significantly mediated the effects of sleep rhythmicity on the outcome. Overall model fit was satisfactory (Figure 3).

Latent construct of resilience (measured by depressive symptoms, work and relationship satisfaction)—No group differences were found (Appendix). Sleep rhythmicity significantly predicted behavioral control but behavioral control did not predict the latent construct. The mediating effect of behavioral control was not significant. Sleep rhythmicity had a significantly positive relationship with the latent construct. The model fit data well. (Figure 4).

DISCUSSION

This is the first study reporting a long-term relationship between sleep, behavioral control, and resilient outcomes among COAs. Recent studies show that childhood sleep problems and rhythmicity predict both onset of substance use as well as substance related problems (22–24, 60–62). However, these studies did not specifically test the relationships between sleep rhythmicity/absence of sleep difficulties and positive adaptation in COAs. They also did not compare whether sleep affects substance use outcomes similarly for at-risk (COAs) and normal (control) samples.

The relationship between sleep problems and poor self-regulation has been documented in both experimental and correlational studies (32–34, 63). However, most studies adopted a cross-sectional or a short-term prospective design. This study showed that sleep rhythmicity had a long-term relationship with higher behavioral control, spanning approximately 15 years. The relationship between sleep and behavioral control may in part, be related to the adverse effects that sleep problems have on affect and cognitive processes. Sleep problems appear to compromise an individual's ability to regulate affect, as well as negatively impact cognitive processes and executive functions (32, 64, 65). The increase in negative affect and impaired cognitive functions as a result of sleep problems may make it difficult for the child to control his/her behavior. This study showed an indirect relationship between sleep rhythmicity and two resilient outcomes (i.e., absence of AUD and substance-related problems) via poor self-regulation.

SEM analyses indicated that the two latent variables, sleep rhythmicity and resilience were significantly associated with one another. Higher sleep rhythmicity (i.e., regular in bedtimes and wake-times, absence of sleep difficulties and tiredness) predicted resilience (i.e., lower depressive symptoms, higher relationship and work satisfaction) in COAs and controls. To our knowledge, this finding is novel. Though previous research has not examined the relationship between sleep parameters and resilience using latent constructs, our findings are consistent with studies examining individual sleep parameters and indicators of resilience. Longitudinal studies show that sleep difficulties are a risk factor for subsequent depression (66, 67). Our study showed that sleep rhythmicity has a positive effect on resilience; one of the indicators of resilience is low depressive symptoms. Future research could systematically examine the prospective relationship between good sleep (e.g., ease to fall asleep, regular sleep schedule, adequate sleep) and mood. Sleep disturbances prospectively predicted

quality of marital relationship among middle-aged and older adults (68). Poor sleep may predict relationship quality and satisfaction via distress and negative emotions (69). Future research could examine whether negative affect and distress partially explain the longitudinal relationship between sleep and relationship satisfaction.

Existing research showed that sleep difficulties and insomnia were associated with lower job satisfaction (70–72), while self-regulation was positively associated with job satisfaction (73–75). However, most studies measured sleep difficulties, self-regulation and job satisfaction simultaneously or in two time points close to one another. Our study extended past research by showing that sleep rhythmicity had a longitudinal relationship with a latent construct of resilience; work satisfaction was an indicator of that construct. Work satisfaction is greatly influenced by the job nature, work environment and advancement opportunities, variables not examined in this study. Future research could examine whether the relationship between sleep rhythmicity and work satisfaction may attenuate after controlling for these variables.

We did not find any differences between COAs and controls in this study. Sleep rhythmicity, absence of sleep difficulty and higher behavioral control appear to be resource factors for all participants, regardless of parental alcoholism status (76). If sleep and behavioral control are indeed related to favorable outcomes in young adults, prevention and intervention programs on substance abuse need to consider the role of sleep and self-regulation operating earlier in the pathway to substance abuse and dependence. Information regarding the importance of having enough sleep and the potentially serious consequences of sleep problems on self-control could be shared with adolescents and young adults. Skills regarding how to maintain good sleep hygiene (e.g., regular bedtime and wake time) and self-control could also be taught. Sleep intervention trials among adolescents, including those who abused substances have shown promising results (77–79).

Several issues should be addressed in future research. First, even though this study, as well as others, reported that sleep predicted behavioral control, the underlying mechanisms explaining this relationship remained unclear. Recent studies suggest that the association between sleep and self-regulatory processes might be partially mediated by the prefrontal cortex (PFC) (64, 80, 81), which regulates affect, attention, and complex cognitive activities (82–84). PFC appears to be affected by prolonged periods of wakefulness (80, 81). Future research could examine brain mechanisms that underlie decreases in self-regulation following sleep deprivation.

Another issue that warrants more research is the longitudinal relationships among sleep, behavioral control and substance use outcomes. Most research to date is cross-sectional, and studies that examine the relationships among these variables over several developmental periods are rare. The current study was one attempt to fill this gap. More work remains to be done to understand how these relationships change over time. Longitudinal studies also offer a unique opportunity to understand the bidirectional relationships among sleep and self-regulation, as well as sleep and substance use, which we know little in current research.

Our study has several limitations. First, our sleep measure is based on maternal ratings of early childhood sleep items in the DOTS and CBCL, which are subject to response and recall bias. Using objective sleep measures such as actigraphy and polysomnography in future research is important. Second, in addition to sleep rhythmicity, future studies need to include more variables of good sleep, e.g., shorter sleep onset latency, the presence of slow wave sleep. Third, numbers of alcoholic and control families, as well as number of boys and girls were unequal. Moreover, our sample of alcoholic and control families was deliberately chosen so that offspring were at the middle-to-high end of the risk continuum for alcohol use disorders. Thus, study results need to be evaluated in lower risk samples and with samples more balanced for the female gender, and also in general population samples. Finally, resilience outcomes in this study primarily focused on the ability to sustain a substance-free adaptation despite an early profile of high risk. Only job and relationship satisfaction variables examined the ability to achieve a positive adaption in early adulthood. Other positive adaptations (e.g., high social support, satisfactory relationships with parents) should be examined in future studies.

In conclusion, this study provides preliminary evidence for the relationship between sleep rhythmicity and resilience. Behavioral control significantly mediated the relationships on several resilience outcomes. Understanding the relationships among sleep, self-regulation and positive adaptation has the potential to contribute directly to the development of substance use disorders.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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HIGHLIGHTS

- Study examined the relationships among sleep (rhythmicity and trouble sleeping) in childhood, behavioral control in adolescence and resilience in children of alcoholics (COAs) in emerging adulthood.
- 715 children participated in a prospective, longitudinal study.
- Higher rhythmicity of sleep, lower level of tiredness and infrequent sleep difficulties predicted higher behavioral control in adolescence, which in turn predicted two resilience outcomes in young adulthood.
- No group differences between COAs and controls were found.
- Good sleep and higher self-regulation act as resource factors for young adults, regardless of parental alcoholism status.

Figure 1. Hypothetical Structural Model

Note. ^aThere are two observed resilience variables (absence of alcohol use disorder and substance-related problems) and one latent resilience variable (measured by depressive symptoms, work and relationship satisfaction.)

Figure 2. Structural Equation Model Predicting Absence of Alcohol Use Disorder (AUD)

Model fit: $\chi^2 (59) = 67.95$, $p = .20$; CFI = .96; TLI = .95; RMSEA = .02

All coefficients listed are unstandardized coefficients and numbers in parentheses are standard errors of the coefficients. Behavioral control was a significant mediator (Indirect effect: .24; 95% asymmetric C.I. = .03 to .53, $p < .05$). The direct effect of sleep rhythmicity was not significant and was constrained to be zero. $*p < .05$.

Figure 3. Structural Equation Model Predicting Absence of Substance-Related Problems (SRP)

Model fit: $\chi^2(46) = 59.14$, $p = .09$; CFI = .94; TLI = .92; RMSEA = .03

All coefficients listed are unstandardized coefficients and numbers in parentheses are standard errors of the coefficients. Behavioral control was a significant mediator (Indirect effect: .25; 95% asymmetric C. I. = .05 to .51, $p < .05$). The direct effect of sleep rhythmicity was not significant and was constrained to be zero. * $p < .05$, *** $p < .001$.

Figure 4. Structural Equation Model Predicting Resilience

Model fit: $\chi^2 (77) = 79.92, p = .38$; CFI = .99; TLI = .98; RMSEA = .01

Behavioral control was not a significant mediator (Indirect effect is $-.18$; 95% asymmetric C.I. = $-.89$ to $.42$, n.s.). Direct effect of sleep rhythmicity is 3.36 . All coefficients listed are unstandardized coefficients and numbers in parentheses are standard errors of the coefficients. $*p < .05$, $**p < .01$.

Table 1

Means and Standard Deviations of Major Variables

	Mean	SD
Gets sleepy at the same time - Ages 3 – 5	75.3%	–
Wakes up at the same time - Ages 3 – 5	71.4%	–
Trouble sleeping - Ages 3 – 5	11.3%	–
Overtired - Ages 3–5	25.6%	–
Behavioral Control - Ages 9 – 11	4.93	1.08
Behavioral Control - Ages 12 – 14	5.18	1.00
Behavioral Control - Ages 15 – 17	4.91	1.06
No AUD - Ages 21 – 26	40.5% (37.5%) ^a	–
No SRP - Ages 21 – 26	25.0% (21.70) ^a	–
Depressive symptoms - Ages 21 – 26	5.39	5.99
Work satisfaction - Ages 21 – 26	5.59	1.07
Relationship satisfaction (standardized) - Ages 21 – 26	–.02	0.86

Note. a Numbers in parentheses are % of children of alcoholics who scored yes.

Table 2

Confirmatory factor analyses of sleep rhythmicity, behavioral control and resilience

Observed indicators	Latent constructs		
	Sleep problems	Behavioral control	Resilience
Gets sleepy at the same time - Ages 3 – 5	.67***	–	
Wakes up at the same time - Ages 3–5	.73***	–	
Trouble sleeping - Ages 3 – 5	-.39*	–	
Overtired - Ages 3–5	-.46**	–	
Behavioral Control - Ages 9 – 11	–	.48***	
Behavioral Control - Ages 12 – 14	–	.50***	
Behavioral Control - Ages 15 – 17	–	.74***	
Depressive symptoms - Ages 21–26			-.54***
Work satisfaction - Ages 21–26			.21**
Relationship satisfaction - Ages 21–26			.38**

Note. Numbers shown are standardized factor loadings.

*
p<.05;**
p<.01;***
p< .001.Model fit: $\chi^2 (77) = 84.68$, $p = .26$; CFI = .96; TLI = .96; RMSEA = .02.