



Research paper

Comparison of Emotional Intelligence and Sleep Problems in Adolescents Girls with Sluggish Cognitive Tempo Disorder Symptoms and Without

Ghaedi, Kimiya ¹; Nemati, Fatemeh *²

1. M. A student in General psychology, psychology department, Faculty of Educational Sciences and Psychology, University of Tabriz, Tabriz, Iran. kimiya7112@gmail.com
2. Corresponding Author: Associate Professor, Faculty of Educational Sciences and Psychology, University of Tabriz, Tabriz, Iran. f.nemati84@gmail.com.

Abstract

The aim of the present research was to compare emotional intelligence and sleep problems in adolescents with Sluggish cognitive tempo disorder symptoms (SCT) and without. The method was ex-post facto, cross-sectional design. The statistical population consisted of all female first school students in Tabriz province. The research sample was 180 students who were selected on the bases of SCT Penny questionnaire in two groups. To collect data, the Siberia and Schering emotional intelligence questionnaire and the Pittsburgh Sleep Quality Index were used. Research data were analyzed through multivariate analysis of variance test. The study found that group of SCT had significantly fewer self-motivation, self-awareness, social consciousness, and social skills, and significantly higher disturbances in sleep quality, sleep efficiency and daily functioning. Therefore, it can be concluded that adolescents with SCT symptoms, compared to normal adolescents, have lower emotional intelligence and more sleep problems.

Keywords: Adolescent, emotional intelligence, sleep problems, sluggish cognitive tempo

Introduction

Recent research indicates that a group of children with attention-deficit characteristics exhibit features referred to as "Sluggish Cognitive Tempo" (Abdolrahimpoor, et al., 2021). prominent researchers have identified key symptoms of SCT, which include; daydreaming, trouble staying awake/alert, mentally foggy/easily confused, stares a lot, spacey, mind is elsewhere, lethargic, under-active, slow-moving/sluggish, doesn't process questions or explanations accurately, drowsy/sleepy appearance, apathetic/withdrawn, lost in thoughts, slow to complete tasks, and lacks initiative/effort fades (Barkley, 2015). SCT is particularly associated with poor sleep quality, sleep duration, and daytime sleepiness (Frederick, et al., 2022) and low sleep quality can serve as a risk factor, leading to decreased cognitive performance, mood disorders, and impaired stress management (Perez-Fuentes, et al., 2019). However, there is almost no study examining emotional intelligence in these individuals (Frederick, et al., 2022). Given what has been said and considering that the correlation between SCT and sleep problems may vary, and also, considering that there is no clear evidence regarding the emotional intelligence status of individuals with SCT disorder, for this reason, the researchers of this study aimed to investigate sleep problems and emotional intelligence in these adolescents in the form of two hypotheses: Adolescents with symptoms of sluggish cognitive tempo disorder and normal adolescents differ

in sleep problems, and Adolescents with symptoms of sluggish cognitive tempo disorder and normal adolescents differ in emotional intelligence; they proceeded to conduct the research.

Method

The current study was cross-sectional in design, employing a retrospective approach. The statistical population included all female students in the first three years of high school (12 to 16 years old) in the Tabriz County during the academic year 2022-2023. According to the statistics provided by the East Azerbaijan Province Department of Education, the number of these students was approximately 40,000. For the current research, sample selection was conducted using a clustered random sampling method among the five districts of Tabriz County. Two districts were randomly chosen from each of these regions, and from each district, two girls' schools were selected randomly. Subsequently, to screen students with signs of cognitive impairment, the Penny SCT questionnaire was used. In the end, a total of 180 participants were selected and placed into two groups of 90 adolescents each: one group with signs of sluggish cognitive tempo and another group of typical normal adolescents. They completed the Siberia and Schering Emotional Intelligence Questionnaires, as well as the Pittsburgh Sleep Quality Index (PSQI). The data were analyzed using SPSS version 20 software and Multivariate Analysis of Variance (MANOVA). Post hoc LSD test was used for pairwise comparisons between the two groups.

Tools

Pittsburgh Sleep Quality Index: This questionnaire was developed in 1989 by Dr. Buysse and colleagues to assess sleep quality. Boyce and colleagues (1989) reported the questionnaire's reliability using a Cronbach's alpha of 0.83. In the present study, a Cronbach's alpha of 0.76 was achieved.

Siberia and Schering emotional intelligence questionnaires: This questionnaire consists of 33 questions. The obtained correlation between individuals' scores on this test and the Coopersmith Self-Esteem Inventory was examined on a sample of 30 people, was significant of $r = 0.63$. In this study, Cronbach's alpha was 0.83.

SCT Questionnaire: This questionnaire was developed by Penny (2007) and consists of 18 questions. The alpha coefficient for the SCT scale is reported to be 0.82. In the current study, Cronbach's alpha was determined to be 0.98.

Results

Table 1 presents descriptive information related to emotional intelligence variables and sleep problems in the examined sample.

Table 1: Descriptive statistics of emotional intelligence subscale scores and sleep problems

Group Variable	SCT		Normal	
	SD	M	SD	M
<u>Emotional intelligence</u>				
self-motivation	4.05	20.53	4.10	21.85
self-awareness	5.41	29.46	5.51	31.18

social consciousness	3.79	18.98	3.50	20.26
self-control	5.77	20.64	6.21	22.13
social skills	3.24	16.16	2.99	17.33
<u>Sleep problems</u>				
subjective sleep quality	0.97	1.55	0.93	1.16
sleep latency	1.93	3.03	2.08	2.72
sleep duration	1.12	1.05	1.02	0.96
sleep efficiency	1.11	1.01	0.95	0.65
sleep disturbance	0.77	1.56	0.71	1.43
use of sleep medication	0.85	0.36	0.68	0.35
daytime dysfunction	0.99	1.61	1.03	1.23

Based on the entries in Table 2, there was a significant difference between the two groups in the subscales of self-motivation ($F = 4.72, P \leq 0.05$), self-awareness ($F = 4.46, P \leq 0.05$), social consciousness ($F = 5.49, P \leq 0.05$), social skills ($F = 6.28, P \leq 0.05$), subjective sleep quality ($F = 7.44, P \leq 0.01$), sleep efficiency ($F = 5.29, P \leq 0.05$) & daytime dysfunction ($F = 6.23, P \leq 0.01$).

Table 2: Summary of the multivariate analysis of variance for the difference between two groups SCT & Normal in the subscales of emotional intelligence and sleep

Source of Change	Dependent Variable	SS	df	MS	F	P
Group	self-motivation	78.67	1	78.67	4.72	0.03
	self-awareness	133.47	1	133.47	4.46	0.03
	social consciousness	73.47	1	73.47	5.49	0.02
	self-control	99.75	1	99.75	2.77	0.10
	social skills	61.25	1	61.25	6.28	0.01
	subjective sleep quality	6.80	1	6.80	7.44	0.01
	sleep latency	4.35	1	4.35	1.07	0.30
	sleep duration	0.35	1	0.35	0.30	0.58
	sleep efficiency	5.68	1	5.68	5.29	0.02
	sleep disturbance	0.80	1	0.80	1.42	0.23
	use of sleep medication	0.01	1	0.01	0.01	0.92
	daytime dysfunction	6.42	1	6.42	6.23	0.01

Discussion and Conclusion

The results indicated that adolescents with SCT symptoms, compared to normal adolescents, had lower emotional intelligence and more sleep problems. Low emotional intelligence in individuals with SCT may be attributed to the cognitive and attentional difficulties associated with the disorder. People with SCT may find it challenging to accurately perceive and understand their own emotions and those of others, leading to lower emotional intelligence scores. As for high sleep problems in individuals with SCT, the cognitive aspects of the disorder, such as difficulty in focusing and maintaining attention, may contribute. These cognitive challenges could affect the ability to relax the mind and transition into restful sleep, potentially leading to sleep disturbances. Based on the results, it is suggested that these findings be used for better planning in improving this disorder in affected individuals. It is also

necessary to pay attention to the age restriction in future research, which faces limitations in generalizability.

References

- Abdolrahim Poor, R., Hashemi Nasrat Abad, T., Pourhadiati, S., & Maleki, M. (2021). A comparison of dimensions of empathy in children with attention-deficit/hyperactivity disorder and children with sluggish cognitive tempo. *Journal of Psychological Sciences*, 20(98), 199-208. (Text in Persian) <http://dorl.net/dor/20.1001.1.17357462.1400.20.98.13.2>
- Barkley, R. A. (2015). Concentration deficit disorder (sluggish cognitive tempo). in R. A. Barkley (Ed.), attention-deficit hyperactivity disorder: a handbook for diagnosis and treatment (pp. 435–452). The Guilford Press. <https://psycnet.apa.org/record/2014-57877-017>
- Fredrick, J. W., Becker, S. P., & Langberg, J. M. (2022). Low school support exacerbates the association between peer difficulties and sluggish cognitive tempo in adolescents. *Journal of Clinical Child & Adolescent Psychology*, 51(6), 1024-103. DOI: [10.1080/15374416.2021.1923021](https://doi.org/10.1080/15374416.2021.1923021)
- O'Hare, K., White, N., Harding, R., Galland, B., Sellbom, M., Shine, B., & Schaughency, E. (2021). Sluggish cognitive tempo and daytime sleepiness mediate relationships between sleep and academic performance. *Journal of Developmental & Behavioral Pediatrics*, 42(8), 637-647. DOI: <https://doi.org/10.1097/DBP.0000000000000948>
- Pérez-Fuentes, M. D. C., Molero Jurado, M. D. M., Simón Márquez, M. D. M., Barragán Martín A. B., & Gázquez Linares, J. J. (2019). Emotional effects of the duration, efficiency, and subjective quality of sleep-in healthcare personnel. *International Journal of Research and Public Health*, 16(19), 3512. <https://doi.org/10.3390/ijerph16193512>

Acknowledgments

We extend our gratitude to everyone who assisted us in conducting this research

Funding

This research did not receive any financial support.

Conflict of Interests

Authors found no conflict of interests.



This article is an open-access article distributed under the terms and conditions of the Creative Commons Attribution-Noncommercial 4.0 International (CC BYNC4.0 license) (<https://creativecommons.org/licenses/by-nc-nd/4.0/>).
