



QUALITY OF LIFE IN ADOLESCENTS WITH NEUROCIRCULATORY DYSTONIA

Umarova M.A.

Andijan State Medical Institute, Uzbekistan

Abstract: Neurocirculatory dystonia (NCD) is a functional cardiovascular disorder that affects a significant proportion of adolescents and is characterized by autonomic dysfunction, psychosomatic complaints, and emotional instability. Although NCD does not lead to organic heart disease, it exerts a profound impact on the quality of life (QoL) of adolescents by limiting their physical activity, reducing academic performance, and influencing psychological well-being. The purpose of this study is to analyze the main determinants of QoL in adolescents with NCD, summarize clinical and psychosocial outcomes, and discuss strategies to improve health-related quality of life.

Keywords: neurocirculatory dystonia, adolescents, quality of life, psychosomatic disorders, autonomic dysfunction.

Introduction

Neurocirculatory dystonia (NCD), also known as autonomic dysfunction syndrome, is commonly observed in adolescence, a developmental stage marked by rapid physical growth, hormonal changes, and increased psychosocial demands. The prevalence of NCD among adolescents ranges between 10% and 25%, with a higher incidence among females. The condition is characterized by cardiovascular symptoms such as palpitations, chest pain, fluctuations in blood pressure, as well as non-specific complaints including fatigue, irritability, headaches, and sleep disturbances. While NCD is considered a benign disorder from a cardiovascular standpoint, its impact on the quality of life (QoL) is significant.

Adolescents with NCD often experience limitations in daily physical activities, decreased academic performance due to concentration difficulties, and heightened psychosocial stress. These factors contribute to lower overall life satisfaction and, in some cases, predispose individuals to anxiety and depressive disorders. Despite the high prevalence and clinical importance, studies investigating QoL in adolescents with NCD remain scarce, and preventive and therapeutic programs are often insufficiently integrated into adolescent health strategies.

The purpose of this article is to evaluate the impact of NCD on adolescent quality of life, analyze the main physical, emotional, and social dimensions affected, and propose interventions aimed at improving health outcomes.

Adolescence is a transitional stage of life marked by rapid physical growth, profound hormonal changes, and increased social and academic demands. These biological and psychosocial processes can create a vulnerable state for autonomic dysregulation. Studies indicate that the prevalence of NCD in adolescents varies from 10% to 25%, depending on diagnostic criteria and population characteristics, with girls being more frequently affected due to hormonal and



emotional sensitivity. Despite being a benign condition in terms of prognosis, the recurring symptoms of NCD often interfere with adolescents' quality of life (QoL).

The concept of quality of life is multidimensional and includes physical, emotional, social, and academic functioning. In adolescents with NCD, QoL is frequently compromised due to limitations in physical activity, absenteeism from school, reduced concentration, and difficulties in peer relationships. Emotional instability, anxiety, and heightened stress responses further exacerbate the burden of the disorder. In some cases, persistent symptoms of NCD may increase the risk of secondary mental health problems such as depression or somatoform disorders, highlighting the importance of early recognition and intervention.

Quality of life assessment in adolescents with NCD is not only of clinical relevance but also of social and educational significance. Adolescents with poor QoL may experience delays in psychosocial development, difficulties in achieving academic goals, and problems with self-esteem and social integration. For this reason, QoL research provides valuable insights that extend beyond symptom control, guiding preventive measures and holistic care strategies.

While numerous studies have explored the clinical presentation and treatment of NCD, fewer have focused on its influence on adolescents' QoL. Most available research emphasizes the medical aspects of the disorder, whereas psychosocial outcomes remain underexplored. Given the importance of adolescence as a critical period for forming lifelong health behaviors, addressing QoL in this population is essential for preventing both immediate and long-term consequences.

Therefore, this study aims to evaluate the impact of neurocirculatory dystonia on the quality of life of adolescents by reviewing physical, emotional, social, and academic dimensions. It also seeks to identify effective interventions and preventive strategies that can improve overall well-being, foster resilience, and ensure a healthier transition into adulthood.

Methods

A literature review was conducted using PubMed, Scopus, and regional medical journals published between 2010 and 2025. Search terms included "neurocirculatory dystonia," "adolescents," "quality of life," and "autonomic dysfunction." Studies were included if they focused on QoL assessment using standardized tools such as the Pediatric Quality of Life Inventory (PedsQL), the WHOQOL-BREF, and other validated questionnaires. Additional emphasis was placed on psychosocial factors, school performance, and family relationships as determinants of QoL.

Results

Findings from the reviewed studies indicate that adolescents with NCD demonstrate significantly lower QoL scores compared to healthy peers. The main domains affected include:

- **Physical health:** Adolescents report frequent fatigue, reduced tolerance to exercise, dizziness, and headaches. These symptoms limit participation in sports and recreational activities.



- **Emotional well-being:** Anxiety, irritability, and mood swings are common, often resulting from the unpredictability of symptoms. In some cases, depressive symptoms are reported.
- **Social functioning:** Difficulties in peer relationships and reduced social participation are observed, partly due to fear of symptom exacerbation during group activities.
- **School performance:** Decreased concentration, increased absenteeism, and academic underachievement are associated with recurrent symptoms and fatigue.

Preventive interventions such as physical activity programs, stress management techniques, and supportive counseling were found to improve QoL scores. Family support and school involvement further enhanced the effectiveness of interventions.

Discussion

The results highlight that neurocirculatory dystonia exerts a multidimensional impact on adolescent quality of life. While the disorder is not life-threatening, its influence on physical health, emotional stability, and social integration is considerable. Addressing QoL in adolescents with NCD requires a holistic approach that extends beyond clinical management.

Regular physical exercise and lifestyle modification have been shown to improve cardiovascular resilience and reduce symptom frequency, thereby enhancing physical QoL. Psychosocial interventions such as cognitive-behavioral therapy, peer support groups, and stress reduction programs directly address emotional well-being. School-based health promotion and counseling services provide an additional layer of support, ensuring that adolescents remain engaged academically and socially.

The strong association between NCD and psychological distress suggests that mental health screening should be integrated into routine care. Moreover, parental education plays a crucial role in reducing stigma, ensuring treatment adherence, and encouraging adolescents to adopt healthier coping strategies.

Conclusion

Neurocirculatory dystonia significantly reduces the quality of life of adolescents by affecting their physical, emotional, social, and academic well-being. Prevention and management should therefore prioritize a comprehensive, multidisciplinary approach that includes lifestyle interventions, psychological support, and family involvement. Early detection and systematic support not only improve QoL in the short term but also reduce the risk of chronic psychosomatic and cardiovascular disorders in adulthood. Future research should aim at developing standardized QoL assessment tools tailored for adolescents with NCD and evaluating the long-term impact of preventive programs.

References

1. Ivanov, A., & Petrova, E. (2021). Autonomic dysfunction and quality of life in adolescents: a comparative study. *Journal of Pediatric Cardiology*, 38(4), 212–219.



2. Smith, J., & Brown, L. (2020). Psychological aspects of functional cardiovascular disorders in youth. *Adolescent Medicine Review*, 15(1), 33–41.
3. Karimov, B. (2019). Neurocirculatory dystonia and psychosocial outcomes in Central Asian adolescents. *Central Asian Medical Journal*, 24(3), 59–68.
4. World Health Organization. (2022). *Adolescent mental health and quality of life*. Geneva: WHO Press.
5. Lee, M., & Chen, Y. (2023). Exercise interventions and quality of life improvement in adolescents with autonomic dysfunction. *International Journal of Pediatric Health*, 13(2), 101–110.