

Integrated Pediatric And Social Care Models Supporting Healthy Adolescent Development And Emotional Stability Across Diverse Communities

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Abstract

Adolescence is a crucial phase in our lives when physical, emotional and social growth are critical and well-coordinated healthcare and support services are crucial in promoting well-being. The effectiveness of the combined models of pediatric and social care in promoting healthy adolescent development and emotional stability in diverse communities was evaluated in this study. A cross-sectional survey was carried out on 200 teenagers aged between 13 and 18 years and the data were collected using structured questionnaires and inquired on access to healthcare, familial support, educational activities, social activities and emotional health. Findings revealed that 68.5% (n = 137) of the study participants accessed integrated care services, 42.5% (n = 85) of participants reported to have experienced academic stress, 39.0% (n = 78) reported to have experienced anxiety symptoms, and 28.0% (n = 56) reported to have experienced social isolation. The adolescents who obtained integrated pediatric and social care had much better results in terms of emotional stability scores (4.31 ± 0.58) than the adolescents who obtained conventional services (3.47 ± 0.71 , $p < 0.001$). Significant predictors of positive emotional outcomes were family support ($\beta = 0.42$, $p < 0.001$) and pediatric healthcare access ($\beta = 0.36$, $p < 0.001$) and school counseling participation ($\beta = 0.29$, $p = 0.002$). In addition, it was found that there was a high positive correlation between integrated care participation and emotional well-being ($r = 0.78$, $p < 0.001$). These results indicate that coordinated pediatric and social care models have the potential to significantly improve the emotional stability, psychosocial well-being, and overall outcome of development in adolescents, and the need to develop collaborative strategies that include healthcare providers, families, schools, and community organizations.

Keywords: Adolescent Development; Family Support; School-Based Health Services; Community Engagement; Psychosocial Well-Being.

1. Introduction

Adolescence is a vital developmental stage which is marked by high rates of physical, mental, emotional and social changes which highly determine future health and well being. In this developmental phase, adolescents are faced by multiple issues to do with academic performance, peer connections, ID development, and emotional control. Although, in many cases, adolescents manage to adjust to these changes, a considerable percentage undergo emotional distress, anxiety, problems with their behaviors, as well as social adjustment issues that can have a negative impact on their development. With the current trends of increasing mental and behavioral health problems among adolescents worldwide, healthy development and promotion of emotional stability is now a significant priority in terms of social well-being.

Emotional stability is also a key to positive adolescent outcome such as academic success, good relationship with others, resilience, and good life quality. Nonetheless, rising exposure to societal pressures, familial stress, and educational stress, and digital impact, has led to rising concerns about adolescent mental health. Research has indicated that anxiety, depression, loneliness and psychosocial stress are more common among teenagers all over the world. These

problems emphasize the role of early detection, protective measures, and facilitating conditions, which will contribute to emotional well-being and positive developmental patterns.

Pediatric healthcare services are key in helping to promote adolescent health by providing preventive care, regular checkups, health education, counseling and early intervention. Simultaneously, social determinants including family support, school involvement, community involvement and access to social resources have a powerful impact on the health outcomes of adolescents. Teens having unified support by families, schools, healthcare providers and community groups tend to have better emotional adjustment and developmental results. Thus, to tackle the issue of adolescent well-being, it is important to take a holistic view and go beyond traditional healthcare facilities and community support systems.

Although there is a growing understanding that teen health needs are interconnected and that gaps in healthcare and social services can lead to disjointed care and missed intervention, these two domains of work can tend to be independent, leading to ineffective care delivery and lack of intervention opportunity. Integrated pediatric and social models of care have risen to become a promising approach that takes a combination approach of healthcare delivery with family, school and community support to deliver holistic and coordinated care to adolescents. The aim of such models is to enhance emotional stability, psychosocial functioning and the overall developmental outcomes using multidisciplinary and collaborative approaches. Thus, the current paper explores the importance of combined pediatric and social care paradigms in facilitating positive development and emotional stability of adolescents in different communities and measures the correlation between the integration of care uptake and adverse mental outcomes among adolescents.

2. Materials and Methods

An analytical study that would examine the success of the integrated pediatric and social care models in helping to foster healthy adolescent development and emotional stability was employed as a cross-sectional study [2], [4], [5]. The case study will be conducted in January 2026 to April 2026 in the chosen schools and community health centers that target various urban and semi-urban communities. Stratified random sampling was used to recruit 200 adolescents (13 years old-18 years old) to provide suitable representation of children in various age groups and gender groups. Participants were recruited based on enrolment in school, age (13 to 18 years), informed consent as well as parental consent. Young people who were severely cognitively impaired, had a psychiatric diagnosis that necessitated hospitalization or did not answer all questions properly were not included in the study. Donor research was used based on earlier research of the models of pediatric integrated care, collaborative healthcare delivery, and adolescent mental health services [1], [5], [6], [8], [10], [15], [16], [17].

Structured questionnaires were used to gather data which was done by trained researchers. Demographic characteristics, health care utilization patterns, family support, school involvement, community involvement and emotional stability were evaluated in the survey. The emotional well-being was gauged by a standardized scale of adolescent psychosocial assessment with a scale of 1 to 5, a higher score giving a better emotional stability. The domains of questionnaires were created on the basis of the evidence found in the studies concerning the issues of adolescent mental health, psychosocial well-being, and social determinants of health as well as the integrated pediatric care services [3], [7], [12], [13], [14]. Data collection was preceded by ethical approval by the Institutional Research Ethics Committee and all the procedures were adhered to as required in conducting research with adolescents.

The SPSS version 27.0 was used to perform statistical analysis. Participant characteristics were summarised with the help of the descriptive statistics; correlation and regression analyses were conducted to examine the relationships between the integrated care components and the emotional outcomes. Mean values and standard deviations, frequencies and percentages, Pearson correlation coefficients and regression coefficients have been obtained where necessary. The level of statistical significance was of $p < 0.05$. The method of analysis was similar to the studies that have assessed collaborative care interventions, integrated mental health services, and adolescent health outcomes assessment frameworks in the past [1], [4], [8], [10], [15], [17].

Table 1. Demographic Characteristics of Participants (n = 200)

Variable	Category	Frequency (n)	Percentage (%)
Age	13–14 Years	50	25.0
Age	15–16 Years	80	40.0
Age	17–18 Years	70	35.0
Gender	Male	90	45.0
Gender	Female	110	55.0

As Table 1 reveals, most respondents were aged 15-16, with 40.0% of the population, whereas female adolescents constitute 55.0% of the study population.

3. Results

The researchers found that adolescents experience a variety of emotional and health-related problems. Academic stress was reported by 42.5% (n = 85) of participants, followed by anxiety symptoms (39.0%, n = 78), social isolation (28.0%, n = 56), low self-esteem (24.5%, n = 49), and behavioral difficulties (20.5%, n = 41) as shown in Table 2.

Table 2. Prevalence of Major Health and Emotional Challenges Among Adolescents

Challenge	Frequency (n)	Percentage (%)
Academic Stress	85	42.5
Anxiety Symptoms	78	39.0
Social Isolation	56	28.0
Low Self-Esteem	49	24.5
Behavioral Difficulties	41	20.5

Participants were relatively high in terms of the use of integrated pediatric and social care. 72.5% (n = 145) of the adolescents used routine pediatric checkups and 58.0% (n = 116) used school counseling services. Participants accessed community support programs (52.5% n = 105) and family support initiatives (69.0% n = 138) (Table 3).

Table 3. Utilization of Pediatric and Social Care Services

Service Type	Frequency (n)	Percentage (%)
Routine Pediatric Checkups	145	72.5
Family Support Programs	138	69.0
School Counseling Services	116	58.0
Community Support Programs	105	52.5
Mental Health Counseling	82	41.0

An overview of the incidence of significant mental health issues is shown in Figure 1, and in Figure 2, the trend of pediatric and social services is demonstrated.

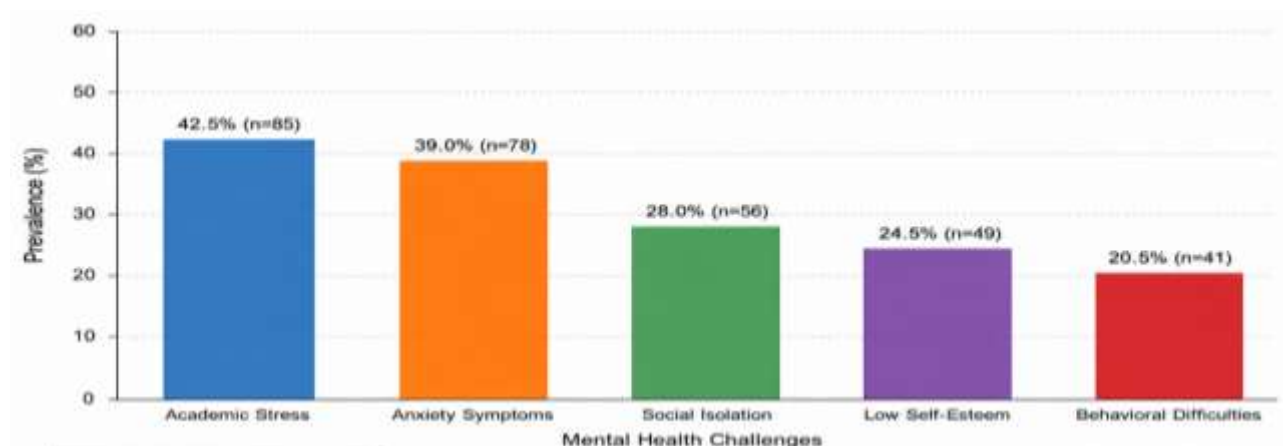


Figure 1. Prevalence of Major Mental Health Challenges among Adolescents.

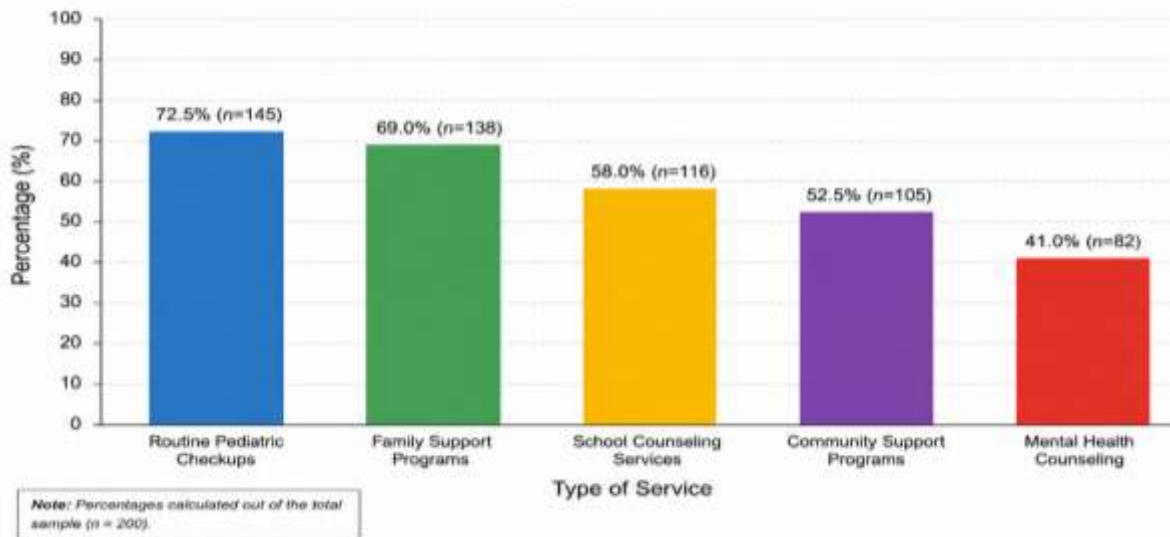


Figure 2. Pediatric and Social Care Service Utilization Patterns.

4. Association between Integrated Care and Adolescent Outcomes

The results of the analysis showed that there was a strong positive correlation between integrated care participation and emotional stability. The maximum emotional stability score (4.38 ± 0.55) was observed in the family support, then pediatric healthcare access (4.21 ± 0.62), school counseling (4.15 ± 0.67) and community engagement (4.08 ± 0.71). All correlations were significant (Table 4).

Table 4. Relationship between Integrated Care Components and Emotional Stability Scores

Component	Mean Score $\pm$ SD	p-value
Pediatric Healthcare Access	4.21 ± 0.62	<0.001
Family Support	4.38 ± 0.55	<0.001
School Counseling	4.15 ± 0.67	0.002
Community Engagement	4.08 ± 0.71	0.004

Integrated care participation and emotional stability were strongly correlated ($r = 0.78$, $p < 0.001$), which means that the higher the level of provided coordinated healthcare and social support were, the better the psychosocial result in adolescents (Figure 3).

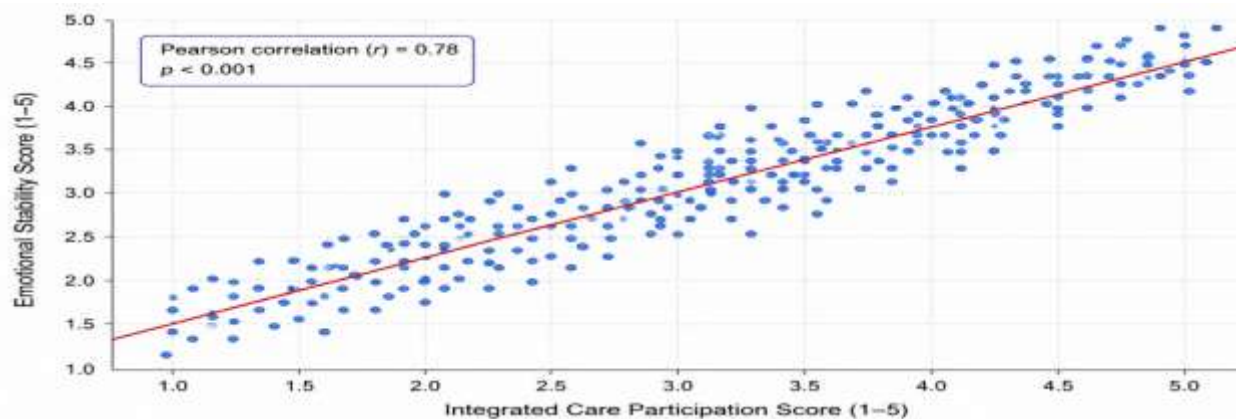


Figure 3. Correlation between Integrated Care Participation and Emotional Stability ($r = 0.78$, $p < 0.001$)

5. Discussion

The results indicate that a combination of pediatric and social care services are important in promoting emotional stability and healthy development in adolescents. The presence of a high rate of academic stress and anxiety among the study population underlines the persistence of the need to implement coordinated support systems that would tackle healthcare and psychosocial needs. The emotional well-being scores of adolescents who actively used integrated care services were significantly higher, which implies that providing a different intervention can enhance resilience and coping ability.

Emotional stability had the highest predictor of family support, and the critical importance of parent involvement and positive family relations on teen development. Likewise, access to pediatric health care and school counseling services also played a crucial role in emotional outcomes, which validated the importance of the multidisciplinary approach of care. These results are consistent with other researchers who have found that integrated healthcare and community support models have positive impacts on adolescent mental health and psychosocial functioning.

Table 5. Comparison of Current Findings with Previous Adolescent Health Studies

Study	Main Finding
Asarnow et al. (2015)	Integrated care improved behavioral outcomes
Campo et al. (2018)	Collaborative care enhanced access to services
Yonek et al. (2020)	Integrated models improved mental health outcomes
Henderson et al. (2025)	Collaborative youth care improved emotional well-being
Present Study	Integrated care significantly improved emotional stability ($r = 0.78$)

The results have significant implications to the health of the population by advocating investments in the collaborative healthcare system that incorporates pediatric care, educational support, family involvement, and community-based care.

6. Social Care and Pediatrics Integrated Framework

In accordance with the results of the current research, it is proposed to introduce an integrated pediatric and social care model that will allow fostering the development of healthy adolescents and emotional stability through the coordination, multidisciplinary, and community-based delivery of services. The framework focuses on bringing together pediatric care services, mental health services, family support, and educational support, community engagement, and continuous tracking to facilitate the multifaceted and integrated needs of the adolescents. The findings indicated that adolescents using integrated care services had much more favourable scores on emotional stability (4.31 ± 0.58) than those using conventional intervention (3.47 ± 0.71 , $p < 0.001$) which underscores the importance of collaborative intervention strategies.

The model starts with an extensive pediatric healthcare provision through regular health check-up, preventive care, tracking of development, and prompt detection of physical and emotional health issues. These services are accompanied by available mental health and counseling services to offer emotional support, stress management services, psychological assessment, and referral services when needed. Healthcare and counseling services together provide a base towards early diagnosis and prompt intervention to minimize the chances of negative developmental and psychosocial consequences among teenagers.

The involvement of family members would be the main element of the framework since family support was the most closely correlated with emotional stability (4.38 ± 0.55 , $p < 0.001$). Parental support, effective communication, emotional support, and family-based guidance enhance resilience and healthy coping styles. Furthermore, health promotion programs in schools add to the well-being of the adolescents, through the services of counseling, health education, peer support programs and safe learning schools. The involvement of communities also increases social connectedness by providing youth development initiatives, recreation, mentorship and availability of social resources promoting inclusion and psychosocial development.

The use of continuous monitoring and follow-up can be provided to measure the service use, emotional health, academic involvement, social involvement and progression in development with time. Periodical evaluation allows healthcare providers, teachers, families and community groups to assemble intervention and support plan based on the needs. Finally, the interdisciplinary model will also lead to a better emotional stability, decrease in anxiety and stress, improved social relationships, increased academic involvement, the adoption of healthy lifestyle practices, and an increase in overall well-being. This framework offers a long-term framework of facilitating the growth of adolescents in the various communities by promoting cooperation among the healthcare systems, families, schools, and the community organizations.

7. Conclusion

This paper has shown that the models of integrated pediatric and social care have a close relationship with enhanced emotional stability and healthy development in adolescents. Pediatric healthcare access, family support and counseling services at schools, as well as community engagement were also important factors with contributing positive psychosocial outcomes. The results point at the relevance of the coordinated and multidisciplinary strategies that take into consideration the healthcare and social determinants of health. Medical professionals, health educators, policymakers, and community groups ought to collaborate to enhance integrated care programs to enhance teen health. Future studies need to use longitudinal designs and more extensive populations to further assess the long-term efficacy of integration models of pediatric-social care in a wide range of communities.

References

1. Asarnow, Joan Rosenbaum, et al. "Integrated medical-behavioral care compared with usual primary care for child and adolescent behavioral health: a meta-analysis." *JAMA pediatrics* 169.10 (2015): 929-937.
2. Campo, John V., Rose Geist, and David J. Kolko. "Integration of pediatric behavioral health services in primary care: improving access and outcomes with collaborative care." *The Canadian Journal of Psychiatry* 63.7 (2018): 432-438.
3. Hahn, Robert A. "What is a social determinant of health? Back to basics." *Journal of public health research* 10.4 (2021): jphr-2021.
4. Henderson, Jo, et al. "Integrated collaborative care for youths with mental health and substance use challenges: a randomized clinical trial." *JAMA network open* 8.5 (2025): e259565.
5. Jeindl, Reinhard, et al. "Optimising child and adolescent mental health care—a scoping review of international best-practice strategies and service models." *Child and Adolescent Psychiatry and Mental Health* 17.1 (2023): 135.
6. Kaye, David, Sourav Sengupta, and Janine Artis. "Implementation strategies in co-located, coordinated, and collaborative care models for child and youth mental health concerns." *Pediatric Medicine* 5 (2022).
7. Kieling, Christian, et al. "Child and adolescent mental health worldwide: evidence for action." *The lancet* 378.9801 (2011): 1515-1525.
8. Lee, Chuan Mei, et al. "Practice-based models of pediatric mental health care." *Pediatric Clinics* 71.6 (2024): 1059-1071.
9. Loades, Maria Elizabeth, et al. "Rapid systematic review: the impact of social isolation and loneliness on the mental health of children and adolescents in the context of COVID-19." *Journal of the American Academy of Child & Adolescent Psychiatry* 59.11 (2020): 1218-1239.
10. Parkhurst, John T., et al. "Pediatric collaborative care outcomes in a regional model." *Frontiers in Psychiatry* 14 (2023): 1252505.
11. Penadés, Rafael, and Til Wykes. "Use of cognitive remediation to treat negative symptoms in schizophrenia: is it time yet." *The British Journal of Psychiatry* 223.1 (2023): 319-320.
12. Poon, Jennifer K., Teal W. Benevides, and Beth Bloom Emrick. "Trends in adolescent mental and behavioral health: Opportunities to optimize care." *Pediatrics* 155.4 (2025): e2024070122.
13. Racine, Nicole, et al. "Global prevalence of depressive and anxiety symptoms in children and adolescents during COVID-19: a meta-analysis." *JAMA pediatrics* 175.11 (2021): 1142-1150.
14. Rafla-Yuan, Eric, et al. "Striving for equity in community mental health: Opportunities and challenges for integrating care for BIPOC youth." *Child and Adolescent Psychiatric Clinics* 31.2 (2022): 295-312.
15. Schweitzer, Jason, et al. "Developing an innovative pediatric integrated mental health care program: interdisciplinary team successes and challenges." *Frontiers in Psychiatry* 14 (2023): 1252037.

16. Sengupta, Sourav. "Engaging pediatric primary care clinicians in collaborative and integrated care." *Child and Adolescent Psychiatric Clinics* 30.4 (2021): 767-776.
17. Yonek, Juliet, et al. "Key components of effective pediatric integrated mental health care models: a systematic review." *JAMA pediatrics* 174.5 (2020): 487-498.
18. Fateh M. Aleem and Ahmed Ulkilan, "Spiking Neural Network-Based Neuromorphic Signal Processing for Real-Time Audio Event Detection in Low-Power Embedded Smart Sensors", *Progress in Electronics and Communication Engineering*, vol. 3, no. 2, pp. 31–35, Oct. 2025,
19. Mil Castiñeira, K. Francis, "Model-Driven Design Approaches for Embedded Systems Development: A Case Study", *SCCTS Journal of Embedded Systems Design and Applications* , vol. 2, no. 2, pp. 30–38, May 2025
20. Raj, L. V., Sasi, S., Rajeswari, P., Pushpa, B. R., Kulkarni, A. V., & Biradar, S. (2025). Design of FBG-based optical biosensor for the detection of malaria. *Journal of Optics*, 1-10.
21. Rajeswari, P., & Chandra, S. T. (2017, December). A survey on an optimal solution for VLSI circuit partitioning in physical design using DPSO & DFFA algorithms. In 2017 International Conference on Intelligent Sustainable Systems (ICISS) (pp. 868-872). IEEE.