Empathy Powered Pairing: A Trauma-Informed Pairing Algorithm for Traumatized Youth

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Approximately 1 in 4 adolescents experience trauma by age 16, with even greater prevalence among high-risk groups such as Native American, Alaskan Native, African American, and multi-racial youth (PubMed Central, NIMH & BBBS). Adolescents who have been exposed to trauma, especially those with serious emotional disturbance, are at greater risk for negative educational, psychological, and socio-economic outcomes, including increased suicidal thoughts and attempts (NIMH). This project proposes a data-driven mentor-mentee matching system that pairs trauma-exposed children with mentors who have successfully overcome the same traumatic experiences. The algorithm considers personal background, resilience, cultural heritage, coping styles, and personality to enable emotional healing and reduce long-term risk. Due to ethical and practical concerns, especially safety and consent concerns, the initial research phase used 1,000 simulated participants. They were matched into 500 pairs with 75% to 100% compatibility scores, then put through a 12-month simulation. Real-life variables such as personal setbacks, dropouts, and positive meeting experiences were included. Results showed that trauma-informed, well-matched pairs had engagement rates close to 80%, or nearly double the 42% in standard mentoring programs. Mock surveys, well-being measures, and interview responses quantified improvements in trust, engagement, and resilience. Results align with existing research and with national data that 82% of youth in the System of Care—a Children's Mental Health Initiative (CMHI) program for youth with serious emotional disturbances—have experienced trauma (Hagler et al., 2024). Algorithm refinement, AI feedback analysis, and scalability testing are the next steps for national deployment.

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