

# USAGE AND RETENTION IN A SMARTPHONE-BASED MENTAL HEALTH INTERVENTION FOR K12 STUDENTS: NEOLTH PROOF-OF-CONCEPT STUDY

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## 01. INTRODUCTION

The STEMSEL project was developed to expand access to digital mental health tools in Florida schools. The goal of this study was to explore the feasibility of implementing Neolth, a mental health digital application for students, in a K-12 classroom, including the ability to escalate crisis situations to school staff. Specifically, we assessed the level of engagement (the amount of Neolth logins and duration of sessions) and the impact on emotional well-being.

## 02. INCLUSION CRITERIA

Three Florida K-12 schools participated in STEMSEL during the 2022- 2023 academic year. Students aged 11 years and above, with English language proficiency, who had parental consent and student assent were included.

## 03. METHODS

Students self-reported symptoms on Neolth, which the app used to create individualized mental health plans with a practice schedule of guided activities. Main outcomes included retention over time, average duration and frequency of logins, change in stress levels as measured with the 4-item Perceived Stress Scale (PSS-4), and ability to identify and triage crisis situations.

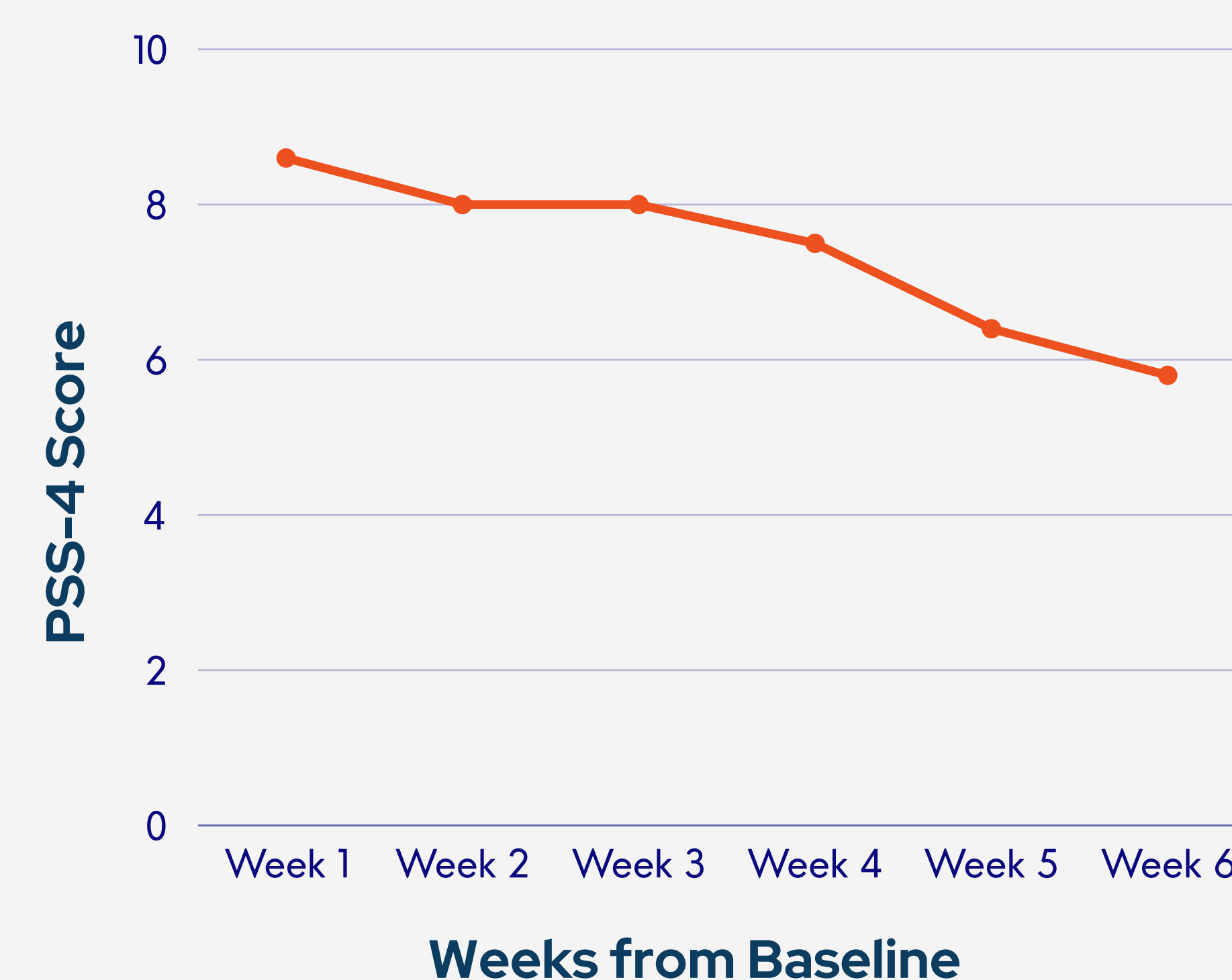
## MAIN FINDINGS: RETENTION 25X GREATER THAN INDUSTRY STANDARD FOR MENTAL HEALTH APPS

Neolth demonstrated 30-day retention at 82.2%, surpassing the industry standard of 3.3% (Baumel et al., 2019) by a margin of 25 times. There was an average of 30 logins per student with a duration of 15 minutes per login (N=60 students), with one student accumulating a total of 1,432 minutes on Neolth. A noteworthy 53.4% of students qualified as 'superusers,' accessing Neolth 30 or more times.

82.2%  
30-Day Retention



Stress level, as measured with the PSS-4 decreased 32.5% from Week 1 (M=8.6, SD=2.5), to Week 6 (M=5.8, SD=2.2),  $p < 0.00$



“ I can respond by finding time to talk to whoever my focus is on and let them know how I feel as best I can that way in the future if I'm struggling we can talk it out better. ”  
-Student Feedback

## 04. HEALTH OUTCOMES

The average age of students was 15.51 years (SD=2.27), 26 identified as male (57.7%), and 28 identified as a racial/ethnic minority (62.2%). One-way ANOVA analyses demonstrated stress levels significantly decreased over time,  $F(5, 150) = 4.36$ ,  $p = .0009$ , with Bonferroni post-hoc tests revealing PSS-4 score was significantly lower than baseline by the fourth weekly check in.

## 05. CRISIS TRIAGE

In 20 instances, a student's data was flagged by Neolth's AI system for review due to potential adverse event (defined as possible homicidal or suicidal thoughts). The time period from app identification to clinician review and school notification was approximately 30 minutes.

## 06. CONCLUSIONS

Findings highlight a high-level of sustained student engagement after initial download. This high retention could be attributed to Neolth's youth-focused design, integration of behavioral science principles in product development, or active involvement of school staff and parents in program enrollment and implementation. Neolth's AI was able to notify school staff of safety concerns within minutes to allow for immediate intervention. Including an AI-based crisis monitoring system within self-guided apps may be a feasible way to integrate Tier 1 educational programs with Tier 2 & 3 clinical services.