

DAREECHA: A SCHOOL-BASED ZERO SUICIDE IMPLEMENTATION MODEL FOR SUICIDE RISK IDENTIFICATION AND MITIGATION AMONG ADOLESCENTS IN GHIZER DISTRICT, GILGIT-BALTISTAN, PAKISTAN

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INTRODUCTION

Ghizer district has seen a sharp rise in youth suicide; police reports from 2006 to 2017 record **173** suicide deaths, with students accounting for half. National surveillance is absent, mental health services are scarce, and no Zero Suicide implementation has been reported in South Asia, especially in a school setting. This study adapted the Zero Suicide model for schools in a remote, low-resource district.

METHODS

• Implementation research using a mixed methods design to assess feasibility and acceptability.

• Stratified random selection of **10 high schools** and **5 colleges**.

• Eligible students: **1,928; 1,301** were **screened**.

• Sample mean age: 16.12 years (SD 1.65); 838 female (64.4%) and 463 male (35.6%).

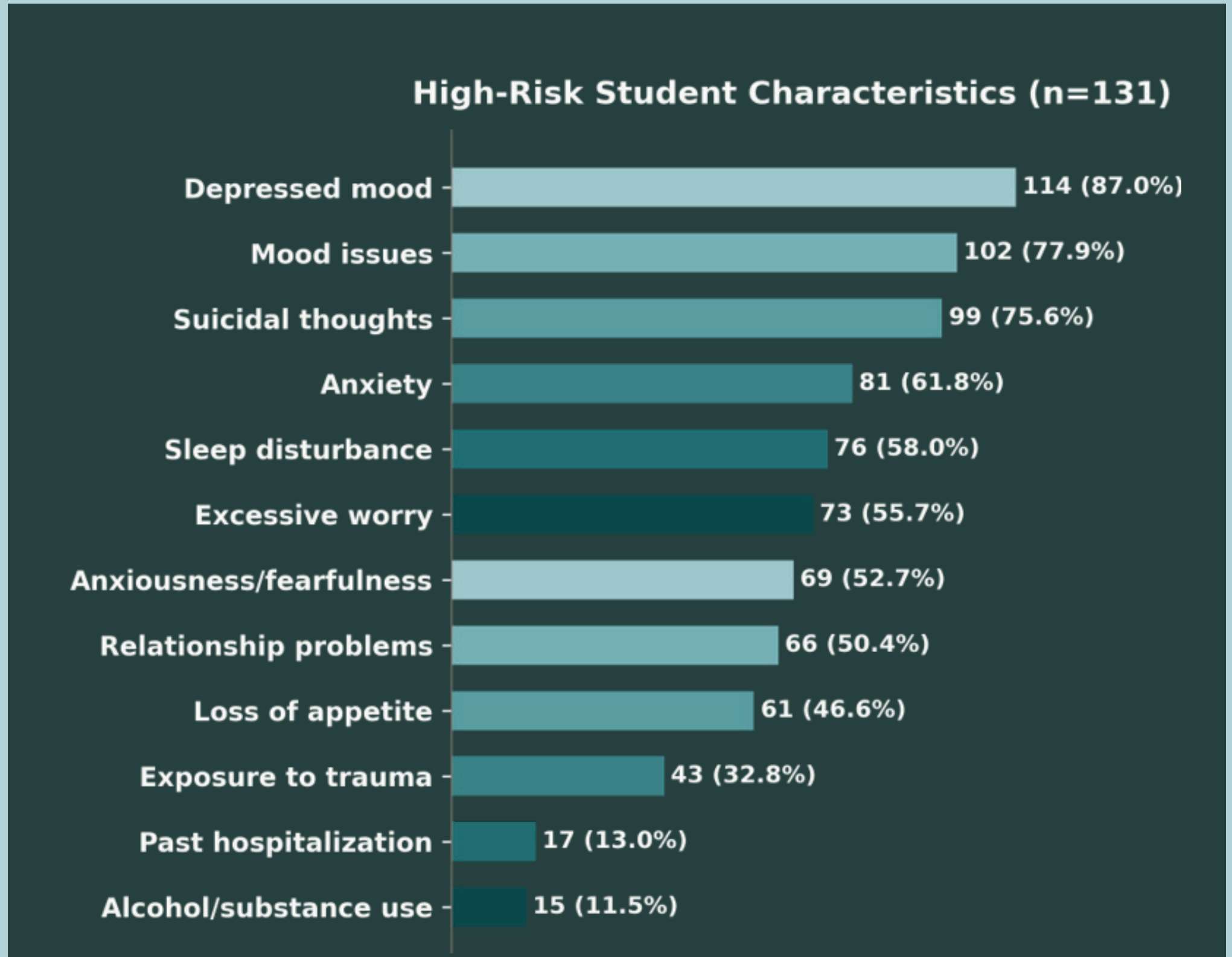
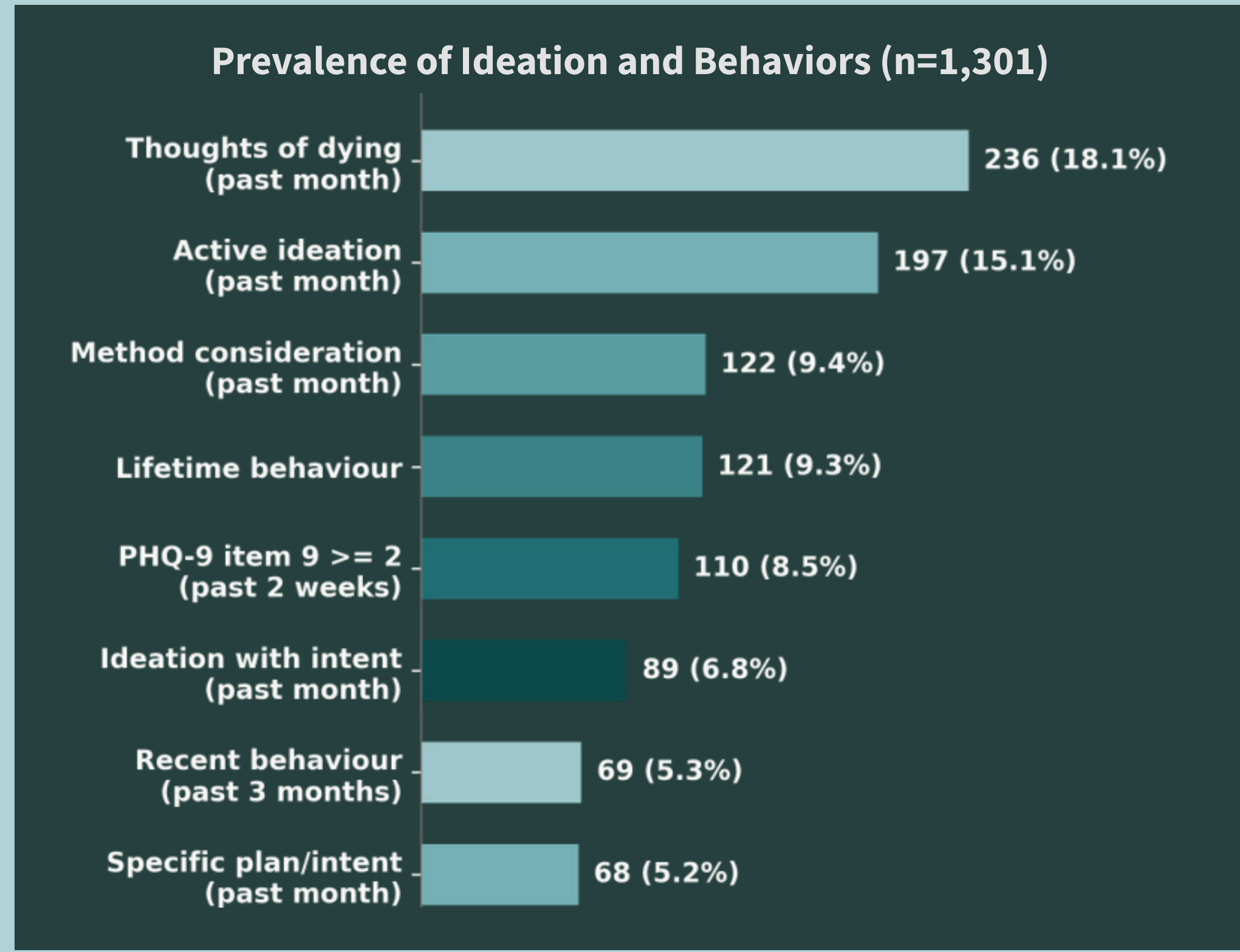
• Screening administered by locally recruited, Shina-speaking Mental Health Assessors (MHAs).

• Instruments: PHQ-9 and the Columbia-Suicide Severity Rating Scale (C-SSRS).

• Workforce capacity built: trained **20 MHAs**, **12 community volunteers**, and **50 clinical psychologists**.

• Clinical care was delivered **remotely by trained clinical psychologists**.

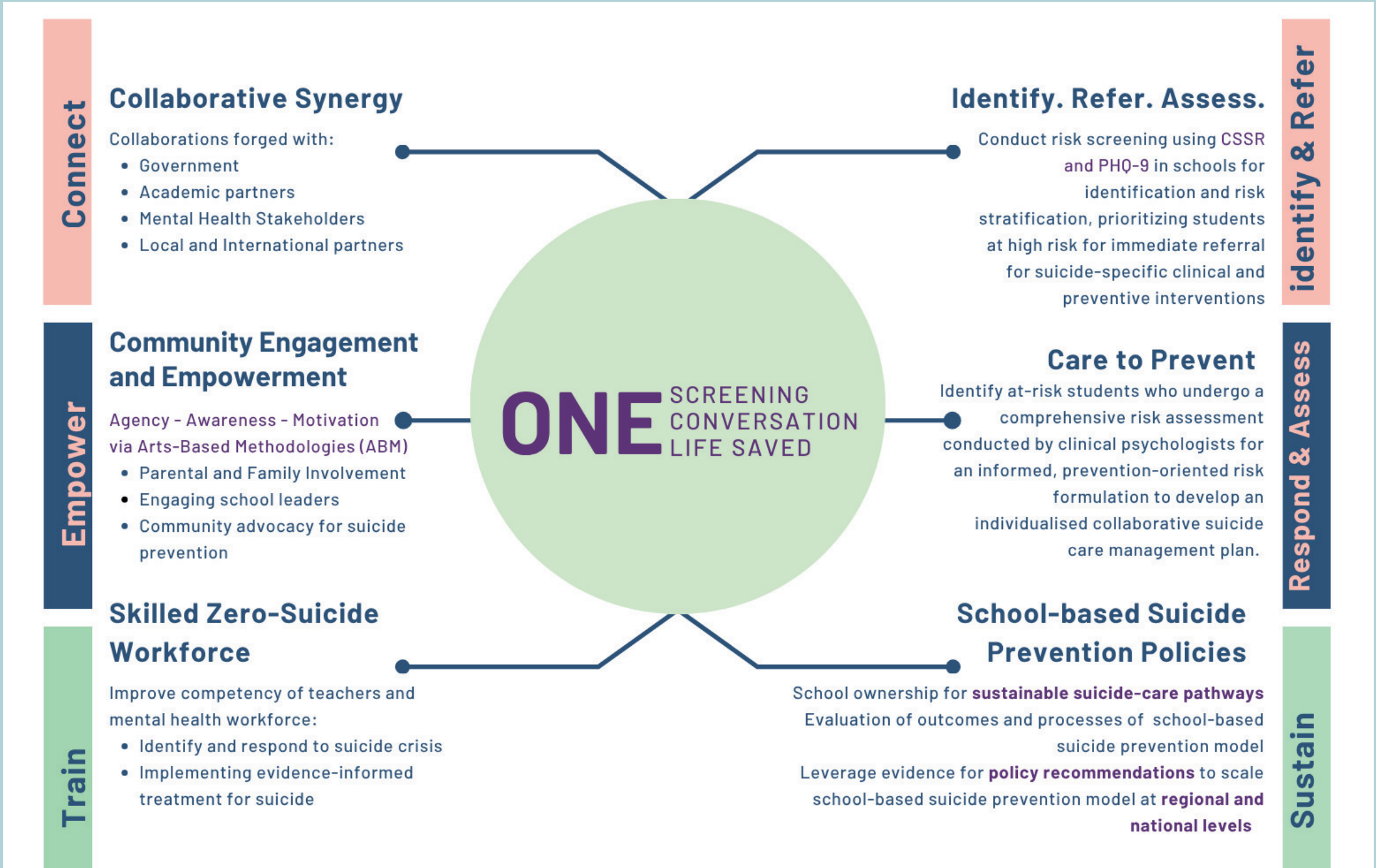
• **Arts-based methods** were used to engage school leadership, teachers, and parents using **Awareness-Agency-Motivation (AAM) model**.



STUDY LIMITATIONS

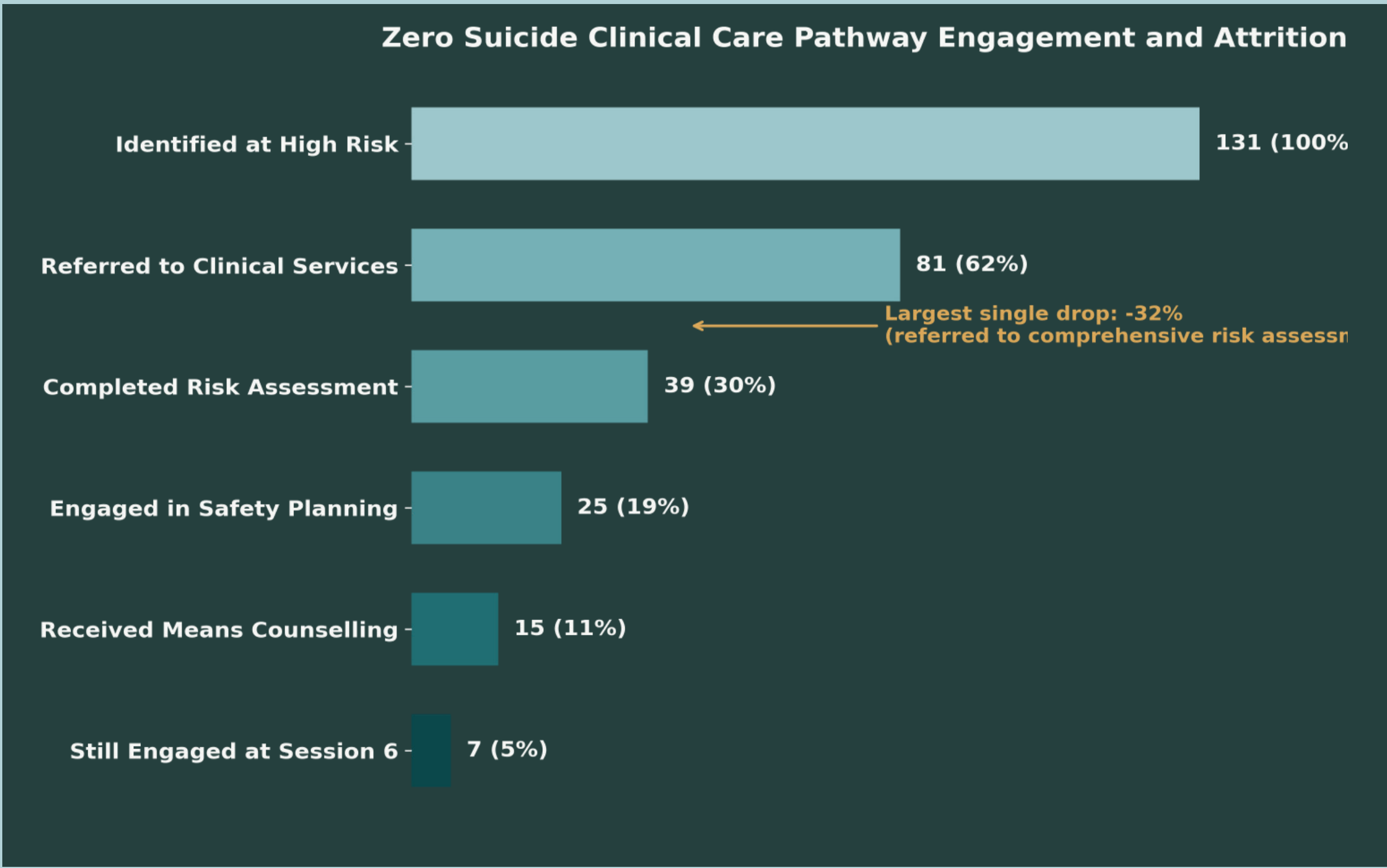
No control group or randomisation. Psychosocial items came from a brief investigator-designed checklist rather than validated instruments, and family-level items relied on student reports rather than caregiver reports. Suicide risk assessment instruments including the C-SSRS have limited positive predictive value at the individual level and were used for triage, not prediction. Loss to follow-up was substantial and probably non-random, so risk reduction figures are best read as an upper bound among a self-selected completer group. Finally, the suicidal behaviour model carries 7.6 events per variable, which is below conventional thresholds, and estimates for the smallest residential areas are correspondingly imprecise.

DAREECHA PROGRAM: SCHOOL BASED ZERO SUICIDE MODEL



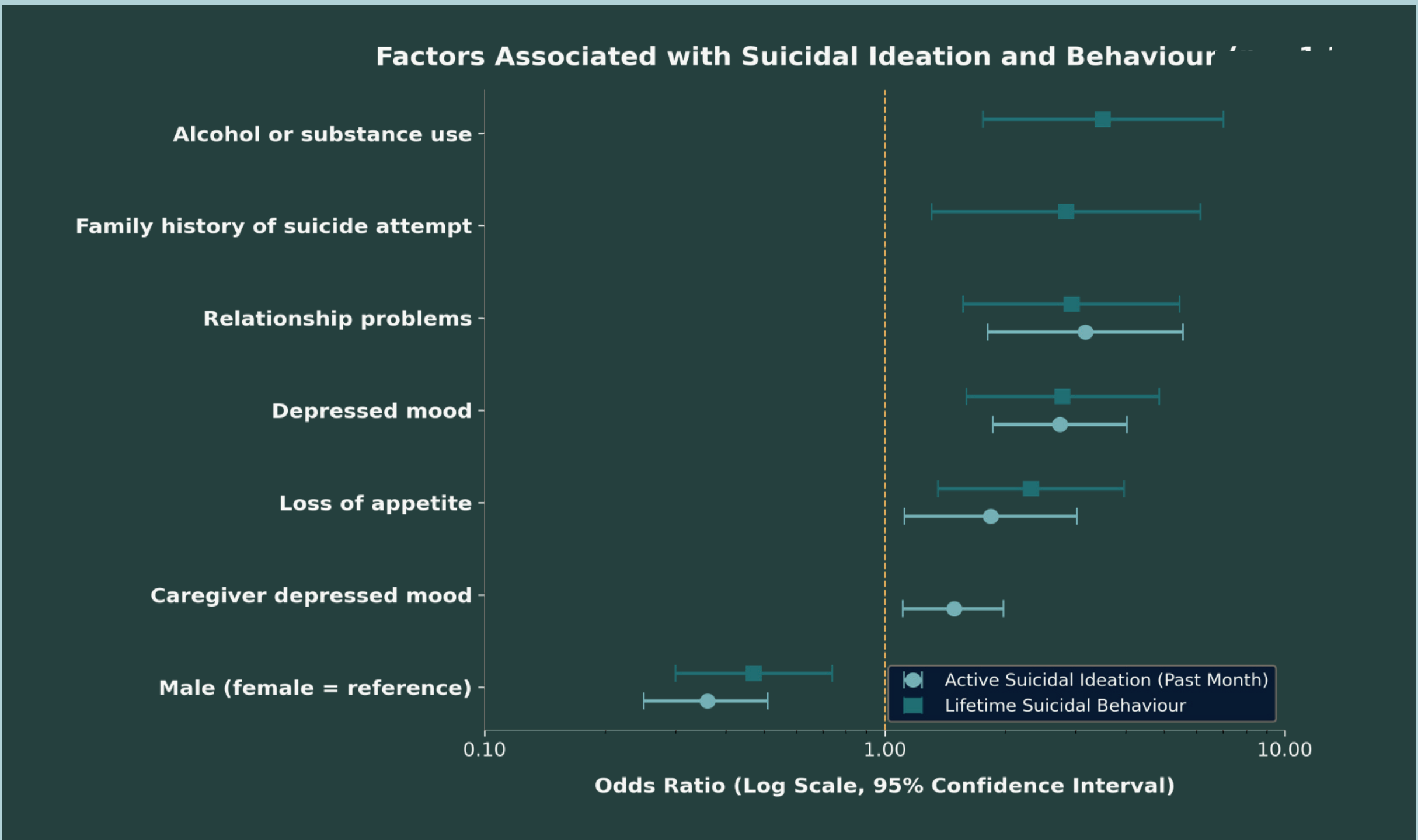
THE ZERO SUICIDE CASE CASCADE

A horizontal funnel of engagement from initial identification to session six. A significant dropout was noted post-screening. Each step is represented as a percentage of the 131 students identified as high risk. The largest single attrition occurs between referral and comprehensive risk assessment.



FACTORS ASSOCIATED WITH IDEATION AND BEHAVIOUR

Binary logistic regression results with standard errors clustered on 15 schools (n = 1,301). Male gender is associated with significantly lower odds of both outcomes. Relationship problems, depressed mood, and loss of appetite are associated with both outcomes. Alcohol or substance use and family history of suicide attempt are associated with lifetime behaviour only.



REGRESSION MODEL ODDS RATIO AND CONFIDENCE INTERVALS

Past-Month Active Suicidal Ideation OR (95% CI):

- Relationship problems: 3.17 (1.81 to 5.57)
- Depressed mood: 2.74 (1.86 to 4.03)
- Loss of appetite: 1.84 (1.12 to 3.02)
- Caregiver depressed mood: 1.49 (1.11 to 1.98)
- Male (female = reference): 0.36 (0.25 to 0.51)

Lifetime Suicidal Behaviour OR (95% CI):

- Alcohol or substance use: 3.51 (1.76 to 7.02)
- Relationship problems: 2.93 (1.57 to 5.46)
- Family history of suicide attempt: 2.84 (1.31 to 6.15)
- Depressed mood: 2.78 (1.60 to 4.85)
- Loss of appetite: 2.32 (1.36 to 3.96)
- Male (female = reference): 0.47 (0.30 to 0.74)

SCREENING RESULTS

. Elevated suicide risk: **199 students (15.3%)**

- High risk (C-SSRS): 131 (10.1%)**
- Moderate risk (C-SSRS): 68 (5.2%)
- Low risk (C-SSRS): 1,102 (84.7%)

• **Active suicidal ideation in past month: 197 (15.1%)**

• Consideration of method: 122 (9.4%)

• Suicidal ideation with intent: 89 (6.8%)

• Specific plan and intent: 68 (5.2%)

• Lifetime suicidal behaviour: 121 (9.3%)

• **Suicidal behaviour (past 3 months): 69 (5.3%)**

• PHQ-9 item 9 endorsed (score >= 2): 110 (8.5%)

CARE DISENGAGEMENT ANALYSIS

Therapeutic interventions were delivered online because trained clinical psychologists were unavailable in the region and the geographical terrain made travel impractical. Weak internet infrastructure, dependence on adults for digital device access (especially among female students), societal stigma, and privacy concerns at home all drove disengagement. Additionally, a month of internet blackout and school closures during socio-political unrest disrupted overall clinical care continuity.

CONCLUSION

A **Zero Suicide pathway** can be established in a remote district using the existing school and health workforce: **82 staff trained, 1,301 students screened**, and **199 identified at elevated risk**. Attrition between identification and treatment, rather than the screening step, is where the care pathway loses people, and is where subsequent implementation effort belong: including **continued engagement through support groups for at-risk people and their family members** to improve adherence; **Placing lay counsellors in schools and training teachers and young peers** for early identification and an enabling environment is essential. **At policy level, school-based suicide prevention should be institutionalized as an integrated education-health pathway**, with periodic screening and referral mechanisms

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