Hospital-based Pediatric Suicide Risk Screening Outcomes Vary by Demographic and Clinical Characteristics

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Introduction

Suicide is a leading cause of death among youth, which has prompted universal suicide risk screening at many health systems.[1-4] While there are known differences in suicidality prevalence across demographic groups, differences in screening responses across groups remain poorly understood.[17-23] This study examines associations between demographic and clinical characteristics and responses to universal suicide risk and depression screening tools in a pediatric hospital setting.

We aimed to evaluate for any variation in suicide screening responses based on sociodemographic and clinical characteristics among pediatric patients screened at a single academic medical center. If present, we aimed to elucidate whether certain groups are over- or underrepresented in positive screening responses compared to average response rates overall. We hypothesize that there are, in fact, demographic and clinical differences in suicide screening responsiveness characteristics which align with current literature on suicidality and depressive symptom prevalence among various groups.

Methods

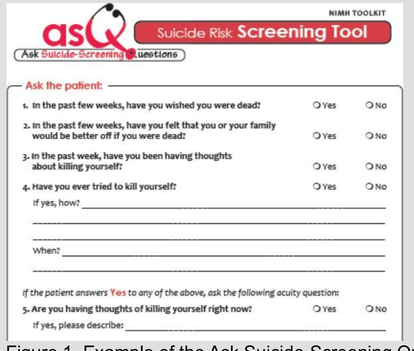
A retrospective cohort study was completed with EHR and CDPHE data from 66,225 patients aged 10–26 years who were universally screened with the Ask Suicide-Screening Questions (ASQ) (Figure 1) and Patient Health Questionnaire-9 (PHQ-9) across emergency, urgent care, and inpatient settings in a single hospital system. Demographic and clinical data were extracted from electronic health records, which included natal sex, age, race/ethnicity, insurance payor, prior mental health encounter(s), and prior abuse/neglect (SCAN) report(s). Response categories to the ASQ and PHQ-9 were analyzed against these factors with frequency comparisons via chi-squared tests and measuring mean differences via ANOVA.

Results

	Negative (N=45759)	Positive (N=5483)	No ASQ (N=13427)	P-value
Sex (natal)				
Female	22034 (48.2%)	3690 (67.3%)	6652 (49.5%)	<0.001
Male	23725 (51.8%)	1793 (32.7%)	6775 (50.5%)	
Age (years)				
Mean (SD)	14.30 (2.72)	15.12 (2.45)	14.39 (3.05)	<0.001*
Median [Min, Max]	14.12 [10.00, 25.87]	15.26 [10.00, 25.87]	14.12 [10.00, 26.06]	
Race				
AIAN	235 (0.5%)	40 (0.7%)	82 (0.6%)	<0.001
Asian	1031 (2.3%)	110 (2.0%)	289 (2.2%)	
Black	3398 (7.4%)<	367 (6.7%)<	1293 (9.6%)>	
NHPI	156 (0.3%)	18 (0.3%)	43 (0.3%)	
White	30477 (66.6%)>	3808 (69.5%)>	8450 (62.9%)<	
Other	7202 (15.7%)>	645 (11.8%)<	2053 (15.3%)	
Multi	2326 (5.1%)<	341 (6.2%)>	743 (5.5%)	
Unknown	934 (2.0%)<	154 (2.8%)	474 (3.5%)>	
Ethnicity				
Hispanic or Latino	16746 (36.6%)>	1610 (29.4%)<	4800 (35.7%)	<0.001
Not Hispanic or Latino	28158 (61.5%)<	3747 (68.3%)>	8198 (61.1%)<	
Unknown	855 (1.9%)<	126 (2.3%)	429 (3.2%)>	
Payor				
Contract	22380 (48.9%)>	2474 (45.1%)<	5636 (42.0%)<	<0.001
Non-Contract	367 (0.8%)	39 (0.7%)	106 (0.8%)	
Medicaid	19586 (42.8%)<	2479 (45.2%)	6425 (47.9%)>	
TRICARE	1903 (4.2%)	352 (6.4%)>	522 (3.9%)	
Self-Pay	1246 (2.7%)<	118 (2.2%)<	636 (4.7%)>	
Indigent Care	258 (0.6%)	20 (0.4%)	77 (0.6%)	
Other	19 (0.0%)<	1 (0.0%)	25 (0.2%)<	

Table 1. Patient characteristics by ASQ result. *Age is significantly greater in positive relative to no or negative ASQ. <Significantly under-represented relative to expected values; >significantly over-represented relative to expected values. Significance tests are Holm-Bonferroni corrected post-hoc analysis.

- Detailed results are outlined in Table 1
- Age and female natal sex were more associated with positive ASQ screening[5,11-12,17-18]
- Identifying as Hispanic/Latino was associated with lower reporting of suicidality, while identifying as Black, being uninsured, or having Medicaid was associated with no screening being administered[33,35]
- Higher SES (via ADI and insurance proxy) was associated with lower reporting of suicidality (except for patients with military insurance)[25,37]
- Most individuals with a positive ASQ screen had no prior mental health contact or abuse/neglect report, while those with prior abuse/neglect reports were associated with higher reporting of suicidality[38]


NIMH TOOLKIT

asQ Suicide Risk Screening Tool

Ask Suicide-Screening Questions

Ask the patient:

1. In the past few weeks, have you wished you were dead? ○ Yes ○ No
2. In the past few weeks, have you felt that you or your family would be better off if you were dead? ○ Yes ○ No
3. In the past week, have you been having thoughts about killing yourself? ○ Yes ○ No
4. Have you ever tried to kill yourself? ○ Yes ○ No

If yes, how? _____

When? _____

If the patient answers Yes to any of the above, ask the following acuity question:

5. Are you having thoughts of killing yourself right now? ○ Yes ○ No

If yes, please describe: _____

Figure 1. Example of the Ask Suicide-Screening Questions (ASQ) Tool. If a patient answers yes to any of questions 1 through 4, they are considered a positive screen. If they answer yes to question 5, it is considered an acute positive screen and warrants immediate evaluation.[31]

Discussion

- Rates of positive suicide risk screens (8.5% overall) and ASQ completion rates were consistent with prior studies, supporting the generalizability of the results[9,12]
- Several demographic and clinical characteristics, including sex, age, race, ethnicity, insurance payor, and SES were all associated with differences on ASQ and PHQ-9 positive screening
- Limitations include different screening uses in patient crises, self-reporting bias on ASQ/PHQ responses, and limited generalizability due to single-center data collection[40-41]
- Future studies will aim to obtain data from multiple hospital systems and evaluate differences in responsiveness across various hospital settings (e.g. ED, inpatient)

Conclusion

- Several demographic and clinical factors are correlated with different suicide and depression screening outcomes
- These findings highlight areas where large health care systems can address gaps in suicide screening practice (e.g. improving suicide screening completion rates among Black and uninsured youth)

References

1. Listed in Supplemental Materials