Anxiety Screening in Pediatric Populations

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Milton, VT

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Family Medicine: October-November 2022

Project Mentor: Megan Malgeri, MD

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Problem Identification & Description of Need

- Currently, the University of Vermont Medical Center – Family Medicine Clinic in Milton, VT does not use a standard screening tool for pediatric patients
  - The Generalized Anxiety Disorder scale (GAD -7) is currently used mainly for adult patients
  - We hoped to develop a screening tool that would be effective for providers to use if there was concern for anxiety in their pediatric patients
  - The screening tool should be easy to understand and administer by staff
  - If left untreated, trauma caused by healthcare-induced anxiety can cause significant mental health issues in a child's life[1]
- AHEC Focus Areas
  - Interprofessional Education
  - Behavioral Health Integration

1. Lerwick JL. Minimizing pediatric healthcare-induced anxiety and trauma. World J Clin Pediatr. 2016 May 8;5(2):143-50. doi: 10.5409/wjcp.v5.i2.143. PMID: 27170924; PMCID: PMC4857227.

Public Health Cost & Unique Cost Considerations

- Pediatric anxiety disorders affect an estimated 32% of children and adolescents in their lifetime in the U.S. and can result in impairments across various aspects of their life[1]
- Validated measures of anxiety and depression severity and of internalizing and externalizing behaviors were reported by youth, their parents, and independent evaluators[1]
- Seventy-two percent of youth ($n = 150$) had positive costs. Among these youth, the mean annual total cost was $6405 ($sd = $11,674), of which $5890 represented direct cost and $4658 represented indirect cost[1]
- Higher average costs were correlated with greater child anxiety and depression severity ($p < 0.001$).[1]
- Overall, it appears that pediatric anxiety disorders result in a very large cost to the patient, their families and the healthcare system overall

Table 3 Annual cost of pediatric anxiety disorder per child, by category (U.S. dollars, 2016)*

From: Pediatric Anxiety Disorders: A Cost of Illness Analysis

Category	Full sample			Children with any costs in category						
	n	mean	sd	n	%	mean	sd	min	median	max
Total cost of illness	195	4952	10,604	150	72	6405	11,674	70	3225	106,870
Direct costs	196	1923	8797	64	31	5890	14,690	70	1315	106,870
Indirect costs	186	3113	5831	125	60	4658	6614	403	2642	57,603
Mental health care services	198	1566	8531	36	17	8615	18,633	70	3390	106,174
Inpatient psychiatric unit	209	22	318	1	0	4600	0	4600	4600	4600
Psychiatrist office visits	198	106	474	14	7	1504	1067	696	1149	4315
Mental health clinic visits	198	325	3202	8	4	8048	14,749	740	3330	44,400
Psychologist/other non-MD office visits	209	544	2261	23	11	4946	5058	860	2340	17,880
Crisis hotline	198	1	9	3	1	70	0	70	70	70
In-home counseling/ crisis services	198	666	5542	5	2	26,357	25,807	1030	20,591	61,774
Medical care	196	341	1223	42	20	1591	2253	550	623	11,500
Inpatient medical unit	198	70	563	3	1	4600	0	4600	4600	4600
Emergency department visits	196	47	326	4	2	2300	0	2300	2300	2300
Primary care visits	209	89	243	29	14	645	258	550	550	1650
Child missed school days	190	2243	4938	126	60	3382	5743	403	2035	57,603
Parents missed workdays	189	856	2486	38	18	4258	4066	468	3079	20,995

*All costs pertain to the child unless otherwise indicated | the n values in this table represent the raw frequencies

1. Pella, J.E., Slade, E.P., Pikulski, P.J. *et al.* Pediatric Anxiety Disorders: A Cost of Illness Analysis. *J Abnorm Child Psychol* **48**, 551–559 (2020). https://doi.org/10.1007/s10802-020-00626-7

Community Perspective & Support

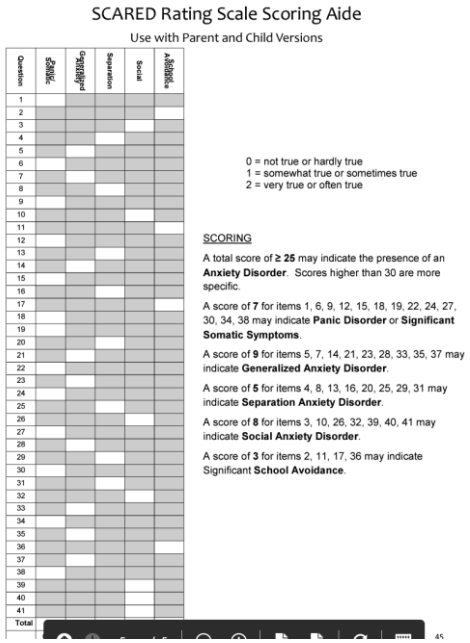
- Megan Malgeri, MD
  - Physician, Family Medicine Practice – Milton, VT
    - As a family medicine physician, Dr. Malgeri interacts with many pediatric patients either directly or indirectly through other providers at her practice.
    - She has been using the intake forms for well-child visits as a guauge to see how each pediatric patient is doing for their individual development
    - She acknowledges that there is not a set standard anxiety screening questionnaire for pediatric patients currently being implemented but is open to seeing if one can be implemented that would be quick and effective
- Daniel Vincent, LPN
  - Ambulatory Nurse, Family Medicine Practice- Milton, VT
    - As an ambulatory nurse, Daniel helps to intake pediatric patients and get them ready for the encounter with the provider
    - He is usually the one that provides the various screening paperwork to the patients, if they have not completed it beforehand
    - He notes that reading ability varies between pediatric patients and their parents/guardians, thus it should be considered when administering such screening questionnaires

Intervention & Methodology

- Researching and Developing a screening questionnaire for anxiety in pediatric patients
- Creating and Implementing a step-by-step flowchart of next steps once the anxiety diagnosis is triggered by the screening questionnaire
- Providing the anxiety screening questionnaire to pediatric patients if their chief complaint is anxiety or the provider is worried about anxiety in a child
- Administer the questionnaires and follow the flowchart for best next steps

Results

- As this is a longitudinal project, we can only hypothesize the results from the pediatric anxiety screenings
- We have researched the "Screen for Child Anxiety Related Disorders (SCARED)" questionnaire that can be filled out by both parent/guardian and child
  - Some excerpts are provided to the right for reference
- The SCARED questionnaire for child anxiety has been translated into 13 languages currently and more are in development



SCARED Rating Scale Scoring Aide

Use with Parent and Child Versions

Question	Panic	Generalized	Separation	Social	Avoidance
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
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28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
Total					

0 = not true or hardly true
1 = somewhat true or sometimes true
2 = very true or often true

SCORING

A total score of **≥ 25** may indicate the presence of an **Anxiety Disorder**. Scores higher than 30 are more specific.

A score of **7** for items 1, 6, 9, 12, 15, 18, 19, 22, 24, 27, 30, 34, 38 may indicate **Panic Disorder** or **Significant Somatic Symptoms**.

A score of **9** for items 5, 7, 14, 21, 23, 28, 33, 35, 37 may indicate **Generalized Anxiety Disorder**.

A score of **5** for items 4, 8, 13, 16, 20, 25, 29, 31 may indicate **Separation Anxiety Disorder**.

A score of **8** for items 3, 10, 26, 32, 39, 40, 41 may indicate **Social Anxiety Disorder**.

A score of **3** for items 2, 11, 17, 36 may indicate Significant **School Avoidance**.

Screen for Child Anxiety Related Disorders (SCARED)

Child Version - Page 1 of 2 (To be filled out by the CHILD)

Name: _____ **Date**: _____

Directions:
Below is a list of sentences that describe how people feel. Read each phrase and decide if it is "Not True or Hardly Ever True" or "Somewhat True or Sometimes True" or "Very True or Often True" for you. Then for each sentence, fill in one circle that corresponds to the response that seems to describe you for the last 3 months.

		0 Not True or Hardly Ever True	1 Somewhat True or Sometimes True	2 Very True or Often True
1.	When I feel frightened, it is hard for me to breathe	o	o	o
2.	I get headaches when I am at school	o	o	o
3.	I don't like to be with people I don't know well	o	o	o
4.	I get scared if I sleep away from home	o	o	o
5.	I worry about other people liking me	o	o	o
6.	When I get frightened, I feel like passing out	o	o	o
7.	I am nervous	o	o	o
8.	I follow my mother or father wherever they go	o	o	o
9.	People tell me that I look nervous	o	o	o
10.	I feel nervous with people I don't know well	o	o	o
11.	My I get stomachaches at school	o	o	o
12.	When I get frightened, I feel like I am going crazy	o	o	o
13.	I worry about sleeping alone	o	o	o
14.	I worry about being as good as other kids	o	o	o
15.	When I get frightened, I feel like things are not real	o	o	o
16.	I have nightmares about something bad happening to my parents	o	o	o
17.	I worry about going to school	o	o	o
18.	When I get frightened, my heart beats fast	o	o	o
19.	I get shaky	o	o	o
20.	I have nightmares about something bad happening to me	o	o	o

Screen for Child Anxiety Related Disorders (SCARED)

Parent Version - Page 1 of 2 (To be filled out by the PARENT)

Name: _____ **Date**: _____

Directions:
Below is a list of statements that describe how people feel. Read each statement carefully and decide if it is "Not True or Hardly Ever True" or "Somewhat True or Sometimes True" or "Very True or Often True" for your child. Then for each statement, fill in one circle that corresponds to the response that seems to describe your child for the last 3 months. Please respond to all statements as well as you can, even if some do not seem to concern your child.

		0 Not True or Hardly Ever True	1 Somewhat True or Sometimes True	2 Very True or Often True
1.	When my child feels frightened, it is hard for him/her to breathe	o	o	o
2.	My child gets headaches when he/she is at school	o	o	o
3.	My child doesn't like to be with people he/she doesn't know well	o	o	o
4.	My child gets scared if he/she sleeps away from home	o	o	o
5.	My child worries about other people liking him/her	o	o	o
6.	When my child gets frightened, he/she feels like passing out	o	o	o
7.	My child is nervous	o	o	o
8.	My child follows me wherever I go	o	o	o
9.	People tell me that my child looks nervous	o	o	o
10.	My child feels nervous with people he/she doesn't know well	o	o	o
11.	My child gets stomachaches at school	o	o	o
12.	When my child gets frightened, he/she feels like he/she is going crazy	o	o	o
13.	My child worries about sleeping alone	o	o	o
14.	My child worries about being as good as other kids	o	o	o
15.	When he/she gets frightened, he/she feels like things are not real	o	o	o
16.	My child has nightmares about something bad happening to his/her parents	o	o	o
17.	My child worries about going to school	o	o	o
18.	When my child gets frightened, his/her heart beats fast	o	o	o
19.	He/she gets shaky	o	o	o
20.	My child has nightmares about something bad happening to him/her	o	o	o

Screen for Child Anxiety Related Disorders (SCARED)

Child Version - Page 2 of 2 (To be filled out by the CHILD)

		0 Not True or Hardly Ever True	1 Somewhat True or Sometimes True	2 Very True or Often True
21.	I worry about things working out for me	o	o	o
22.	When I get frightened, I sweat a lot	o	o	o
23.	I am a worrier	o	o	o
24.	I get really frightened for no reason at all	o	o	o
25.	I am afraid to be alone in the house	o	o	o
26.	It is hard for me to talk with people I don't know well	o	o	o
27.	When I get frightened, I feel like I am choking	o	o	o
28.	People tell me that I worry too much	o	o	o
29.	I don't like to be away from my family	o	o	o
30.	I am afraid of having anxiety (or panic) attacks	o	o	o
31.	I worry that something bad might happen to my parents	o	o	o
32.	I feel shy with people I don't know well	o	o	o
33.	I worry about what is going to happen in the future	o	o	o
34.	When I get frightened, I feel like throwing up	o	o	o
35.	I worry about how well I do things	o	o	o
36.	I am scared to go to school	o	o	o
37.	I worry about things that have already happened	o	o	o
38.	When I get frightened, I feel dizzy	o	o	o
39.	I feel nervous when I am with other children or adults and I have to do something while they watch me (for example: read aloud, speak, play a game, play a sport)	o	o	o
40.	I feel nervous when I am going to parties, dances, or any place where there will be people that I don't know well	o	o	o
41.	I am shy	o	o	o

**For children ages 8 to 11, it is recommended that the clinician explain all questions, or have the child answer the questionnaire sitting with an adult in case they have any questions.*

Developed by Boris Birmaher, MD, Suneeta Khetarpal, MD, Marlane Cully, MEd, David Brent, MD, and Sandra McKenzie, PhD. Western Psychiatric Institute and Clinic, University of Pgh. (10/95). Email: birmaherb@msx.upmc.edu

Screen for Child Anxiety Related Disorders (SCARED)

Parent Version - Page 2 of 2 (To be filled out by the PARENT)

		0 Not True or Hardly Ever True	1 Somewhat True or Sometimes True	2 Very True or Often True
21.	My child worries about things working out for him/her	o	o	o
22.	When my child gets frightened, he/she sweats a lot	o	o	o
23.	My child is a worrier	o	o	o
24.	My child gets really frightened for no reason at all	o	o	o
25.	My child is afraid to be alone in the house	o	o	o
26.	It is hard for my child to talk with people he/she doesn't know well	o	o	o
27.	When my child gets frightened, he/she feels like he/she is choking	o	o	o
28.	People tell me that my child worries too much	o	o	o
29.	My child doesn't like to be away from his/her family	o	o	o
30.	My child is afraid of having anxiety (or panic) attacks	o	o	o
31.	My child worries that something bad might happen to his/her parents	o	o	o
32.	My child feels shy with people he/she doesn't know well	o	o	o
33.	My child worries about what is going to happen in the future	o	o	o
34.	When my child gets frightened, he/she feels like throwing up	o	o	o
35.	My child worries about how well he/she does things	o	o	o
36.	My child is scared to go to school	o	o	o
37.	My child worries about things that have already happened	o	o	o
38.	When my child gets frightened, he/she feels dizzy	o	o	o
39.	My child feels nervous when he/she is with other children or adults and he/she has to do something while they watch him/her (for example: read aloud, speak, play a game, play a sport)	o	o	o
40.	My child feels nervous when he/she is going to parties, dances, or any place where there will be people that he/she doesn't know well	o	o	o
41.	My child is shy	o	o	o

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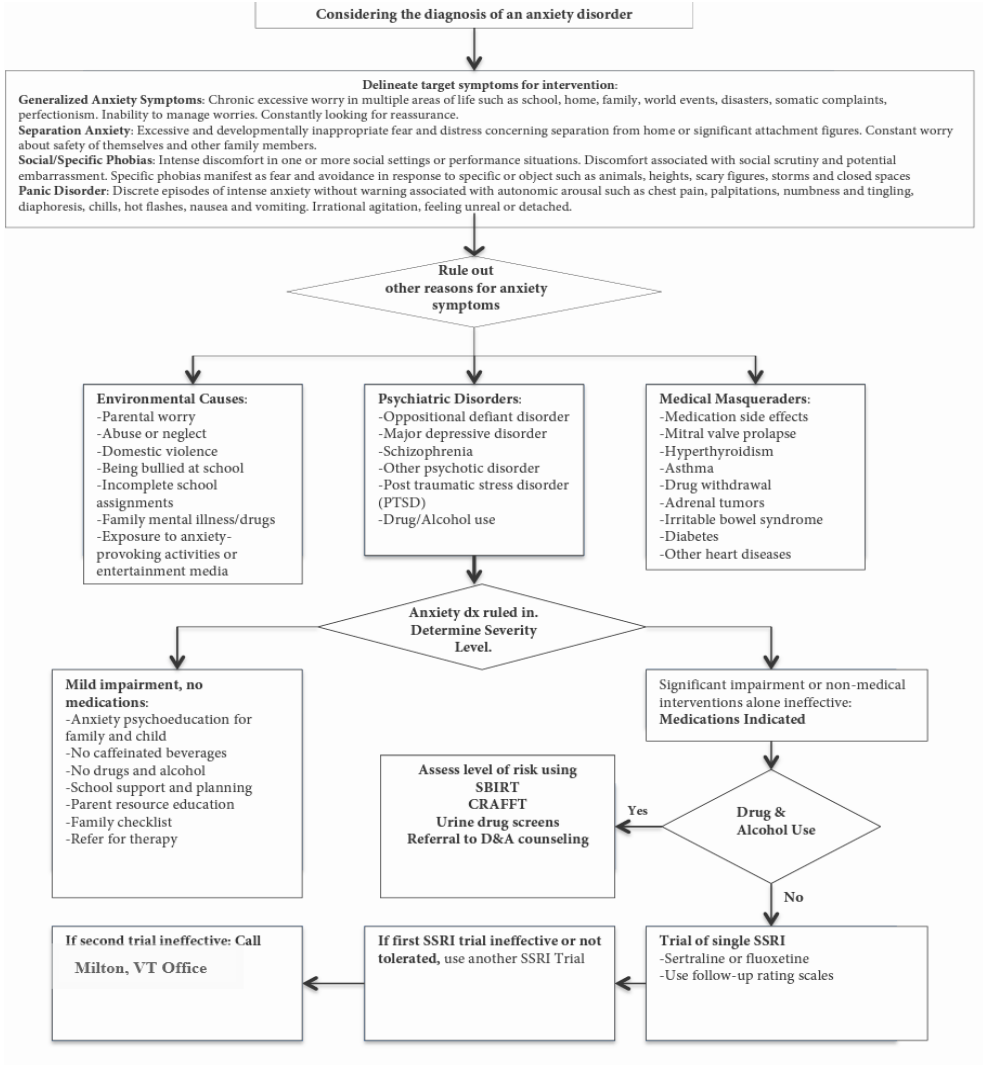
Effectiveness & Limitations

- Effectiveness will be evaluated when a pre and post survey is administered to the providers
- Testimonials from various providers will be recorded and aggregated to look at trends and analysis
- Limitations:
  - Pediatric patients are reliant on their parents/guardians until a certain age for transportation to the clinic appointments
    - This test can be administered virtually and thus we could combat the in-person visit with a zoom encounter
  - The SCARED questionnaire has not been translated into other languages that may come up such as Urdu, Bengali, Hindi, Nepali



Adapted from Mental Health Care Guide for Primary Care Clinicians ***Anxiety*** – Oregon Psychiatric Access Line about Kids

Future Interventions/Projects

- This pediatric anxiety questionnaire could further be built into EPIC or any electronic health record system as a Smart Set for future use by providers
- We could explore the use of the questionnaire in the in-patient setting as many pediatric patients may develop anxiety through their hospitalizations
- Implementation of this questionnaire in home visits could be explored to help provide care to pediatric patients that are unable to come to the clinic and/or may not have internet access
- Collect information from parents/guardians to see how best to support them and their children as they receive a new diagnosis of pediatric anxiety

References

- 1. Lerwick JL. Minimizing pediatric healthcare-induced anxiety and trauma. World J Clin Pediatr. 2016 May 8;5(2):143-50. doi: 10.5409/wjcp.v5.i2.143. PMID: 27170924; PMCID: PMC4857227.
- 1. Pella, J.E., Slade, E.P., Pikulski, P.J. *et al.* Pediatric Anxiety Disorders: A Cost of Illness Analysis. *J Abnorm Child Psychol* **48**, 551–559 (2020). https://doi.org/10.1007/s10802-020-00626-7
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- Mossman SA, Luft MJ, Schroeder HK, Varney ST, Fleck DE, Barzman DH, Gilman R, DelBello MP, Strawn JR. The Generalized Anxiety Disorder 7-item scale in adolescents with generalized anxiety disorder: Signal detection and validation. Ann Clin Psychiatry. 2017 Nov;29(4):227-234A. PMID: 29069107; PMCID: PMC5765270.

Thank you for agreeing to be interviewed. This project is a requirement for the Family Medicine clerkship. It will be stored on the Dana Library ScholarWorks website. Your name will be attached to your interview and you may be cited directly or indirectly in subsequent unpublished or published work. The interviewer affirms that he/she has explained the nature and purpose of this project. The interviewee affirms that he/she has consented to this interview.

Consented
Name: Megan Malgeri, MD
Name: Daniel Vincent, LPN

Did NOT Consent
Name:
Name:

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