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The Safe Environment for Every Kid Model: Analyzing Demographics Related to Higher Risks of Child Maltreatment in High-risk Pediatric Population

Hannah Redding
Wright State University - Main Campus, redding.14@wright.edu

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John Pascoe, MD, MPH, Director of Pediatric Health Services

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Abstract

Background: The Safe Environment for Every Kid (SEEK) screener was developed by Dr. Howard Dubowitz for primary care clinicians to identify and address risk factors for child maltreatment. The instrument queries parents/guardians regarding their families' needs (e.g. food insecurity) and screens for depressive symptoms in the parent/guardian.

Objective: To examine the frequency of social determinants of health (e.g., food insecurity) and its correlates using the SEEK screener during pediatric visits at a Federally Qualified Health Center in south central Ohio.

Design/Methods: The SEEK screener was distributed to parents/guardians (PG) at Rocking Horse Community Health Center, a Federally Qualified Health Center in Springfield, Ohio, from April 2016 through May 2019. Inclusion criteria were English speaking PG who brought index

children (age <19 years) in for an appointment with one of the investigators (JP). Many of the index children had learning or behavior challenges identified by the PG during the visit. 265 PG of the index children completed the survey. Comparisons between demographic characteristics and SEEK variables were made with chi-square tests.

Results: The response rate was over 95%; 20 surveys were excluded for this analysis due to incomplete data. The median age of index children was 6 years, 68.1% were white, 86.5% had public health insurance and 52.7% lived with either their mother or father as a single parent. One third of respondents reported annual household income under $10,000, almost one third reported food insecurity, and over one quarter (27.5%) reported feeling down or depressed in the past month. PG of younger children (<6 years) were more likely to report depressive symptoms compared to PG of older children (34.1% vs 22.7%, p=0.048). In contrast, food insecurity was stable across all ages at about one third of the sample. Both depressive symptoms and food insecurity had a strong relation to type of health insurance: 9.4% of PG with private health insurance had depressive symptoms compared to 31.6% with public insurance (p=0.010), and depressive symptoms were reported by 12.1% with private insurance vs. 36.2% with public insurance (p=0.006).

Conclusion(s): The SEEK screener is a very useful tool to identify important factors that affect children's well-being, their families' unmet social needs and PG depressive symptoms. While adult depressive symptoms are more common in PG of younger children, food insecurity impacts low income families across their life cycle.

Key words: child maltreatment, depression, food insecurity

Introduction/Literature Review

Child maltreatment is a common and expensive problem in the United States. Child Protective Services (CPS) recieves more than 3.3 million reports involving children annually and the lifetime cost per victim of nonfatal child maltreatment in the U.S. is $210,012. A total of 794,000 or 10.6 per 1,000 children are maltreated in the U.S. each year and an average of $95 per year is the individual and societal cost of child maltreatment.[3]

Throughout the lifecycle, experiences during childhood and youth influence health and development. Child abuse and neglect can lead to toxic stress which is defined as "strong, frequent, or prolonged activation of the body's stress response systems without protection or buffering of a supportive adult relationship." Toxic stress is connected to poor mental and physical health outcomes due to physiologic dysregulations as well as maladaptive coping strategies that cause additional poor health effects.[4] Child maltreatment can result in injuries, neurologic impairment, and even death. As adults, maltreated children have increased risks of becoming abusive parents, depression, suicide, substance abuse, criminal behavior, interpersonal problems, academic and vocational difficulties, poor health, and increased healthcare use.[2]

With twentieth century advances in public health, immunizations, antibiotics, and nutrition, more attention in healthcare has been focused on children's quality of life and environment. This shift has been coined the "New Morbidity".[6] However, this new focus is complicated because multiple and interacting factors contribute to a child's quality of life and environment.[4] Primary care pediatricians have multiple, scheduled appointments with children and their families. Therefore, pediatricians can identify and prevent child maltreatment early. Pediatricians also typically have a positive relationship with families and pediatricians do not have a negative stigma like child welfare and mental health.[1] Pediatricians typically recognize psychosocial

problems in families but lack the training, time, comfort, and screening tools to address the problems.[2]

The Safe Environment for Every Kid (SEEK) model was developed for practitioners to identify and address targeted risk factors for child maltreatment. SEEK focuses on problems with available resources and includes protective factors. Protective factors are defined as strengths and resources that counter the impact of risk factors. Protective factors also offer a constructive approach to work with families. The SEEK model addresses common problems associated with child maltreatment including parental depression, major parental stress, substance abuse, intimate partner or domestic violence, and harsh punishment.[1]

SEEK involves three core components. First, child health primary care professionals are trained to assess and address psychosocial problems. Through online training modules, pediatricians are taught motivational interviewing and how to identify and utilize parents' strengths and resources. Due to their limited time, professionals identify, clarify, and address problems and then use community resources for further assistance. The second component is a three-minute parent questionnaire with fifteen yes/no questions. The questionnaire includes an empathetic introduction to address socially undesirable information and clarify that questions are not targeted but given to all parents. The final component involves the Reflect, Empathize, Assess, and Plan approach. The pediatrician reflects what the parent shared and gives an empathetic statement mentioning the impact on the child to strengthen their connection with the parent for effective intervening. The professional assesses the nature of the problem, determines if help is already in place, assesses the parent's interest in receiving help, and determines the barriers to help. Through motivational interviewing, the pediatrician engages the parents in

planning the intervention. Ideally, mental health professionals are available on site to assess and address problems and refer families to community resources.[1]

The SEEK model was implemented in a pediatric resident clinic serving a low income, mostly African American urban population. Pediatricians displayed improvement in thinking and behavior regarding four out of the six targeted problems and their improvement was sustained for 18 months. Health care professionals were also more likely to screen and assess parents for risk factors and were reported as more favorable by parents. Children in the clinic were significantly less likely to be maltreated and had fewer CPS reports, instances of medical neglect, and instances of severe physical assault reported by parents. Parents were screened for depression more often and almost always had follow up action. After twelve months, parents described higher parenting satisfaction. On average, the SEEK model did not require additional time for pediatricians and cost $5.12 per family, averting $122 per case of psychological aggression or physical assault. Potentially, 4,200 children per 100,000 would be prevented from child maltreatment with SEEK implementation saving $37 million. Out of seventeen high risk families, SEEK could prevent one case of abuse or neglect.[1] The SEEK model was also implemented in eighteen private pediatric practices serving a middle-class, mostly white urban population. Parents had a higher measure of appropriate conflict resolution with their children and a lower rate of minor physical assault toward their child initially and twelve months later.[3]

A question of food insecurity (FI) was added to the parent questionnaire and administered to a clinic serving a low income, mostly African American urban population. According to the United States Department of Agriculture, approximately 21% of U.S. households with children were food insecure in 2011. Children from food insecure families had a higher frequency of acute and chronic illnesses and hospitalizations along with a higher risk of developmental delays,

learning difficulties, attachment problems, depression, and externalizing and internalizing behavior problems. When compared with parents who did not participate in the SEEK model, parents who did participate in the SEEK model were significantly more likely to have FI identified and after six months almost all SEEK families maintained Supplemental Nutrition Assistance Program enrollment.[7]

A parent questionnaire was developed utilizing the SEEK model and distributed to families at Rocking Horse Community Health Center (RHC) in Springfield, Ohio. RHC is a Federally Qualified Health Center. The questionnaire was a three-minute survey with fifteen yes/no questions. A research assistant administered the survey to parents while they were in the waiting room prior to their child's appointment. If a family had more than one child, the parent was instructed to answer the questions about their youngest child. The questionnaire was given to all families with children of eighteen years of age or less. Previous studies involving the SEEK model focused on children five years of age or younger.[1] Demographics including the parent's age and the patient's race, custody status, education level, total household income, and number of people living in the household will be analyzed for relationships with those surveys that have a higher number of questions answered as "yes".

The SEEK model is being implemented in a rural low income setting for the first time. A wider range of ages were also included in the current study. With the current SEEK model, the intention is to use the data collected to implement resources that are commonly needed by multiple families to assist families in building safe environments for their children.

Hypothesis/Specific Aims/Research Questions

If a difference does exist between families that are more likely to complete a SEEK questionnaire with a higher number of questions answered as "yes" compared to families with a higher number of questions answered as "no", then common differences are one or more of the following: zip code, age of the primary guardian, the child's living situation and custody status, race, total household income, or the number of people living in the household. The data will be used to determine what specific demographics are common in families that are more likely to answer questions in the SEEK survey suggesting their home is not safe. By analyzing a wider range of demographics, the current study will be able to target specific populations that can be offered additional services in the future to prevent unsafe environments for children.

Methods

Participants

Participants were recruited from Rocking Horse Community Health Center (RHC) in Springfield, Ohio. Research assistants approached guardians that were waiting in the waiting room with their children for medical appointments. A total of five hundred guardians consented to participate in the study. RHC is a Federally Qualified Health Center, so many of the participating families were considered to have a low socioeconomic status. Only guardians of children under the age of eighteen were included in the study. Participants were excluded if they were not legal guardians of the child. No incentive was offered to participants.

Materials

The SEEK questionnaire included a question asking each child's date of birth and name to connect the surveys to the patient's electronic health record. The survey consisted of fifteen yes/no questions (see Appendix).

Procedure

Research assistants approached guardians in the waiting room at RHC and asked for them to complete the SEEK survey. Guardians were told that the survey would take approximately three minutes to complete. If guardians had more than one child, they were instructed to answer the survey based on information regarding their youngest child.

Results

245 surveys were collected from March 27, 2016 through May 26, 2019. Surveys were included if the child was 0-18.9 years old, and lived with their mother and/or father, or grandparent(s). The mean (SD) of included children is 6.9 (3.3) years with a range of 1.2-18.1 years. 20 of 265 surveys (7.5%) were excluded due to missing survey date/age (n=2), age >18.9 years (n=1), child lived with a guardian other than their mother, father, or grandparent (n=16), or the custody variable was missing (n=1). 68.1% were white, 86.5% had public health insurance, 33.3% reported an annual household income below $10,000, and 57.8% reported an income between $10,000 and $50,000. 52.7% lived with either their mother or father as a single parent and 12.2% lived with a grandparent. 21.4% reported more than 6 family members in their household and 45.7% reported 4-5 members. 28.5% reported symptoms of depression, 59.4% reported major stress, 48.3% reported using harsh punishment, and 32.8% reported food insecurity. 1.2% reported substance abuse and domestic violence.

Parents and guardians (PG) of younger children (<6 years) were more likely to report symptoms of depression (34.1% vs 22.7%, p=0.048) (Table 1-1), major stress (65.8% vs. 52.9%, p= 0.042) (Table 1-2), and harsh punishment (57.4% vs 39.2%, p= 0.005) (Table 1-3) compared to PG of older children (greater than or equal to 6 years). PG with public insurance were more likely to report symptoms of depression (31.6% vs 9.4%, p= 0.01) (Table 2-1), major stress (63.6% vs. 34.4%, p= 0.002) (Table 2-2), and food insecurity (36.2% vs 12.1%, p= 0.006) (Table 2-3) compared to PG with private insurance. PG with annual household incomes below $10,000 were more likely to report food insecurity (42.3%) compared to PG with annual household incomes between $10,000 and $50,000 (32.8%) and greater than $50,000 (4.8%, p= 0.005) (Table 3-1).

TABLE 1 Child's age * SEEK: depression/major stress/harsh punishment Crosstabulation

		Child's age (2 levels)	
		0.0-5.9 y	6.0- 10.9 y
SEEK: depression	P= 0.048 c		
	Count	42	27
	% within child's age	34.1%	22.7%
	% within SEEK: depression	60.9%	39.1%
SEEK: major stress	P=0.042 c		
	Count	79	63
	% within child's age	65.8%	52.9%
	% within SEEK: major stress	55.6%	44.4%
SEEK: harsh punishment	P=0.005 c		
	Count	70	47
	% within child's age	57.4%	39.2%
	% within SEEK: harsh punishment	59.8%	40.2%

TABLE 2 Insurance * SEEK: depression/major stress/food insecurity Crosstabulation

		Insurance (2 levels)	
		Private	Public
SEEK: depression	P= 0.010 c		
	Count	3	66
	% within insurance	9.4%	31.6%
	% within SEEK: depression	4.3%	95.7%
SEEK: major stress	P= 0.002 c		
	Count	11	131
	% within insurance	34.4%	63.6%
	% within SEEK: major stress	7.7%	92.3%
SEEK: food insecurity	P= 0.006 c		
	Count	4	76
	% within insurance	12.1%	36.2%
	% within SEEK: food insecurity	5.0%	95.0%

TABLE 3 Income * SEEK: food insecurity Crosstabulation

		Income (3 levels)		
		>$50,000	$10,000- $50,000	< $10,000
SEEK: depression	P= 0.005 c			
	Count	1	45	33
	% within income	4.8%	32.8%	42.3%
	% within SEEK: food insecurity	1.3%	57.0%	41.8%

PG who reported major stress were more likely to report symptoms of depression compared to PG who did not report major stress (94.2% vs 5.8%, p< 0.001) (Table 4-1). PG who reported harsh punishment were also more likely to report symptoms of depression compared to PG who did not report harsh punishment (81.2% vs 18.8%, p< 0.001) (Table 4-2). PG who reported food insecurity were more likely to report symptoms of depression compared to PG who did not report food insecurity (57.4% vs 42.6%, p< 0.001) (Table 4-3).

TABLE 4 SEEK: depression * SEEK major stress/harsh punishment/food insecurity Crosstabulation

		SEEK: depression
SEEK: major stress	P< 0.001 c	
	Count	65
	% within SEEK: major stress	46.1%
	% within SEEK: depression	94.2%
SEEK: harsh punishment	P< 0.001 c	
	Count	56
	% within SEEK: harsh punishment	47.9%
	% within SEEK: depression	81.2%
SEEK: food insecurity	P< 0.001 c	
	Count	39
	% within insurance SEEK: food insecurity	49.4%
	% within SEEK: depression	57.4%

Discussion

Previous studies only included screening children ages 0-5.[1,2,3,6] However, our results showed that PG of children up to six years of age are at high risk for child maltreatment and symptoms of depression. In the current study, 86.5% of PG reported receiving public health insurance similar to the results found in a previous study conducted in a medium-sized, inner-city pediatric practice which reported 80% of families receiving public health insurance.[5] Yet, previous work has not demonstrated the increased risk for child maltreatment in families with public health insurance.

Our results demonstrated that PG who do report food insecurity are more likely to be covered by public health insurance and report symptoms of depression. Previous studies have shown that children from food insecure families also have a higher risk of developing depressive symptoms.[7]

Conclusion

Our study included 245 participants and occurred over a period of two years. Future studies should include a larger sample size and interview patients over a longer period. The current study was conducted at one pediatric office, which is beneficial when determining the needs of patients in a specific geographic location. However, prospective research focusing on additional pediatric populations in multiple offices would encompass a more diverse group of participants.

Surveys were completed by PG. Our study excluded 7.5% of participants due to data missing from surveys. In the future, having trained research assistants verbally interview PG may decrease the amount of missing data.

Future research should focus on additional aspects of psychosocial stress in patients and their families in relation to food insecurity. Our study found a relationship between depression and food insecurity. However, additional relationships between mental illness and food insecurity may exist within families. In the future, research should focus on other psychiatric illnesses including anxiety and mood disorders while also screening for food insecurity.

Our research reveals the importance of identifying families with children under six years of age, food insecurity, and public health insurance. Children in these families are at a higher risk of child maltreatment. Pediatric appointments can be an opportunity for health care professionals to address these concerns and offer additional resources to these families.

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Appendix

Questions Included in SEEK Questionnaire

1. Do you need the number for Poison Control?
2. Do you need a smoke detector for your home?
3. Does anyone smoke tobacco at home?
4. In the last year, did you worry that your food would run out before you got money or Food Stamps to buy more?
5. In the last year, did the food you bought just not last and you didn't have money to get more?
6. Do you often feel your child is difficult to take care of?
7. Do you sometimes find you need to hit/spank your child?
8. Do you wish you had more help with your child?
9. Do you often feel under extreme stress?
10. In the past month, have you often felt down, depressed, or hopeless?
11. In the past month, have you felt very little interest or pleasure in things you used to enjoy?
12. In the past year, have you been afraid of your partner?
13. In the past year, have you had a problem with drugs or alcohol?
14. In the past year, have you felt the need to cut back on drinking or drug use?
15. Are there any problems you would like help with today?