

# Social Determinants of Health and Adolescent Depression in Pediatric Primary Care



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## Introduction

- ❖ **Psychological problems** are under-identified and under-treated in adolescents, specifically in **low-income, ethnically-diverse & racially-diverse** youth (Thomas et al, 2011).
- ❖ **Social determinants of health (SDoH) - the political, socioeconomic, & cultural** circumstances in which individuals are born and live (NEJM, 2017) - can **affect access** to mental health care for adolescents.
- ❖ **SDoH** that disproportionately affect low-income, minority populations are **magnified** during **times of crisis**, such as the Covid-19 pandemic (Islam & Matiz, 2020).
- ❖ Previous studies have shown **economic variables** related to income may contribute to **parental/caregivers' mental health** (Shittu et al., 2014).
- ❖ **Adolescents** are **affected by** parental mental health (Regis, 2021). **Parental distress** as a result of psychosocial needs is related to the likelihood of adolescents developing mental health concerns (CDC, 2022).
- ❖ Increased understanding of the relationship between SDoH and adolescent depression is important for healthcare **policy reform, funding, and care delivery** to **address the ongoing mental health crisis**.

## Objective

- ❖ Examine the associations between items on the PHQ-9A and CHCO psychosocial screener (PSS) to better understand the relationship between family well-being and adolescent depression in pediatric primary care.
- ❖ **Hypothesis:** PSS items related to resource needs will be positively correlated with elevated PHQ-9A items.

## Methods

- ❖ **Setting:** urban residency training pediatric primary care with fully integrated behavioral health clinicians & community health navigators.
- ❖ Adolescents aged 11 and older (except those with Autism, developmental, and intellectual disabilities) complete The Patient Health Questionnaire for Adolescents (PHQ-9A; Johnson et al., 2002), a validated screening tool, at every clinic visit.
- ❖ All families complete the PSS (Talmi & Poole, 2010) to assess SDoH needs related to transportation, food, housing, education, caregiver well-being, and safety at every well child check.
- ❖ Electronic medical records yielded visit data, demographics, and PHQ-9A and PSS results from 1/1/19 - 4/30/22.
- ❖ **Statistical Methods:**
  - **Chi squares** were run using demographic variables for those with and without elevated screener scores.
  - **Pearson's correlations** were run between individual PHQ-9A and PSS items for all adolescents with at least one elevated screener over the course of the study.
- ❖ Data from the first visit in the study were used.
- ❖ **Sample at Visit 1:** 610/4226 had an elevated PHQ-9A; 821/3565 had an elevated PSS
- ❖ **Overall sample of elevated scores throughout the entire study period:** 1,340 had an elevated PHQ-9A or an elevated PSS

## Results

**Table 1. Demographic Information by PHQ-9A score at Visit 1**

	Total PHQ-9A completed at Visit 1	Elevated PHQ-9A at Visit 1	Not Elevated PHQ-9A at Visit 1
<b>Sample</b>	N= 1235	N= 610	N= 625
<b>Mean Age (SD)</b>	13.4 (2.043)	13.5 (2.112)	13.3 (1.970)
<b>Gender*</b>			
Female	692 (56%)	403 (66%)	289 (46%)
Male	543 (44%)	207 (34%)	336 (54%)
<b>Ethnicity</b>			
Hispanic/Latino	676 (55%)	339 (56%)	337 (54%)
Non-Hispanic/Non-Latino	515 (42%)	254 (42%)	261 (42%)
Unknown	44 (3%)	17 (2%)	27 (4%)
<b>Race*</b>			
Native American/ Pacific Islander	5	3	2
Asian	26 (2%)	12 (2%)	14 (2%)
African American/Black	269 (22%)	127 (21%)	142 (23%)
White*	379 (31%)	204 (33%)	175 (28%)
More than one race	131 (11%)	65 (11%)	66 (11%)
Other/Unknown	425 (34%)	199 (33%)	226 (36%)
<b>Primary Language*</b>			
English	862 (70%)	461 (76%)	401 (64%)
Spanish	335 (27%)	136 (22%)	199 (32%)
Other	38 (3%)	13 (2%)	25 (4%)
<b>Insurance</b>			
Public	818 (66%)	412 (68%)	406 (65%)
Private/Other	180 (15%)	89 (15%)	91 (15%)
Unknown	237 (19%)	109 (18%)	128 (20%)

- **Gender:** More females and fewer males have a positive PHQ-9A than statistically expected (p<.001)
- **Race:** More white patients have a positive PHQ-9A than statistically expected (p<.05)
- **Language:** More English-speaking and fewer Spanish-speaking patients have a positive PHQ-9A than statistically expected (p<.001)

**Table 2. Demographic Information by Psychosocial score at Visit 1**

	Total Psychosocial completed at Visit 1	Elevated Psychosocial at Visit 1	Not Elevated Psychosocial at Visit 1
<b>Sample</b>	N=1033	N=821	N=212
<b>Mean Age (SD)</b>	13.2 (1.883)	13.2 (1.906)	13.1 (1.790)
<b>Gender*</b>			
Female	540 (52%)	396 (48%)	144 (68%)
Male	493 (48%)	425 (52%)	68 (32%)
<b>Ethnicity</b>			
Hispanic/Latino	554 (54%)	444 (54%)	110 (52%)
Non-Hispanic/Non-Latino	440 (43%)	346 (42%)	94 (44%)
Unknown	39 (4%)	31 (4%)	8 (4%)
<b>Race</b>			
Native American/ Pacific Islander	4	3	1
Asian	23 (2%)	17 (2%)	6 (3%)
African American/Black	245 (24%)	194 (24%)	51 (24%)
White	299 (29%)	238 (29%)	61 (29%)
More than one race	111 (11%)	89 (11%)	22 (10%)
Other/Unknown	351 (34%)	280 (34%)	71 (33%)
<b>Primary Language*</b>			
English	702 (68%)	539 (66%)	163 (77%)
Spanish	296 (29%)	253 (31%)	43 (20%)
Other	35 (3%)	29 (3%)	6 (3%)
<b>Insurance</b>			
Public	676 (65%)	539 (66%)	137 (65%)
Private/Other	141 (14%)	111 (14%)	30 (14%)
Unknown	216 (21%)	171 (21%)	45 (21%)

- **Gender:** Fewer females and more males have a positive Psychosocial than statistically expected (p<.001)
- **Language:** Fewer English-speaking and more Spanish-speaking patients have a positive Psychosocial than statistically expected (p=0.007)

**Table 3. Correlation Matrix of PHQ-9A and PSS**

		Caregiver Report					
		Social Isolation	Alcohol/Marijuana	Illegal Drugs	Family Safety	Depression/Anxiety	Thoughts of Self-Harm
Adolescent Report	PHQ 1 (Little Interest)	0.02	0.07	0.00	-0.05	0.04	0.15
	PHQ 2 (Feeling depressed/hopeless)	0.11**	0.12**	0.04	0.12**	<b>0.18**</b>	0.09
	PHQ 3 (Sleep issues)	0.01	0.03	0.04	0.01	<b>0.07*</b>	0.02
	PHQ 4 (Feeling tired)	0.02	0.06	0.02	0.01	<b>0.10**</b>	0.06
	PHQ 5 (Poor appetite)	0.07	0.08*	0.05	0.01	<b>0.19**</b>	-0.03
	PHQ 6 (Feeling failure)	0.12**	0.09*	0.04	0.06	<b>0.13**</b>	0.20*
	PHQ 7 (Trouble concentrating)	0.02	0.13**	0.06	0.03	<b>0.09**</b>	0.02
	PHQ 8 (Moving slowly/being restless)	0.02	0.08*	0.02	0.02	<b>0.09**</b>	0.09
	PHQ 9 (suicidal ideation)	0.07*	0.02	0.02	0.06	<b>0.12**</b>	<b>0.25**</b>

- No significant relationships between resource needs on PSS screener and PHQ-9A items
- Almost all PHQ-9A items were significantly correlated with caregiver PSS item "Depression & Anxiety"
- Strongest relationship between PHQ-9A item 9: Adolescent Suicidal Thoughts and PSS: Suicidal Thoughts

## Discussion

- ❖ **Resource needs** items on PSS were **not correlated with PHQ-9A** items.
- ❖ **Caregiver mental health and family well-being** have a **stronger association** with **adolescent depression** and overall mental health.
- ❖ Resource needs may be a contributor to family well-being by causing distress and affecting family mental health, which also affects adolescent well-being.
- ❖ Findings are consistent with previous studies on relationship between parental/caregiver mental health and adolescent mental health.
- ❖ Demographic differences could suggest: Certain groups of individuals may feel more or less comfortable reporting depressive symptoms than others, and certain minoritized groups may have more psychosocial needs
- ❖ Identifying and addressing concerns related to a caregiver's resource needs may improve caregiver's mental health, which may, in turn, decrease adolescent-depression symptoms.
- ❖ Care coordination and behavioral health navigator involvement for resources to address caregiver mental health and well-being are especially important areas for intervention, training, and funding/reimbursement

### Limitations

- ❖ Data are based on self-reports from adolescents (PHQ-9A) & caregivers (PSS) on the screeners.
- ❖ Manually inputted data may contain some human error; reviewing raw screening data may ensure accuracy.

## Future Implications

- ❖ Focus on longitudinal analyses that examine resource needs and family-level factors that may impact adolescent depression scores.
- ❖ Examine which intervention (intervening on adolescent depression or family/parental well-being) is more effective for overall family and adolescent mental health.
- ❖ Identify and examine factors that may contribute to male caregivers' psychosocial needs.

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