



Evalumetrics Research

Evalumetrics Research
58 Scotland Road
Canandaigua, New York 14424
585-245-2681
roblilliseval@gmail.com
www.evalumetrics.org

Risk Factors for Teen Pregnancy

Results from the 2021 Evalumetrics Youth Survey

Wayne County

Evalumetrics Research Brief EYS21-002

Summary

Factors That Predict Teen Pregnancy

A significant number of Wayne County teens have risk factors that are related to risk of teen pregnancy. Results from the 2021 EYS found:

- More than one in 12 (8.4%) Wayne County 8th, 10th, and 12th grader was at risk from favorable attitudes toward antisocial behavior, a predictor of teen pregnancy. One in 12 were also at risk from poor family discipline and from lack of family supervision and rules, also predictors.
- More than one in seven (14.7%) 12th grade males and females were at risk of lack of family supervision and rules, 13.4% from family history of antisocial behavior, and 12.7% of 12th grade males were at risk from poor family discipline.
- In terms of overall risk, more than one in five (21.9%) 12th grade students in Wayne County scored above the risk level on two or more scales. More than one in five (21.4%) males and one in five (20.4%) females were at high risk.
- One in three (31.4%) 8th, 10th, and 12th grade students had one or more teen pregnancy risk factor.
- Adverse Childhood Experiences (ACE) are related to teen pregnancy risk factors with those young people reporting an ACE score of two or more being more than twice as likely to also report two or more teen pregnancy risk factors.

Introduction

Teen pregnancy and childbearing bring substantial social and economic costs through immediate and long-term impacts on teen parents and their children¹.

- Pregnancy and birth are significant contributors to high school dropout rates among girls. Only about 50% of teen mothers receive a high school diploma by 22 years of age, whereas approximately 90% of women who do not give birth during adolescence graduate from high school.²
- The children of teenage mothers are more likely to have lower school achievement and to drop out of high school, have more health problems, be incarcerated at some time during adolescence, give birth as a teenager, and face unemployment as a young adult³.

Less favorable socioeconomic conditions, such as low education and low-income levels of a teen's family, may contribute to high teen birth rates.⁴ Teens in child welfare systems are at higher risk of teen pregnancy and birth than other groups. For example, young women living in foster care are more than twice as likely to become pregnant than those not in foster care.

Risk and Protective Factor Model developed at the University of Washington by J. David Hawkins, Richard Catalano, and Janet Miller⁵. The authors' meta-analysis determined that several risk factors were significant predictors of teen pregnancy either as a teen mother or teen father. These include:

- Lack of Family Supervision and Rules (Family Domain)
- Poor Family Discipline (Family Domain)
- Family Conflict (Family Domain)
- Family History of Antisocial Behavior (Family Domain)
- Little Commitment to School (School Domain)
- Antisocial Behavior (Peer/Individual Domain)
- Favorable Attitudes Toward Antisocial Behavior (Peer/Individual Domain)
- Interaction with Antisocial Peers (Peer/Individual Domain)

In order to prevent teen pregnancies, it is essential to determine the prevalence of these factors and identify and implement evidence-based prevention and intervention strategies to reduce these factors or mitigate their impact.

¹ <https://www.cdc.gov/teenpregnancy/about/index.htm>

² Perper K, Peterson K, Manlove J. Diploma Attainment Among Teen Mothers. Child Trends, Fact Sheet Publication #2010-01: Washington, DC: Child Trends; 2010

³ Hoffman SD. Kids Having Kids: Economic Costs and Social Consequences of Teen Pregnancy. Washington, DC: The Urban Institute Press; 2008.

⁴ Penman-Aguilar A, Carter M, Snead MC, Kourtis AP. Socioeconomic disadvantage as a social determinant of teen childbearing in the U.S. Public Health Rep. 2013;128(suppl 1):5-22.

⁵ Hawkins J. Sustained Decreases in Risk Exposure and Youth Problem Behaviors After Installation of the Communities That Care Prevention System in a Randomized Trial. Arch Pediatr Adolesc Med. 2012;166(2):141.

Method

The Evalumetrics Youth Survey (EYS) has been conducted in schools throughout Wayne County every odd-numbered year since 2013 and most recently, in 2021. The EYS is based on the Risk and Protective Factor Model developed at the University of Washington by J. David Hawkins, Richard Catalano, and Janet Miller. The EYS asks students about several critical health risk behaviors such as substance use, violence, and depression. The EYS also includes questions about students' attitudes toward and connection to school, family and community.

The Risk and Protective Factor Model was developed by reviewing two decades of research that identified a link between certain risk factors and several problem behaviors and between protective factors and avoidance of problem behaviors. A major strength of this model is that by implementing strategies to reduce factors that predict one problem, (e.g. alcohol and other drug abuse), communities will likely reduce other negative behaviors, such as violence, delinquency, gambling, dropping out of school, and **teen-pregnancy**.

The EYS survey instrument is a self-report, web-based form completed by students in a classroom setting. The sample for the survey is all 6th, 8th, 10th and 12th grade students in 11 Wayne County Schools. Each risk and protective factor is represented by one or more scale consisting of one or more item from the survey. Each student is given a score for each of the scales. Separate analyses were conducted for middle school (grades 6 & 8) and high school (grade 10 & 12). Based on the distribution of scores for over 20,000 students in a 2001 survey in the five-county Finger Lakes region, standard scores (z-scores) are calculated by subtracting the mean score from each individual's score and dividing by the standard deviation. Students with a standard score of 1 or greater on any risk factor were considered to be at-risk. A standard score of -1 or less on any protective factor was considered a lack of protection and therefore at-risk.

The tables below show the proportion of Wayne County students who scored above the risk level on the factors that predict increased risk of teen pregnancy.

Table 1 shows the prevalence of risk from the teen pregnancy-related factors among 8th, 10th and 12th grade students in Wayne County. More than one in 12 (7.7%) scored at risk from poor family discipline and from lack of family supervision and rules (7.3%). Nearly one in 12 (7.1%) lack commitment to schools. Table 2 shows that among female students in 8th, 10th, and 12th grade, the most prevalent pregnancy-related risk factors were family conflict (9.9%), family history of antisocial behavior (8.2%), and favorable attitudes toward antisocial behavior (8.2%). Among male students, as shown in table 3, the most prevalent factors were poor family discipline (10.2%); favorable attitudes toward antisocial behavior (7.5%), and lack of commitment to school (7.2%).

Totals
8th, 10th, and 12th

Table 1
Proportion at Risk from Factors
8th, 10th, and 12th Grade Students

	Wayne County	Wayne County
Year	2019	2021
N=	2462	2087
Lack of Family Supervision and Rules (R6-F)	10.2%	7.3%
Poor Family Discipline (R7-F)	11.4%	7.7%
Family Conflict (R8-F)	8.0%	7.9%
Family History of Antisocial Behavior (R9-F)	6.8%	7.7%
Little Commitment to School (R13-S)	9.8%	7.1%
Antisocial Behavior (R17-PI)	4.2%	2.1%
Favorable Attitudes Toward Antisocial Behavior (R18-PI)	8.6%	8.4%
Interaction with Antisocial Peers (R20-PI)	8.4%	2.3%

Table 2
Proportion at Risk from Factors
8th, 10th, and 12th Grade Females

	Wayne County	Wayne County
Year	2019	2021
N=	1193	993
Lack of Family Supervision and Rules (R6-F)	10.4%	7.1%
Poor Family Discipline (R7-F)	9.5%	5.2%
Family Conflict (R8-F)	9.8%	9.9%
Family History of Antisocial Behavior (R9-F)	6.2%	8.2%
Little Commitment to School (R13-S)	10.2%	6.8%
Antisocial Behavior (R17-PI)	1.9%	1.4%
Favorable Attitudes Toward Antisocial Behavior (R18-PI)	6.6%	8.2%
Interaction with Antisocial Peers (R20-PI)	6.7%	1.9%

Table 3
Proportion at Risk from Factors
8th, 10th, and 12th Grade Males

	Wayne County	Wayne County
Year	2019	2021
N=	1101	990
Lack of Family Supervision and Rules (R6-F)	9.7%	6.6%
Poor Family Discipline (R7-F)	13.4%	10.2%
Family Conflict (R8-F)	5.7%	4.0%
Family History of Antisocial Behavior (R9-F)	6.5%	6.7%
Little Commitment to School (R13-S)	9.3%	7.2%
Antisocial Behavior (R17-PI)	5.5%	2.7%
Favorable Attitudes Toward Antisocial Behavior (R18-PI)	9.6%	7.5%
Interaction with Antisocial Peers (R20-PI)	8.7%	2.7%

Among 8th grade students, more than one in 12 (8.5%) were at risk favorable attitudes toward antisocial behavior, while 7.3% were at risk from family conflict.

Table 4
Proportion at Risk from Factors
8th Grade Students

	Wayne County	Wayne County
Year	2019	2021
N=	874	700
Lack of Family Supervision and Rules (R6-F)	8.0%	5.7%
Poor Family Discipline (R7-F)	12.9%	7.1%
Family Conflict (R8-F)	8.5%	7.3%
Family History of Antisocial Behavior (R9-F)	5.1%	6.1%
Little Commitment to School (R13-S)	9.2%	6.3%
Antisocial Behavior (R17-PI)	3.1%	1.3%
Favorable Attitudes Toward Antisocial Behavior (R18-PI)	7.9%	8.5%
Interaction with Antisocial Peers (R20-PI)	7.6%	1.3%

Among 8th grade females nearly one in 10 (9.9%) were at risk from favorable attitudes toward antisocial behaviors and from family conflict (9.3%).

Table 5
Proportion at Risk from Factors
8th Grade Females

	Wayne County	Wayne County
Year	2019	2021
N=	415	344
Lack of Family Supervision and Rules (R6-F)	7.7%	6.4%
Poor Family Discipline (R7-F)	9.9%	5.2%
Family Conflict (R8-F)	10.4%	9.3%
Family History of Antisocial Behavior (R9-F)	4.8%	6.7%
Little Commitment to School (R13-S)	10.1%	7.3%
Antisocial Behavior (R17-PI)	0.5%	0.6%
Favorable Attitudes Toward Antisocial Behavior (R18-PI)	7.2%	9.9%
Interaction with Antisocial Peers (R20-PI)	6.0%	1.5%

One in 12 (8.4%) 8th grade males scored above the risk level for Poor Family Discipline.

Table 6
Proportion at Risk from Factors
8th Grade Males

	Wayne County	Wayne County
Year	2019	2021
N=	399	356
Lack of Family Supervision and Rules (R6-F)	8.3%	4.5%
Poor Family Discipline (R7-F)	16.3%	8.4%
Family Conflict (R8-F)	6.3%	3.4%
Family History of Antisocial Behavior (R9-F)	5.0%	3.9%
Little Commitment to School (R13-S)	8.3%	5.3%
Antisocial Behavior (R17-PI)	5.3%	1.7%
Favorable Attitudes Toward Antisocial Behavior (R18-PI)	8.3%	5.9%
Interaction with Antisocial Peers (R20-PI)	7.5%	0.8%

Table 7 shows results for 10th grade students in Wayne County. Nearly one in 10 (9.5%) were at risk from family history of antisocial behavior and 8.6% were at risk from family conflict.

Table 7
Proportion at Risk from Factors
10th Grade Students

	Wayne County	Wayne County
Year	2019	2021
N=	809	661
Lack of Family Supervision and Rules (R6-F)	8.5%	8.9%
Poor Family Discipline (R7-F)	9.8%	8.3%
Family Conflict (R8-F)	8.0%	8.6%
Family History of Antisocial Behavior (R9-F)	6.9%	9.5%
Little Commitment to School (R13-S)	8.4%	8.0%
Antisocial Behavior (R17-PI)	4.2%	2.9%
Favorable Attitudes Toward Antisocial Behavior (R18-PI)	9.3%	8.3%
Interaction with Antisocial Peers (R20-PI)	8.0%	3.4%

Table 8 indicates that more than one in 10 (10.6%) 10th grade females scored at risk from family conflict and nearly one in 10 (9.7%) were at risk from family history of antisocial behavior.

Table 8
Proportion at Risk from Factors
10th Grade Females

	Wayne County	Wayne County
Year	2019	2021
N=	393	350
Lack of Family Supervision and Rules (R6-F)	9.4%	7.7%
Poor Family Discipline (R7-F)	9.7%	5.1%
Family Conflict (R8-F)	9.7%	10.6%
Family History of Antisocial Behavior (R9-F)	6.6%	9.7%
Little Commitment to School (R13-S)	8.7%	6.3%
Antisocial Behavior (R17-PI)	1.5%	2.3%
Favorable Attitudes Toward Antisocial Behavior (R18-PI)	6.4%	6.6%
Interaction with Antisocial Peers (R20-PI)	5.6%	2.3%

Among 10th grade males, more than one in 10 (12.2%) were at risk from poor family discipline and one in 10 (10.0%) were at risk from family history of antisocial behavior.

Table 9

Proportion at Risk from Factors

10th Grade Males

	Wayne County	Wayne County
Year	2019	2021
N=	359	299
Lack of Family Supervision and Rules (R6-F)	7.0%	9.0%
Poor Family Discipline (R7-F)	9.7%	12.2%
Family Conflict (R8-F)	5.8%	4.8%
Family History of Antisocial Behavior (R9-F)	6.4%	10.0%
Little Commitment to School (R13-S)	8.1%	9.3%
Antisocial Behavior (R17-PI)	6.1%	3.9%
Favorable Attitudes Toward Antisocial Behavior (R18-PI)	11.1%	9.3%
Interaction with Antisocial Peers (R20-PI)	9.5%	4.8%

Table 10 shows EYS results for 12th grade students in Wayne County. One in seven (14.7%) scored at risk from lack of family supervision and rules while 13.4% were at risk family history of antisocial behavior.

Table 10

Proportion at Risk from Factors

12th Grade Students

	Wayne County	Wayne County
Year	2019	2021
N=	779	640
Lack of Family Supervision and Rules (R6-F)	14.4%	14.7%
Poor Family Discipline (R7-F)	11.3%	12.7%
Family Conflict (R8-F)	7.4%	8.1%
Family History of Antisocial Behavior (R9-F)	8.7%	13.4%
Little Commitment to School (R13-S)	11.8%	12.5%
Antisocial Behavior (R17-PI)	5.3%	4.2%
Favorable Attitudes Toward Antisocial Behavior (R18-PI)	8.7%	6.7%
Interaction with Antisocial Peers (R20-PI)	9.6%	4.2%

One in seven (15.4%) 12th grade female students were at risk from family history of antisocial behavior and 12.4% were at risk from lack of family supervision and rules.

Table11
Proportion at Risk from Factors

12th Grade Females	Wayne County	Wayne County
Year	2019	2021
N=	385	299
Lack of Family Supervision and Rules (R6-F)	14.3%	12.4%
Poor Family Discipline (R7-F)	8.8%	9.0%
Family Conflict (R8-F)	9.4%	10.7%
Family History of Antisocial Behavior (R9-F)	7.3%	15.4%
Little Commitment to School (R13-S)	11.9%	10.0%
Antisocial Behavior (R17-PI)	3.9%	2.7%
Favorable Attitudes Toward Antisocial Behavior (R18-PI)	6.2%	6.0%
Interaction with Antisocial Peers (R20-PI)	8.6%	3.3%

Table 12 shows that one in seven (15.8%) 12th grade male students scored above the risk level for lack of supervision and rules and for poor family discipline (15.8%).

Table 12
Proportion at Risk from Factors

12th Grade Males	Wayne County	Wayne County
Year	2019	2021
N=	343	323
Lack of Family Supervision and Rules (R6-F)	14.3%	15.8%
Poor Family Discipline (R7-F)	14.0%	15.8%
Family Conflict (R8-F)	5.0%	5.3%
Family History of Antisocial Behavior (R9-F)	8.2%	11.5%
Little Commitment to School (R13-S)	11.7%	13.3%
Antisocial Behavior (R17-PI)	5.2%	5.6%
Favorable Attitudes Toward Antisocial Behavior (R18-PI)	9.6%	5.9%
Interaction with Antisocial Peers (R20-PI)	9.3%	5.0%

The risk and protective model posits that risk of a negative outcome, (e.g., teen pregnancy) increases as the number of risk factors increases. Table 13 shows the breakdown of overall risk represented as the number of teen pregnancy-related factors. More than five of 10, 6th and 8th graders and nearly one in four (23.2%) 12th grade students scored above the risk level on one or more risk factor for teen pregnancy. Using two or more factors as a designation of high risk, one in 10 (10.7%) 6th graders and 15.0% of 10th graders had two or more risk factors. Among 12th grade students in Wayne County, more than one in five (22.1%) were at risk from two or more teen pregnancy risk factors. As tables 14 and 15 show, the pattern is similar for females and males though 10th and 12th grade males are somewhat more likely to be at the high-risk level.

Table 13

		All Students		
Number of Pregnancy Risk Factors		8th	10th	12th
None		71.1%	65.7%	54.8%
1		18.2%	19.3%	23.3%
2		6.8%	8.0%	13.3%
3		2.5%	3.3%	5.2%
4		0.09%	1.7%	1.6%
5		0.03%	1.0%	1.1%
6		0.01%	0.6%	0.03%
7		0.0%	0.04%	0.02%
8		0.0%	0.0%	0.04%
Two or More		10.7%	15.0%	22.1%

Table 14

		Females		
Number of Pregnancy Risk Factors		8th	10th	12th
None		69.2%	69.4%	58.5%
1		19.5%	17.4%	21.1%
2		6.4%	7.7%	13.0%
3		3.5%	2.0%	5.0%
4		1.2%	1.4%	1.0%
5		0.0%	1.1%	0.03%
6		0.03%	0.06%	0.03%
7		0.0%	0.03%	0.03%
8		0.0%	0.0%	0.03%
Two or More		11.3%	13.1%	20.2%

Table 15

Number of Pregnancy Risk Factors	Males		
	8th	10th	12th
None	74.7%	63.3%	52.6%
1	17.7%	20.3%	26.0%
2	5.9%	8.4%	13.0%
3	1.4%	3.9%	4.6%
4	0.0%	2.3%	1.5%
5	0.03%	0.06%	1.5%
7	0.0%	0.06%	0.0%
6	0.0%	0.06%	0.06%
Two or More	7.6%	16.4%	21.2%

Adverse Childhood Experiences

There is a lack of research directly demonstrating the relationship between adverse childhood experiences and teen pregnancy. One recent study found a significant relationship between adverse childhood experiences (trauma) and male involvement in teen pregnancy.⁶ Another recent publication addresses the relationship between ACE and lack of self-control.⁷

The current EYS analysis investigated the relationship between adverse childhood experiences and risk factors known to predict teen pregnancy. In addition to the risk factors represented by EYS survey scales, adverse childhood experience (ACE Score) has been demonstrated to be a powerful predictor of many behavioral health problems measured in the EYS. The EYS asks students about how many adverse childhood experiences they have experienced. Two or more childhood trauma (ACE score) has been showed to be a predictive level for problem behaviors. Table 16 shows the relationship between ACE scores of two or more to having two or more teen

⁶ Adverse childhood experiences and risk of paternity in teen pregnancy. Anda RF; Chapman DP; Felitti VJ; Edwards V; Williamson DF; Croft JB; Giles WH; Anda, Robert F; Chapman, Daniel P; Felitti, Vincent J; Edwards, Valerie; Williamson, David F; Croft, Janet B; Giles, Wayne H. Obstetrics & Gynecology Volume 100, Issue 1, July 2002, Pages 37-45

⁷ Are Adverse Childhood Experiences Associated with Deficits in Self-Control? A Test Among Two Independent Samples of Youth. Meldrum, Ryan; Campion Young; Soor, Sadhika; Hay, Carter; Copp, Jennifer; Trace, Madison; Smith-Darden, Joanne; and Kernsmith, Poco. Criminal Justice & Behavior. Feb2020, Vol. 47 Issue 2, p166-186. 21p.

pregnancy risk factors. Overall, students with ACE scores of two or more are nearly twice as likely (ratio=1.97) to have two or more teen pregnancy risk factors. Females with ACE of two or more are more likely to be at risk with 10th girls with ACE of two or more being 3.31 times more likely to have two or more teen pregnancy risk factors. Eighth grade females are 2.89 times more likely to have teen pregnancy factors and 12th grade females are 2.25 times more likely. All the ratios are statistically significant.

Table 16

2 or more pregnancy risk factors

	Ace 0 or 1	Ace 2 or more	ratio	sig.
All	11.5%	22.7%	1.97	yes
8th	10.6%	22.2%	2.10	yes
8th girls	8.1%	23.4%	2.89	yes
8th boys	11.3%	20.4%	1.81	yes
10th	11.7%	25.1%	2.14	yes
10th girls	6.9%	22.9%	3.31	yes
10th boys	15.3%	24.6%	1.60	yes
12th	17.4%	27.9%	1.61	yes
12th girls	10.6%	23.8%	2.25	yes
12th boys	21.2%	31.2%	1.47	yes