

Parenting – It's a life: Where and how youth learn about establishing paternity, child support, and co-parenting

Bethany H. McCurdy, Carl F. Weems^{*}, Heather L. Rouse, Sesong Jeon¹, Maya Bartel, Janet N. Melby, Kate Goudy, Jo Ann Lee

Human Development and Family Studies, Iowa State University, USA

ARTICLE INFO

Keywords:

Establishing paternity
Co-parenting
Child support

ABSTRACT

Theory and research suggest the importance of establishing paternity, co-parenting, and child support for positive child and youth development. However, youth's relative knowledge of these topics is not well understood. Thus we examine these in the context of other parenting issues and how this information varied by parents, school/teachers, friends, and social media. We also sought to provide preliminary data on parenting programming to determine if the programming was associated with perceived increases in knowledge about these and other parenting topics. Data from 1713 students in middle and high schools who attended one or more *Parenting: It's a Life* modules in their school were available for analysis. Youth reported existing knowledge on establishing paternity, co-parenting, and child support relatively low compared to other topics such as peer pressure and healthy relationships. Among the four sources of information surveyed, youth received the most information from parents and caregivers and the least amount of information from social media. Youth reported significant increases in knowledge regarding parenting topics following exposure to *Parenting: It's a Life* curriculum. The information youth receive on content such as establishing paternity, co-parenting, and child support is relatively low. School-based parenting programs focused on these topics may help educate youth about these important parenting topics before parenthood.

1. Introduction

Non-marital births have continued to rise for decades (Osborne & Dillon, 2015) with 39.8% of all births to unmarried women in 2017 (Martin, Hamilton, Osterman, Driscoll, & Drake, 2018). Among unwed parents, establishing paternity is positively associated with increased child support and visitation rights, as well as numerous psychological and social benefits for children. For example, child support payments are positively related to children's educational attainment (Aughinbaugh, 2001; King, 1994). Moreover, when child support is coupled with co-parenting, fathers are more likely to make child support payments (Hofferth & Pinzon, 2011), which in turn is related to children's healthy development (Flouri, 2006).

Research suggests that fathers who establish paternity are more likely to be involved with their children, and such involvement is associated with a range of beneficial child outcomes in cognition, language development, and emotional regulation skills (Argys & Peters,

2001; Bronte-Tinkew, Carrano, Horowitz, & Kinukawa, 2008; Cabrera, Shannon, & Tamis-LeMonda, 2007; Carlson & Magnuson, 2011; Knox, 1996). Moreover, fathers who establish paternity are more likely to support their children financially, and children who receive regular child support from their fathers experience fewer internalizing and externalizing behavioral problems, coupled with greater academic achievement (Argys & Peters, 2001; Bronte-Tinkew et al., 2008; Cabrera et al., 2007; Carlson & Magnuson, 2011; Knox, 1996). Financial support from non-custodial parents is often a critical support (Lee et al., 2020). Further, positive co-parenting and fathers' engagement promote healthy child social and cognitive functioning (see Eira Nunes, de Roten, El Ghaziri, Favez, & Darwiche, 2020). Given these well-documented reasons, efforts to maintain high rates of paternity establishment, maintain consistent child support, and positive co-parenting are an important human services priority (Lee et al., 2020; Weems et al., 2020).

A wealth of research indicates that parenting practices affect many areas of child development and continue to influence children's well-

^{*} Corresponding author at: Department of Human Development and Family Studies, Iowa State University, Ames, IA 50011, USA.

E-mail address: cweems@iastate.edu (C.F. Weems).

¹ Current address: Department of Child Development and Family Studies, College of Human Ecology at Kyungpook National University, Republic of Korea.

being across the lifespan (Belsky & de Haan, 2011; Bornstein et al., 2015; Morris, Cui, & Steinberg, 2013). Aspects of parenting and the parent–child relationship are associated with a wide range of positive and negative outcomes for children and teens (Aquilino & Supple, 2001). Parents are important socializing influences on the emotional development of children (Eisenberg, Cumberland, & Spinrad, 1998) through both direct and indirect means. Because of this, numerous parenting and pre-parenting programs have been developed to help both current parents and individuals who plan to have or plan to care for children (Butler, Sorace, & Beach, 2017; Mueller et al., 2016). While numerous middle and high school-based parenting programs exist, the information provided in these programs can vary greatly.

Parenting programs commonly cover health topics, including sexual education, contraceptives, STIs, and abstinence (Goesling, Colman, Trenholm, Terzian, & Moore, 2013; Mueller et al., 2016; Shearer, Gya-ben, Gallagher, & Klerman, 2005). Programming also tends to include life skills such as decision-making and healthy relationships, resources such as managing money, health issues such as contraception, and miscellaneous topics such as relationships and finding local services (Arons, Decker, Yarger, Malvin, & Brindis, 2016; Goesling et al., 2013; Mueller et al., 2016; Shearer et al., 2005; Ott, Rouse, Resseguie, Smith, & Woodcox, 2011). For example, Working to Institutionalize Sex Ed (WISE) is prototypical of the focus of many school-based programs, providing students with age-appropriate life skills and sexual health education (Butler et al., 2017). While WISE has helped schools introduce or improve their sex education, it does not include education around money and co-parenting (Butler et al., 2017; Fairholm, personal communication, May 7, 2018). Similarly, the Iowa-based Community Adolescent Pregnancy Prevention (CAPP) program works to help schools and communities provide improved school-based programming; like WISE, CAPP utilizes a curriculum that focuses on life skills and health education (Klaus & Saunders, 2016). Less common from our review of existing programming appears to be information/modules on establishing paternity, co-parenting, and child support issues—issues that often affect unwed teen mothers and fathers. As noted above, while research shows these to be important to child and youth positive development—these topics appear to be less common targets of inquiry in the developmental or family literature and therefore less salient topics in families, schools, and among peers (see Turetsky, 2019).

Hospital-based Voluntary Paternity Affidavit (VPA) programs are well established and are the most common way to establish paternity for children born outside of marriage (Mincy, Garfinkel, & Nepomnyaschy, 2005; Osborne & Dillon, 2015). School-based programming designed to address teen pregnancy prevention would provide a strategic opportunity to educate youth on paternity establishment, co-parenting, and child support issues that often affect unwed teen parents. In this paper, we use data collected as part of a program evaluation of *Parenting: It's a Life* (PIAL; see e.g., Bartel, Jeon, Liyanage, Rouse, & Weems, 2018; Child Welfare Research and Training Project, 2021). PIAL is a school-based curriculum that includes several components common to teen life skills programming by introducing teens to financial realities of being a teen parent, responsible decision-making, healthy romantic relationships, addressing peer pressure, and, importantly, adds unique modules related to paternity establishment and child support.

The Child Support Recovery Unit (CSRU) within the Iowa Department of Human Services (DHS) is responsible for establishing and enforcing child support orders across the state. The collaboration between DHS and the Iowa State University's Child Welfare Research and Training Project (CWRTP) supports training, outreach, and research related to child support recovery. These programs are designed to aid parents and families to help ensure families receive the child support they need in order to be able to meet the financial and health needs of their children. CWRTP mobilizes expert knowledge and state of the art practices through engaged scholarship/applied research, direct programming, and data analysis to facilitate CSRU goals (see Weems et al., 2020). These include engaging and supporting schools in offering PIAL

learning modules in Family and Consumer Sciences, Life Skills, Health, and Psychology classes. Based upon the ecological model of child support facilitation (Weems et al., 2020), local organizations, such as schools, play a role in ensuring healthy and supported children through “pre-parenting” outreach. Unlike other school-based parenting programs, PIAL is one of a few programs that provide education around co-parenting, the costs of raising a child, information on establishing paternity, and child support education. These topics are often left out of other school-based parenting programs.

Based on extant developmental theory and data, there are numerous influences on adolescent knowledge and behavior; these include the relative importance of peer and parental influences (Coakley et al., 2017; Stanton et al., 2004; Steinberg, Lamborn, Dornbusch, & Darling, 1992). For example, youth typically receive information regarding health topics very commonly from parents and, when relevant, seek other sources of information for health topics, such as peers (Moore & Rosenthal, 2007). However, teachers and schools are also influences on health education and, more recently, social media has emerged as potentially important influences (Lal, Nguyen, & Theriault, 2018; Zhao & Zhang, 2017). Revealing the gaps in content where youth are not receiving education on important topics that surround health education may inform the implementation of programs that cover important topics.

This study had two related goals: First, to examine youth's perceptions regarding their access to parenting information such as establishing paternity, co-parenting, and child support in the context of other parenting issues. We hypothesized (1) that youth would rate receiving information on content such as establishing paternity, co-parenting, and child support relatively low compared to for example information on healthy relationships and peer-pressure which are theoretically relatively more salient topics in families, schools, and among peers (Turetsky, 2019). We also explored how exposure to this information varied by the potential source of parenting information—namely parents versus school/teachers, friends, and social media. The second goal was to determine whether the PIAL modules were associated with perceived increases in knowledge about various parenting topics. We hypothesized (2) that youth would report increases in perceived knowledge and its implications but that these may vary by content topics.

2. Method

2.1. Data set

In this paper, we use secondary data collected as part of a program evaluation of PIAL. As part of a statewide effort to educate youth, the Iowa Attorney General's Office partnered with the Iowa DHS and Iowa State University's CWRTP to develop and provide this programming to middle and high schools. PIAL was delivered to schools interested in integrating this information as part of their curriculum via a direct invitation to CWRTP. PIAL, a free curriculum designed for grades 7–12, introduces teens to the financial realities of being a teen parent, responsible decision-making, healthy relationships, peer pressure, and concepts related to paternity and child support (Child Welfare Research and Training Project, 2021). The teaching materials are delivered as part of the school curriculum in Family and Consumer Sciences, Life Skills, Health, and Psychology.

2.2. Procedures

Trained university staff delivered the PIAL curriculum modules using the PIAL facilitator manuals in collaboration with classroom teachers. The modules were delivered as part of each school's routine curriculum delivery within school health classes, family and consumer sciences classes, or as part of other educational programming. The specific modules selected varied based on each school's needs, population, and facilitator availability. PIAL program evaluation data were collected as

part of the PIAL delivery.

The university Institutional Review Board (IRB) determined this study was ‘exempt’ in accordance per federal regulations (45CFR46.102 and 21CFR56). All procedures performed involving human participants were in accordance with the ethical standards of the institutional and/or national research committee (ISU IRB number 19–327) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

For this research project, completely de-identified data were extracted from the program evaluation data set for the 2016–2017 and 2017–2018 school years (i.e., anonymous data were extracted from program evaluation files). These consisted of surveys that assessed sources of information about the PIAL parenting topics, and perceived increases in knowledge of the parenting topics after attending one or more of the PIAL modules. Because this curriculum was delivered as part of routine educational programming within the schools and not as a research project, written parental consent was not attained. Schools self-selected the number and types of modules they desired for their schools, with schools requesting from one to all of the modules. In all schools, oral assent was obtained from the youth participants (i.e., youth were not required to complete the questionnaires or to participate), and survey responses were anonymous.

2.3. Participants

Data from 1713 students were available. These students came from 25 different middle schools (34.8%, $Mean_{age} = 13.47$, $SD_{age} = 0.74$), high schools (63.2%, $Mean_{age} = 15.85$, $SD_{age} = 1.26$), and alternative schools (2.0%, $Mean_{age} = 16.62$, $SD_{age} = 0.78$). Inclusion in the study required the student to attend at least one module (herein referred to as “topic” for goal one) and to complete a survey. Additional demographic information is presented in Table 1.

2.4. Measures

As noted, the PIAL curriculum is divided into ten modules about parenting: (1) Decisions and Goals, (2) Peer Pressure, (3) Healthy Relationships, (4) Risk and Protective Factors, (5) Resiliency, (6) Costs of Raising a Child, (7) Managing Money, (8) Establishing Paternity, (9) Co-Parenting, and (10) Child Support. To examine youths’ perception regarding their existing access to parenting information across these topics, students completed a survey after the presentation of each module. Each survey assessed information regarding the specific topic presented in the module, such as their prior exposure to the topic across four sources of information (i.e., parent/caretaker, teachers, friends, or social media), by indicating whether they already learned “Not much,”

Table 1
Demographics of Youth across Iowa Schools.

Factor	Total sample	Middle School	High School	Alternative School
Gender				
n	1652	551	1067	34
% Male	6.3	44.1	32.1	41.2
% Female	61.4	52.3	66.3	58.8
% Other	0.04	01.1	00.1	00.0
Race				
n	1678	574	1070	34
% White	72.0	59.6	80.8	73.5
% Black	04.1	08.2	02.1	04.2
% Hispanic	09.9	13.8	08.3	02.9
% Asian/Pacific Islander	02.7	04.5	02.0	00.0
% American Indian	00.6	01.0	00.3	02.9
% Multi-ethnic	06.1	08.0	05.1	11.8

Notes. 11 missing responses for gender; 35 missing responses for race.

“A little,” “Somewhat,” or “A lot” from each source of information.

To assess whether the PIAL modules were associated with perceived increases in knowledge about various parenting topics, the survey used a retrospective posttest design. Specifically, the survey included self-report of pre- to post-module/topic knowledge questions as well as questions that assessed perceived benefits, actions, and or intentions (i.e., the various questions span these, thus we use the term “implications” for short) that used a retrospective post/pre-design. Using a scale of “Not much,” “A little,” “Somewhat,” or “A lot,” the first question pre- and post-topic focused on “knowledge” asked the participant their ability to define and understand the topic (e.g., “Before/after the presentation, I was able to define paternity”) while the second question assessed the impact or behavioral “implications” (i.e., perceived benefits, actions, and or intentions) of having attended the module (e.g., Before versus after the presentation “I was able to know the benefits of establishing paternity” or “I was able to create a monthly budget”).

3. Results

All missing data were handled analysis-by-analysis. Examination of the distributions of the study variables indicated acceptable distributions for all variables. Given the nature of the variables (e.g., scales of “Not much,” “A little,” “Somewhat,” or “A lot,”), parametric analyses were supplemented with non-parametric alternatives.

3.1. Goal One: Youth’s perceptions regarding their access to parenting information and comparison across sources

To test the goal one hypothesis, data were analyzed with a 10 (between subjects “topic”) by 4 (within subjects “source”) repeated measures factorial ANOVA. Mauchly’s Test of Sphericity indicated that the assumption of sphericity had been violated and equal variances could not be assumed, and so the degrees of freedom for within-subjects effects were modified via the Greenhouse-Geisser procedure. Results indicated a significant effect of source [$F(2.82, 4363.47) = 151.38, p < .001$], topic [$F(9, 1549) = 9.69, p < .001$], and a significant source \times topic interaction [$F(25.35, 1450.27) = 8.74, p < .001$].

Given the significant interaction, the main effects were decomposed by using a series of separate one-way ANOVAs with follow-up tests (comparing across the 10 topics separately by source) and repeated measures ANOVAs comparing across the 4 repeated measures of source (separately by topics). Fig. 1 illustrates the mean differences in reports of information sources across parenting topics and Table 2 presents a summary of significant differences. As illustrated in Fig. 1, parents/caregivers as well as teachers had generally higher rating than friends/classmates and social media. As shown in Table 2 and Fig. 1, information on content such as Establishing Paternity, although varying somewhat by source, rated significantly lower than a number of other parenting topics such as Peer Pressure and Decisions and Goals. Similarly, Child Support also rated relatively low compared to other topic information such as Healthy Relationships and Peer Pressure.

3.2. Goal Two: Association of PIAL modules with perceived increases on knowledge and implication about various parenting topics

To test the hypothesis that there will be differences in the (a) knowledge and (b) implications reported after attending a module, data were separately analyzed with a 10 (between-subjects “module”) by 2 (within-subjects pre- and post-knowledge or implications scores) repeated measures factorial ANOVA. There was a significant effect of pre- and post on knowledge [$F(1, 1679) = 1619.16, p < .001$], a significant effect of module [$F(9, 1679) = 7.90, p < .001$], and a significant pre-post knowledge \times module interaction [$F(9, 1679) = 13.90, p < .001$]. Similarly, there was a significant effect of pre- and post on implications [$F(1, 1586) = 1185.92, p < .001$], a significant effect of module [$F(9, 1586) = 7.05, p < .001$], and a significant pre-post

Mean Rating by Source

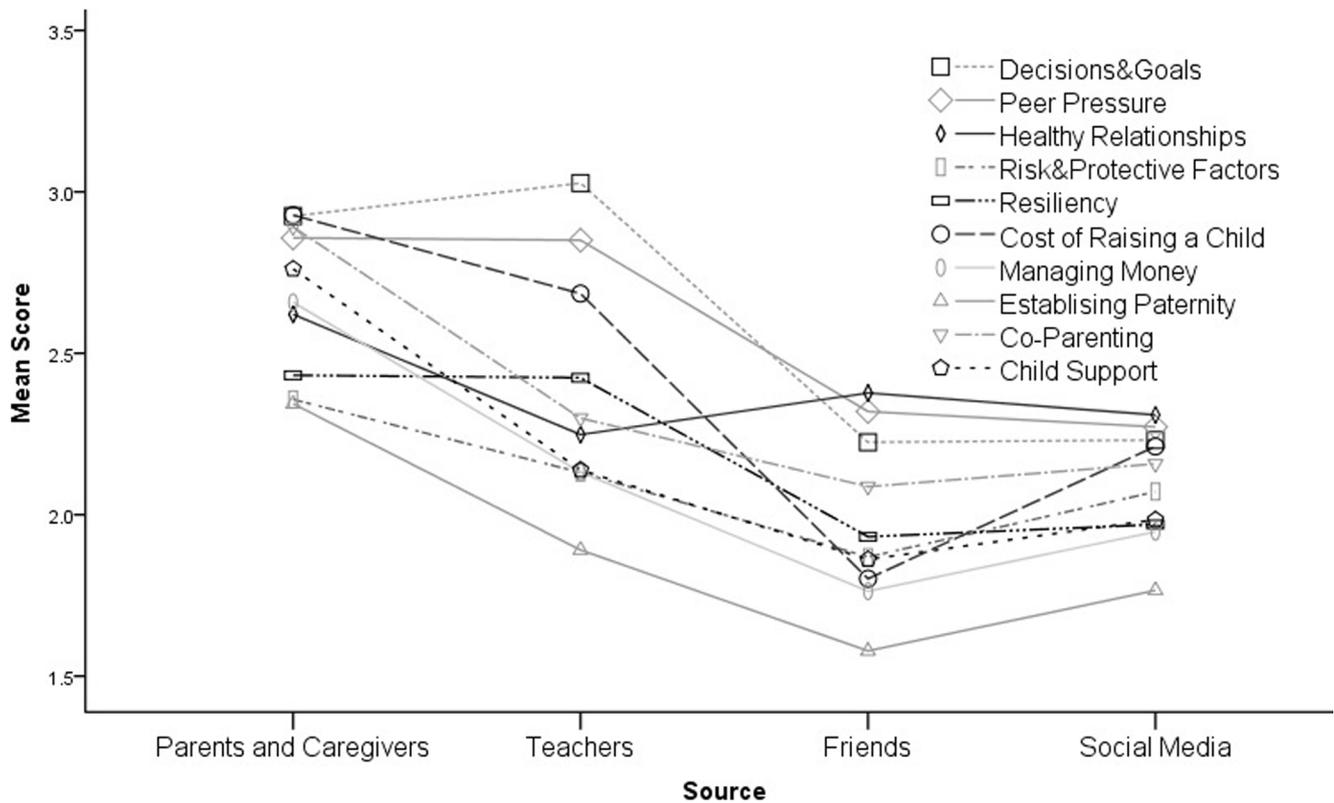


Fig. 1. Mean Rating by Source of Information. Figure shows the mean differences in ratings for the four information sources across the ten parenting topics.

Table 2
Means (Standard Deviations) and Multiple Comparisons of the Information Scores for Sources of Information.

Topic	Source				F
	Parent/Caretaker (N = 1682)	Teacher (N = 1662)	Friend/Classmate (N = 1650)	Social Media (N = 1582)	
Decisions and Goals	2.94 (0.91) _{c,d} ^{3,4,5,8}	3.02 (0.91) _{c,d} ^{1,3,4,5,6,7,8,9,10}	2.23 (1.01) _d ^{6,8}	2.24 (1.06)	37.92
Peer Pressure	2.85 (0.96) _{c,d} ^{4,5,8}	2.86 (1.00) _{c,d} ^{3,4,8,5,7,8,9,10}	2.33 (1.05) _d ^{4,5,6,8,10}	2.26 (1.12)	20.43
Healthy Relationships	2.64 (1.06) _{b,c,d} ^{1,6}	2.26 (1.00) _{c,d} ^{1,2,6}	2.37 (1.05) _d ^{4,5,6,7,8,10}	2.32 (1.12) _d ^{5,8,10}	13.10
Risk and Protective Factors	2.38 (0.96) _c ^{1,2,6,9}	2.16 (0.94) _c ^{1,2,6}	1.87 (0.98) _d ^{2,3}	2.07 (1.04)	6.40
Resiliency	2.44 (1.10) _{c,d} ^{2,6,9}	2.42 (1.00) _{c,d} ^{1,2}	1.93 (1.04) _d ^{2,3}	1.97 (1.05) _d ³	18.35
Cost of Raising a Child	2.94 (0.91) _{b,c,d} ^{3,4,5,8}	2.69 (0.95) _{c,d} ^{1,3,4,8,9,10}	1.85 (0.98) _d ^{1,2,3}	2.21 (0.99)	90.84
Managing Money	2.70 (0.93) _{b,c,d}	2.27 (0.97) _c ^{1,2}	1.79 (0.99) _d ³	1.95 (1.01)	11.25
Establishing Paternity	2.35 (1.09) _{b,c,d} ^{1,2,6,9}	1.96 (1.04) _c ^{1,2,6}	1.59 (0.92) _d ^{1,2,3,9}	1.75 (1.03) _d ³	15.69
Co-Parenting	2.89 (0.96) _{b,c,d} ^{4,5,8}	2.30 (0.95) _c ^{1,2,6}	2.08 (1.02) _d ⁸	2.16 (1.01)	40.83
Child Support	2.78 (1.01) _{b,c,d}	2.14 (0.94) _c ^{1,2,6}	1.87 (0.99) _d ^{2,3}	1.98 (0.90) _d ³	31.84
F	6.95	17.61	10.31	3.54	

Notes. Subscript letters indicate significant within-group differences of the following sources: a = Parent/Caretaker, b = Teacher, c = Friend/Classmate, d = Social Media; Superscript numbers indicate significant between-groups differences of the following superscripted topics: ¹ = Decisions and Goals, ² = Peer Pressure, ³ = Healthy Relationships, ⁴ = Risk and Protective Factors, ⁵ = Resiliency, ⁶ = Cost of Raising a Child, ⁷ = Managing Money, ⁸ = Establishing Paternity, ⁹ = Co-Parenting, ¹⁰ = Child Support.

implications × module interaction [$F(9, 1586) = 11.26, p < .001$]. Fig. 2a (knowledge) and 2b (implications) illustrate the differences in scores across modules.

Given the significant interaction, we decomposed the main effects by using a series of separate one-way ANOVAs with follow up t-tests (comparing across the 10 modules separately) and paired sample t-tests comparing pre- and post- separately by module. Table 3 summarizes the results are summarized. Because each of the paired t-tests indicated significant differences on pre versus post knowledge and implications for each module, we used Cohen's d to compare within-subjects relative differences pre versus post by module using the following formula:

$$d = \frac{|m_1 - m_2|}{\sqrt{s_1^2 + s_2^2 - (2rs_1s_2)}}$$

The largest effect sizes for knowledge were observed for the Resiliency, Child Support, and Establishing Paternity modules. The largest effect sizes for implications were observed for the Resiliency, Child Support, Establishing Paternity followed by Healthy Relationships and Risk and Protective Factors modules. Overall, we saw large effects for parenting topics that are less common in many parenting programs such as Establishing Paternity, Co-Parenting, and Child Support.

Mean Rating on Pre- and Post- Knowledge Assessment by Module

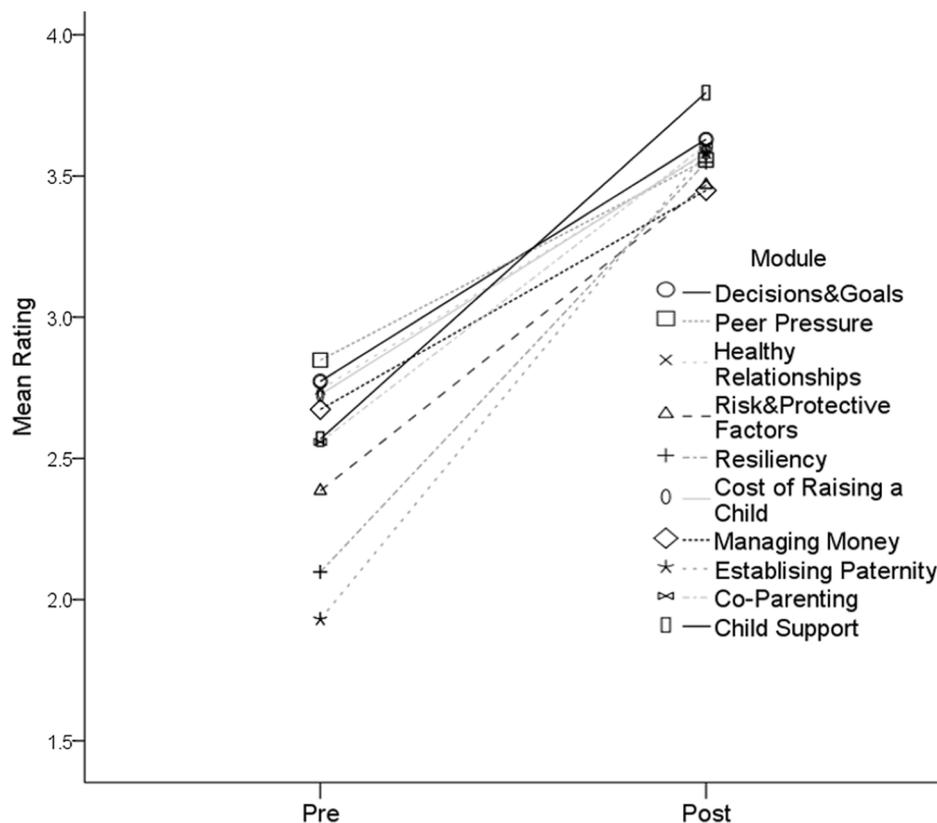


Fig. 2a. Differences in Knowledge Mean Scores by Module.

4. Discussion

Our results provide data on the level and sources of knowledge of various parenting topics and initial evidence that school-based programming may help youth learn about establishing paternity, co-parenting, and child support, issues that often affect unwed teen parents. The fact that 5.16 percent of all United States births in 2016–2019 were to mothers between ages 15–19 years (Centers for Disease Control and Prevention, 2019), indicates such information is critical for youth.

We also explored how exposure to parenting information varied by source (i.e., parents/caregivers versus school/teachers, friends, and social media). Overall, students reported receiving the most information from parents/caregivers and the least amount of information from social media. Literature suggests that youth identify parents as important sources of sex and reproductive information (Boyas, Stauss, & Murphy-Erby, 2012). Thus, we would expect parents and caregivers to remain important sources regarding parenting topics. Indeed, focus-group data reported by Koren (2019) found that 85% of the teens wanted parents to be a primary source of information. In line with our results of relatively lower reports of learning via social media, and despite the growth in social media use, research continues to report social media as a relatively lower source of information on sex education compared to schools, parents, and peers (Bleakley, Khurana, Hennessy, & Ellithorpe, 2018; Yu, 2010). For example, Bleakley et al. (2018) reported that 61% had learned “some” or “a lot” about sex in general from their parents, while 54% reported learning from peers and 54% from media (see also: Rothman et al., 2021). Notably, learning via social media may be a secondary effect, as youth who receive information about these topics may find this information by chance when engaging in other online activities (Erdelez, 2005). However, the findings are complex and warrant further investigation of how youth receive information about parenting topics through social media and the potential appropriate

delivery of such information from online interventions. Determining whether youth purposefully use social media as a tool for self-education or if attained education is a product of secondary learning needs to be further explored.

The second question we explored was the association between PIAL modules and perceived increases in knowledge and implications about various parenting topics. We hypothesized that youth would report increases in perceived knowledge and intentions but that these may vary by content topic. Other specialized parenting intervention programs for teen parents previously have shown to be effective in educating youth by improving parenting abilities and reducing stress from life hassles (Woods et al., 2003). We found that youth indeed reported significant increases in knowledge regarding parenting topics provided by the PIAL curriculum, as well as their intentions relative to these topics. This indicates that while youth are receiving information about parenting from various sources, school-based parenting programs can help educate youth about these important topics. Unlike other school-based programs with emphasis on health and sex education (i.e., information about contraceptives use and education on STDs), PIAL focuses on life skills and providing knowledge and skill-building resources to youth before they reach parenthood. PIAL remains one of a few programs that provides education around co-parenting, the costs of raising a child, and budgeting along with offering establishing paternity and child support education, topics often excluded in other school-based parenting programs.

Although this study makes an advance in knowledge for the parenting education field, it is not without limitations. The main limitations are the non-controlled design and generalizability. The cross-sectional design of this study prohibits causal or directional inferences. We can only conclude that we found associations. The retrospective nature of the change questions limits the conclusions as well. Additional controlled trials are needed to establish efficacy and

Mean Rating on Pre- and Post- Implications Assessment by Module

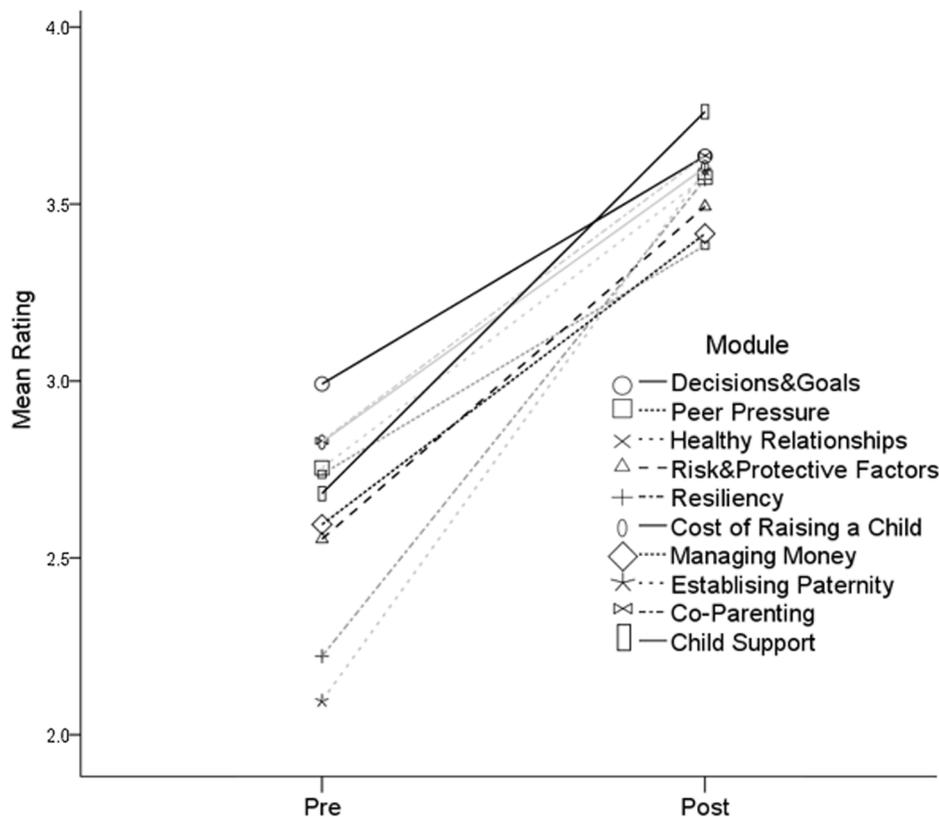


Fig. 2b. Differences in Implications Mean Scores by Module.

Table 3 Means (Standard Deviations) and Multiple Comparisons of the Knowledge Scores by Module.

Topic	N	Pre-module Knowledge (T1)		Post-module Knowledge (T2)		d	
		Q1	Q2	Q1	Q2	Q1	Q2
Decisions and Goals	147	2.77 (0.75) ^{4,5,8}	3.01 (0.79) ^{4,5,8}	3.63 (0.57)	3.66 (0.53) ²	1.11	0.82
Peer Pressure	151	2.85 (0.87) ^{4,5,8}	2.75 (0.95) ^{5,8}	3.56 (0.73)	3.40 (0.80) ^{1,9,10}	0.77	0.69
Healthy Relationships	424	2.75 (0.84) ^{4,5,8}	2.77 (0.87) ^{5,8}	3.58 (0.75)	3.60 (0.68)	1.02	1.01
Risk and Protective Factors	64	2.39 (0.94) ^{1,2,3,8}	2.56 (0.97) ¹	3.47 (0.78) ¹⁰	3.52 (0.76)	1.14	1.01
Resiliency	128	2.10 (0.90) ^{1,2,3,6,7,9,10}	2.23 (0.93) ^{1,2,3,6,9,10}	3.55 (0.66)	3.59 (0.65)	1.61	1.36
Cost of Raising a Child	244	2.73 (0.83) ^{5,8}	2.84 (0.87) ^{5,8}	3.58 (0.73)	3.63 (0.65)	0.82	0.80
Managing Money	48	2.67 (0.85) ^{5,8}	2.60 (0.92)	3.45 (0.68)	3.44 (0.74)	0.78	0.75
Establishing Paternity	71	1.93 (0.89) ^{1,2,3,4,6,7,9,10}	2.10 (0.99) ^{1,2,3,6,9,10}	3.58 (0.65)	3.62 (0.62)	1.34	1.26
Co-Parenting	192	2.56 (0.92) ^{5,8}	2.84 (0.93) ^{5,8}	3.61 (0.61)	3.66 (0.64) ²	1.19	0.96
Child Support	127	2.57 (0.84) ^{5,8}	2.69 (0.86) ^{5,8}	3.80 (0.44) ⁴	3.79 (0.45) ²	1.53	1.34
F		15.02	11.30	2.10	3.50		

Notes. Superscript numbers indicate significant between-groups differences of the following superscripted topics: ¹ = Decisions and Goals, ² = Peer Pressure, ³ = Healthy Relationships, ⁴ = Risk and Protective Factors, ⁵ = Resiliency, ⁶ = Cost of Raising a Child, ⁷ = Managing Money, ⁸ = Establishing Paternity, ⁹ = Co-Parenting, ¹⁰ = Child Support.

effectiveness. The sample was also composed of community school youth with limited diversity and a large portion of females; thus, findings may not be generalizable to broader populations. Finally, the data were not collected for research purposes, and this research project used a de-identified data set extracted from the program evaluation files. Because of this, no program fidelity measures were obtained. Moreover, including additional measures of parenting knowledge and using a pre-post follow up design would have strengthened the report and findings.

5. Conclusions

While our results show that youth are receiving information about topics surrounding parenting such as establishing paternity, co-

parenting, and child support, the quality and quantity received is relatively low compared to broader life skills topics that are generally covered by school-based parenting intervention programs. Indeed, one highly reported source of information regarding parenting information is through school/teachers, indicating that schools remain an important source of information for youth. Many parenting programs currently focus on broader life skills that emphasize health and sex education but omit other essential topics. Further research on how youth learn these topics in families, in schools, and among peers is a potentially important line of future inquiry (Turetsky, 2019).

Additionally, parenting programs more often target young parents. While some pregnancy prevention programs have been shown to reduce rates of teen pregnancy (see review by Marseille et al., 2018), it is

important to provide education about multiple facets of parenting, especially for youth who are or expect to become pregnant. Implementing programs that focus on these important topics related to parenting have the potential to prepare youth before they reach parenthood. Educating unwed teen parents and/or teens who are at risk for pregnancy on how to receive support, use resources, and build life skills can lead to positive development for both the parent and child.

The present study suggests that *Parenting: It's a Life* is a promising curriculum to teach concepts related to paternity and child support. The entire PIAL curriculum is licensed under a Creative Commons Attribution-ShareAlike 3.0 United States License. This license requires only that the user attribute the original content to the Iowa State University Child Welfare Research and Training Project. The entire curriculum is available to download at no charge. The ten modules can be used independently, and teachers can use, adapt, or incorporate any of the materials as they see fit into their own teaching.

This study advances the literature on the potential of parenting programs for educating youth on issues surrounding parenting that are not widely discussed. Determining the gaps in content where youth are not receiving education can help develop the implementation of programs that cover important information regarding health education.

Funding

Funding for this project was made possible by the Child Support Recovery Unit of the Iowa Department of Human Services through a contract with Iowa State University (Weems, Melby, & Rouse; FY18 Contract No. BOC-18-003). The work was performed pursuant to an agreement with the Bureau, and the content does not necessarily reflect the opinions, findings, and conclusions of the Bureau of Child Support Recovery.

CRediT authorship contribution statement

Bethany H. McCurdy: Conceptualization, Data curation, Formal analysis, Methodology, Writing - original draft, Writing - review & editing. **Carl F. Weems:** Conceptualization, Investigation, Methodology, Project administration, Funding acquisition, Supervision, Resources, Validation, Visualization, Writing - original draft, Writing - review & editing. **Heather L. Rouse:** Conceptualization, Investigation, Project administration, Funding acquisition, Resources, Validation, Writing - review & editing. **Sesong Jeon:** Visualization, Writing - review & editing. **Maya Bartel:** Data curation, Visualization, Writing - review & editing. **Janet N. Melby:** Conceptualization, Investigation, Project administration, Funding acquisition, Supervision, Resources, Software, Validation, Visualization, Writing - review & editing. **Kate Goudy:** Visualization, Project administration, Supervision, Resources, Writing - review & editing. **Jo Ann Lee:** Visualization, Project administration, Supervision, Resources, Writing - review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

- Aquillino, W. S., & Supple, A. J. (2001). Long-term effects of parenting practices during adolescence on well-being outcomes in young adulthood. *Journal of Family Issues*, 22(3), 289–308.
- Argys, L. M., & Peters, H. E. (2001). Interactions between unmarried fathers and their children: The role of paternity establishment and child-support policies. *The American Economic Review*, 91(2), 125–129.
- Arons, A., Decker, M., Yarger, J., Malvin, J., & Brindis, C. (2016). Implementation in practice: Adaptations to sexuality education curricula in California. *Journal of School Health*, 86(9), 669–676.

- Aughinbaugh, A. (2001). Signals of child achievement as determinants of child support. *The American Economic Review*, 91(2), 140–144.
- Bartel, M., Jeon, S., Liyanage, M. G., Rouse, H., & Weems, C., 2018, November. The Evolution of Parenting: It's a Life. Poster presented at the Human Development and Family Studies Research Symposium, Iowa State University, <https://childwelfareproject.hs.iastate.edu/parenting-its-a-life/>.
- Belsky, J., & de Haan, M. (2011). Annual research review: Parenting and children's brain development: The end of the beginning. *Journal of Child Psychology and Psychiatry*, 52(4), 409–428.
- Bleakley, A., Khurana, A., Hennessy, M., & Ellithorpe, M. (2018). How patterns of learning about sexual information among adolescents are related to sexual behaviors. *Perspectives on Sexual and Reproductive Health*, 50(1), 15–23.
- Bornstein, M. H., Leventahl, T., & Lerner, R. M. (Eds.). (2015). *Handbook of Child Psychology and Developmental Science: Ecological Settings and Processes*. Wiley.
- Boyas, J. F., Stauss, K. A., & Murphy-Erby, Y. (2012). Predictors of frequency of sexual health communication: Perceptions from early adolescent youth in rural Arkansas. *Child and Adolescent Social Work Journal*, 29(4), 267–284.
- Bronte-Tinkew, J., Carrano, J., Horowitz, A., & Kinukawa, A. (2008). Involvement among resident fathers and links to infant cognitive outcomes. *Journal of Family Issues*, 29(9), 1211–1244. <https://doi.org/10.1177/0192513X08318145>
- Butler, R. S., Sorace, D., & Beach, K. H. (2017). Institutionalizing sex education in diverse US school districts. *Journal of Adolescent Health*, 62, 149–156.
- Cabrera, N. J., Shannon, J. D., & Tamis-LeMonda, C. (2007). Fathers' influence on their children's cognitive and emotional development: From toddlers to pre-K. *Applied Developmental Science*, 11(4), 208–213. <https://doi.org/10.1080/1088690701762100>
- Carlson, M. J., & Magnuson, K. A. (2011). Low-income fathers' influence on children. *Annals of the American Academy of Political and Social Science*, 635(1), 95–116. <https://doi.org/10.1177/0002716210393853>
- Centers for Disease Control and Prevention (2019). National Center for Health Statistics. Retrieved January, 2021 from <http://wonder.cdc.gov/nativity-expanded-current.html>.
- Child Welfare Research and Training Project (2021). Parenting: It's a life. <https://childwelfareproject.hs.iastate.edu/parenting-its-a-life/> (accessed 1-20-2021).
- Coakley, T. M., Randolph, S., Shears, J., Beamon, E. R., Collins, P., & Sides, T. (2017). Parent–youth communication to reduce at-risk sexual behavior: A systematic literature review. *Journal of Human Behavior in the Social Environment*, 27(6), 609–624.
- Eira Nunes, C., de Roten, Y., El Ghaziri, N., Favez, N., & Darwiche, J. (2020). Co-Parenting programs: A systematic review and meta-analysis. *Family Relations*.
- Eisenberg, N., Cumberland, A., & Spinrad, T. L. (1998). Parental socialization of emotion. *Psychological Inquiry*, 9(4), 241–273.
- Erdelez, S. (2005). Information encountering. In Fisher, K. E., Erdelez, S., & McKechnie L. (Eds.), *Theories of information behavior* (pp. 179–184). Medford, N.J: Information Today, Inc. (ASIST Monograph Series).
- Flouri, E. (2006). Non-resident fathers' relationships with their secondary school age children: Determinants and children's mental health outcomes. *Journal of Adolescence*, 29(4), 525–538. <https://doi.org/10.1016/j.adolescence.2005.08.004>
- Goessling, B., Colman, S., Trenholm, C., Terzian, M., & Moore, K. (2013). Programs to reduce teen pregnancy, sexually transmitted infections, and associated sexual risky behaviors: A systematic review. *Journal of Adolescent Health*, 54, 499–507.
- Hofferth, S. L., & Pinzon, A. M. (2011). Do nonresidential fathers' financial support and contact improve children's health? *Journal of Family and Economic Issues*, 32(2), 280–295. <https://doi.org/10.1007/s10834-010-9237-9>
- King, V. (1994). Variation in the consequences of nonresident father involvement for children's well-being. *Journal of Marriage and Family*, 56(4), 963–972. <https://doi.org/10.2307/353606>
- Klaus, T. W., & Saunders, E. (2016). Using collective impact in support of communitywide teen pregnancy prevention initiatives. *Community Development*, 1–18. <https://doi.org/10.1080/15575330.2015.1131172>
- Koren, A. (2019). Reproductive health for teens: Parents want in too. *Journal of Sex & Marital Therapy*, 45(5), 406–413.
- Knox, V. W. (1996). The effects of child support payments on developmental outcomes for elementary school-age children. *The Journal of Human Resources*, 31(4), 816–840. <https://doi.org/10.2307/146148>
- Lal, S., Nguyen, V., & Theriault, J. (2018). Seeking mental health information and support online: Experiences and perspectives of young people receiving treatment for first-episode psychosis. *Early Intervention in Psychiatry*, 12(3), 324–330.
- Lee, D., Weems, C. F., Rouse, H. L., Melby, J. N., Zhao, F., Bartel, M., & Goudy, K. (2020). Targeted child support enforcement and its association with child support payments: Evidence from a program evaluation. *Children and Youth Services Review*, 118, 105343.
- Marseille, E., Mirzazadeh, A., Biggs, M. A., Miller, A. P., Horvath, H., Lightfoot, M., ... Kahn, J. G. (2018). Effectiveness of school-based Teen Pregnancy Prevention Programs in the USA: A systematic review and meta-analysis. *Prevention Science*, 19(4), 468–489.
- Martin, J. A., Hamilton, B. E., Osterman, M. J., Driscoll, A. K., & Drake, P. (2018). Births: final data for 2017. *National Vital Statistics Reports*, 67(8).
- Mincy, R., Garfinkel, I., & Nepomnyaschy, L. (2005). In-hospital paternity establishment and father involvement in Fragile Families. *Journal of Marriage and Family*, 67(3), 611–626. <https://doi.org/10.1111/j.1741-3737.2005.00157.x>
- Moore, S. M., & Rosenthal, D. A. (2007). *Sexuality in adolescence: Current trends*. Routledge.
- Morris, A. S., Cui, L., & Steinberg, L. (2013). Parenting research and themes: What we have learned and where to go next. In R. E. Larzelere, A. S. Morris, & A. W. Harrist

- (Eds.), *Authoritative parenting: Synthesizing nurturance and discipline for optimal child development* (pp. 35–58). Washington, DC: American Psychological Association.
- Mueller, T., Tevendale, H., Fuller, T., House, L., Romero, L., Brttain, A., & Varansi, B. (2016). Teen pregnancy prevention: Implementation of a multicomponent, community-wide approach. *Journal of Adolescent Health, 60*, S9–S17.
- Osborne, C., & Dillon, D. (2015). Dads on the dotted line: A look at the in-hospital paternity establishment process. *Journal of Applied Research on Children: Informing Policy for Children at Risk, 5*(2). <https://digitalcommons.library.tmc.edu/childrenatrisk/vol5/iss2/10>.
- Ott, M., Rouse, A., Resseguie, M., Smith, J., & Woodcox, H. (2011). Community-level successes and challenges to implementing adolescent sex education programs. *Maternal and Child Health Journal, 15*(2), 169–177.
- Rothman, E. F., Beckmeyer, J. J., Herbenick, D., Fu, T. C., Dodge, B., & Fortenberry, J. D. (2021). The prevalence of using pornography for information about how to have sex: Findings from a nationally representative survey of US adolescents and young adults. *Archives of Sexual Behavior, 50*(2), 629–646.
- Shearer, D., Gyaben, S., Gallagher, K., & Klerman, L. (2005). Selecting, implementing, and evaluating teen pregnancy prevention interventions: Lessons from the CDC's community coalition partnership programs for the prevention of teen pregnancy. *Journal of Adolescent Health, 37*(3), S42–S52.
- Stanton, B., Cole, M., Galbraith, J., Li, X., Pendleton, S., Cottrel, L., ... Kaljee, L. (2004). Randomized trial of a parent intervention: Parents can make a difference in long-term adolescent risk behaviors, perceptions, and knowledge. *Archives of Pediatrics & Adolescent Medicine, 158*(10), 947–955.
- Steinberg, L., Lamborn, S. D., Dornbusch, S. M., & Darling, N. (1992). Impact of parenting practices on adolescent achievement: Authoritative parenting, school involvement, and encouragement to succeed. *Child Development, 63*(5), 1266–1281.
- Turetsky, V. (2019). Llama, llama, child support under Obama. In N. Hart & M. Yohannes (Eds.), *Evidence works: Cases where evidence meaningfully informed policy* (pp. 58–69). Bipartisan Policy Center.
- Weems, C. F., Rouse, H. L., Melby, J. N., Jeon, S., Goudy, K., McCurdy, B. H., & Stanek, A. R. (2020). A partnership approach to paternity establishment: Child welfare research and training project ecological model and preliminary data. *Families in Society, 101*, 180–189. <https://doi.org/10.1177/104438941989227>
- Woods, E. R., Obeidallah-Davis, D., Sherry, M. K., Ettinger, S. L., Simms, E. U., Dixon, R. R., ... Cox, J. E. (2003). The parenting project for teen mothers: the impact of a nurturing curriculum on adolescent parenting skills and life hassles. *Ambulatory Pediatrics, 3*(5), 240–245.
- Yu, J. (2010). Sex education beyond school: Implications for practice and research. *Sex Education, 10*(2), 187–199.
- Zhao, Y., & Zhang, J. (2017). Consumer health information seeking in social media: A literature review. *Health Information & Libraries Journal, 34*(4), 268–283.