HHS Public Access

Author manuscript

J Adolesc Health. Author manuscript; available in PMC 2024 December 05.

Published in final edited form as:

J Adolesc Health. 2023 February ; 72(2): 189–196. doi:10.1016/j.jadohealth.2022.09.014.

Parenting Practices and Adolescent Internalizing Symptoms in the United States, 1991–2019

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Abstract

Purpose: Adolescent internalizing symptoms are increasing in the United States. Changes in parenting practices, including monitoring and communication, have been hypothesized to contribute to these increases. We aimed to estimate trends in parenting practices and understand whether shifts in such practices explain increases in internalizing symptoms.

Methods: Using 1991–2019 Monitoring the Future data (N = 933,645), we examined trends in five parental practices (i.e., knowledge [three combined indicators], monitoring [four combined indicators], communication, weekend curfew, social permission) with ordinal regressions. We tested associations between parental practices and indicators of being in the top decile of depressive affect, low self-esteem, and self-derogation using survey-weighted logistic regressions, adjusted for gender, race/ethnicity, grade, and parental education.

Results: The prevalences of parental practices have not changed over time, with the exception of increases in parental knowledge, specifically parents knowing where an adolescent is after school (1999–2019 mean increase: 4.34 to 4.61 out of 5) and knowing an adolescent's location (4.16–4.49) and company at night (4.26–4.51). Higher levels of each practice were associated with lower internalizing symptoms (e.g., adjusted odds ratio for a high depressive affect based on a one-unit increase in parental knowledge: 0.89, 95% confidence interval: 0.88, 0.90). Patterns were consistent across internalizing outcomes and decade.

Discussion: Parental knowledge, monitoring, and other practices are stable protective factors for adolescent mental health. These factors are not changing in a manner that would plausibly underlie

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Conflicts of interest: The authors have no conflicts of interest to declare.

Supplementary Data

Supplementary data related to this article can be found at 10.1016/j.jadohealth.2022.09.014.

increases in internalizing symptoms. Future interventions should provide resources that support these parental practices which are tied to adolescent internalizing symptoms.

Keywords

Monitoring; Parenting; Adolescent; Depression; Self-esteem

Accumulating evidence suggests that mental health has declined among adolescents in the United States over the past decade. Increases in the prevalence of depressive symptoms and major depressive disorder among adolescents began around 2011 [1,2] and correspond with parallel increases in the proportion of emergency department visits for psychiatric reasons, rates of suicide, and rates of suicide attempts [3,4]. Concurrently, utilization of mental healthcare for internalizing symptoms has also increased [5]. Given the substantial morbidity and functional impairment associated with adolescent internalizing symptoms [6,7], factors driving these trends need to be identified to inform preventive interventions and public health efforts.

Increases in internalizing symptoms among adolescents are likely due to a variety of recent changes to the social environment and interactions of adolescents. These include content of social and digital media [8], diminished sleep quality and quantity [9], concerns about climate change [10], polarization of political views [10], online and offline bullying [11], growing wealth inequality [10] and perceptions of lack of safety at school [12], among others. However, the extent to which these factors are sufficiently strongly associated with population-level adolescent internalizing symptoms remains largely questionable.

Parent–child relationships and parenting practices are critical components of child and adolescent mental health [13]. Thus, population-level changes in the frequency and nature of parent–child interactions could potentially underlie some of the increases in internalizing symptoms. Parenting practices are a diverse, complex set of behaviors and domains, ranging from parental knowledge (i.e., knowing where your child is and with whom), monitoring (i.e., active, involved behaviors that facilitate checking on your child), communication (which contributes to parental knowledge and allows parents to help when problems arise), and boundaries on time use (e.g., curfew establishing when an adolescent needs to be home or the autonomy of permitting an adolescent out on school nights). Any of these has the potential to support adolescent wellbeing either directly through the surveillance of situations or issues that could harm adolescents or by facilitating a greater parental understanding of their adolescent's life and schedule while balancing limits and autonomy.

Higher levels of parental knowledge, which is sometimes mislabelled as monitoring but refers to the information itself rather than the behaviors used to acquire it, are tied to fewer adolescent depressive symptoms [14,15] and improved behavioral outcomes, such as a lower likelihood of an adolescent using alcohol and cannabis [15–17] and less risky sexual health behaviors (e.g., higher condom use) [16,18]. In a similar vein, positive parent–child communication, marked by low criticism and high levels of warmth, is associated with lower internalizing symptoms and higher self-esteem [19,20].

Despite robust connections with adolescent wellbeing, few studies have examined the degree to which parenting practices have changed over time. There is a common perception that parenting has become more intensive for recent generations of children and adolescents. Indeed, the media and popular press have advanced the notions of overinvolved and overprotective parenting (commonly referred to as “helicopter parenting”) as a result of technological advances that allow parents to monitor their children more closely than in the past [21]. Controversy persists among parents on these perceived trends of heightened supervision and other intensified parenting practices, with ongoing debates pertaining to their potential benefits and detriments [22,23], although research has not thoroughly examined these trends in recent years. Although studies outside of the United States have documented some changes in parenting practices through time [24,25], none have been conducted recently enough to inform trends in the past decade and none focus on U.S. data.

If changing parenting practices explain increases in internalizing symptoms among U.S. adolescents, we would expect to observe contemporaneous changes in the prevalence of parenting practices that are related to internalizing symptoms and/or changes in the strength of the relationship between parenting practices and internalizing symptoms over time. In this study, we test these potential explanatory patterns using almost 30 years of data from the Monitoring the Future (MTF) study, a nationally-representative, repeated cross-sectional survey of U.S. adolescents. The objectives were to (1) examine trends in parental knowledge, monitoring, and other parental practices from 1991 to 2019 and (2) estimate associations between parental practices (parental knowledge, monitoring, communication, weekend curfew, and social permission) and adolescent depressive affect, self-derogation, and self-esteem, as well as changes in these associations over time.

Methods

Study sample

The MTF study includes an annual, nationally representative survey of school-attending U.S. adolescents [26]. This ongoing survey has examined the behaviors and beliefs of U.S. adolescents for decades. The study selects schools under a multistage random sampling design, inviting them to participate for two years. Schools that decline participation are replaced with schools of a similar size, urbanicity, and geographic location. Surveys are administered to students in grades 8, 10, and 12. All students were administered a core form of survey items and then randomly assigned to “subforms” with subform-specific sets of content; thus, students were not administered all survey items. We used cross-sectional survey data from years 1991–2019 to examine the study aims. For our analyses, grade 12 was excluded, as measurement of parenting practices was limited. Every year, approximately 30,000 students were sampled in grades 8 and 10, with student response rates ranging from 85% to 91% by grade and year. The MTF study is approved through the Institutional Review Board of University of Michigan.

There were 933,645 adolescents on the subforms and years that asked about these parental variables and scales, but sample size varied by outcomes due to specific year and subform coverage. Parental knowledge and weekend curfew items were only available from 1999 onward; the communication item was implemented in 1992 and the social permission item

was implemented in 1993. Sample size was lowest for parental knowledge and weekend curfew (220,173 respondents), followed by parental social permission (646,620), monitoring (713,472), and communication (900,805).

Measures

Parenting practices.—We examined five separate parenting practices: parental knowledge (three items, alpha = 0.86), monitoring (four items, alpha = 0.62), communication (one item), weekend curfew (one item), and social permission (one item). Table A1 provides full items. Parental knowledge was measured with three items (e.g., "My parents know where I am after school"). Response options were 1 (never) to 5 (always); item responses were summed to yield a scale with a range from 3–15. For parental monitoring, adolescents responded to the prompt: "How often do your parents (or stepparents or guardians) do the following?" for various behaviors (e.g., "Check on whether you have done your homework"). Response options were 1 (never) to 4 (often); item responses were summed to yield a scale with a range from 4–16. Parental communication was assessed with a single item: "If you were having problems in your life, do you think you would talk them over with one or both of your parents?" Response options were 1 (no) to 3 (yes, for most or all problems). Weekend curfew was assessed with a single item: "When I go out on weekend nights, I have to be home by a set time." Response options were 1 (never) to 5 (always). For parental social permission, adolescents responded to the prompt: "How often do your parents (or stepparents or guardians) do the following?" The item assessing social permission was "Allow you to go out with friends on school nights." Response options were 1 (never) to 4 (often). For all practices described above, responses were based on adolescent perception, without any additional input directly from parents.

Internalizing symptoms.—We examined three separate internalizing symptom categories: depressive affect, self-derogation, and low self-esteem. Four items were used to measure each variable, based on the extent to which students agreed or disagreed with certain statements (Table A2 provides a complete list of items for each variable). Responses for each item ranged from 1 (disagree) to 5 (agree). Items for each variable were summed to yield scores ranging from 4 to 20, with higher scores indicating higher depressive affect, higher self-derogation, and higher self-esteem. The depressive affect items are based on the Bentler Medical and Psychological Functioning Inventory's depression personality trait scale and have been used elsewhere to measure affective depressive symptoms [27–29] These items exhibit strong reliability among adolescents [30]. The self-esteem and self-derogation scales are adapted largely from the Rosenberg Self-Esteem Scale that examines positive and negative feelings about the self and was specifically designed for adolescents [31]. These scales have been operationalized and implemented similarly in other analyses of MTF data [32,33]. Due to non-normality of internalizing symptom scores, we created binary indicators for the highest decile of depressive affect (score > 13), given that the typical prevalence of past-year major depressive episodes among adolescents is around 10% [1]. We also created indicators of the highest decile of self-derogation (score > 15) and the lowest decile of self-esteem scores (score < 11). Distributions of these outcomes can be seen in Figure A1.

Sociodemographic characteristics.—Respondents were characterized based on the following sociodemographic characteristics: gender (male, female), race/ethnicity (American Indian or Alaskan Native, Asian or Pacific Islander, Black, Hispanic or Latino, Multiracial, Other, White), parental education (at least one parent with a college degree vs. not), and grade (8, 10).

Missing data

Respondents' missing data on a single internalizing symptom item were imputed with the mean of the other three items for a given variable; respondents' missing data on two or more internalizing symptom items were excluded from that logistic regression analysis, in alignment with prior research using these items [2]. This 2+ item missingness was 13.9% for depressive affect, 14.2% for self-derogation, and 13.8% for self-esteem. Those excluded for missing mental health data were more likely to be male, non-White, in grade 8, and have lower parental education. Missing parental practices and demographic variables were imputed via multiple imputations by chained equations in Stata 17.0 (five imputed datasets generated) for the subforms and years that covered each item. Each of the five parental practices had a separate multiple imputed dataset limited to the years and subforms where its items were asked, thereby imputing only respondent nonresponse as opposed to systematic exclusion. Missingness of parental practice data ranged from 13.8% (monitoring) to 16.6% (knowledge), whereas demographic missingness ranged from 3.5% (gender) to 18.4% (parental education).

Statistical analyses

Analyses were conducted in two stages. First, to examine trends over time in parenting practice items, we plotted survey-weighted means for each of the parenting practice variables. We then modelled these trends using ordinal regression models with survey year included as a continuous covariate and each parenting practice item as an outcome. Linear models were not used due to non-normality of the outcomes. Second, to examine associations between parenting practices and internalizing symptoms, we estimated logistic regression models with each parenting practice as the independent variable and top decile of each internalizing symptom category as a binary outcome, adjusted for sociodemographic characteristics (gender, race/ethnicity, grade, and parental education) as covariates. We examined these overall and in each decade, including an interaction term between decade and each parenting practice to test for possible temporal heterogeneity and by grade to examine potential developmental differences. We adjusted p values for each interaction between decade and parental practices with a false discovery rate correction to account for multiple testing [34]. All the regression models accounted for the complex sample design in the MTF.

Results

Table 1 displays the sociodemographic characteristics of the study sample. The sample was 51.0% female respondents, 58.7% White respondents, 52.2% eighth grade students, and 55.4% had a parent with a college degree.

Trends in parenting practices

Figure 1 shows trends in the mean self-reported scores for each parenting practice item among U.S. adolescents from 1991 to 2019. Means have been mostly static over time with the exception of parental knowledge items, specifically parents knowing where an adolescent is after school (1999–2019 mean increase: 4.34 [95% confidence interval {CI}: 4.31, 4.37] to 4.61 [4.58, 4.63] of 5), knowing an adolescent's location at night (4.16 [95% CI: 4.13, 4.20] to 4.49 [4.46, 4.51]), and knowing an adolescent's company at night (4.26 [95% CI: 4.23, 4.29] to 4.51 [4.49, 4.54]). Table 2 shows the estimates from ordinal models for associations between survey year and each parenting practice item. For all but the parental knowledge variables, any increases in the odds of each parenting practice were less than 1% between years for any possible dichotomization (e.g., the odds ratio [OR] for an adolescent being able to discuss most or all problems with a parent based on an increase of one year: 1.009, 95% CI: 1.007, 1.010). Associations for parental knowledge items were stronger at higher thresholds but were still relatively small (e.g., OR for parents always knowing where you are after school based on an increase of one year: 1.041, 95% CI: 1.037, 1.044). Parents helping with homework, parents giving chores, and parents letting their adolescent out on school nights showed very small declines over time, always less than a 2% change in the odds between years.

Parental practices and internalizing symptoms

Table 3 describes the association between each of the five overall parental practices (the knowledge scale, the monitoring scale, communication, weekend curfew, and social permission) and internalizing symptoms, adjusting for demographic factors. For all outcomes, a higher level of each parental practice was linked to fewer internalizing symptoms. The strength of this inverse relationship ranged across parental variables. It was weakest for social permission (i.e., being allowed out on school nights) where, for example, there was an adjusted OR of 0.94 (95% CI: 0.93, 0.96) for high depressive affect based on a one-unit increase in social permission. The strongest link between parental variables and internalizing symptoms was for parental communication (e.g., adjusted OR for high depressive affect based on one-unit increase: 0.38, 95% CI: 0.37, 0.39). These patterns were consistent across internalizing outcomes.

Table 4 examines heterogeneity in the associations across decades. There were limited interactions between decade and parental practices predicting internalizing symptoms and thus minimal evidence for shifts in the magnitude of these associations by decade. The strongest evidence of interaction existed for the interaction between decade and parental knowledge predicting depressive affect and social permission predicting low self-esteem (p = .0158 for both). The first of these was marked by a nonmonotonic shift (strongest inverse association from 2000 to 2009, weakest from 2010 to 2019), whereas the second of these was marked by a weaker inverse association from 1991 to 1999. The only other significant interaction was for the association of parental monitoring predicting depressive affect, which weakened slightly over time (p = .0235).

Table 5 examines heterogeneity across grade, with fairly consistent patterns emerging. Parental knowledge, monitoring, and communication had a stronger inverse relationship

with all outcomes among eighth grade adolescents, whereas being allowed out on school nights was more beneficial for 10th grade adolescents. Weekend curfew was typically more protective for eighth grade adolescents, although interactions for this parenting practice were not always significant.

Discussion

We examined temporal trends in parenting practices from 1991 to 2019 in the United States and associations between these practices and self-reported internalizing symptoms among adolescents attending 8th and 10th grade. With a large, nationally-representative sample and a decades-long study period that far exceeds other U.S. samples, these robust findings provide a much needed update to our current understanding of U.S. parenting practices and their impact on adolescent mental health. Although parental knowledge increased slightly over time, we found little evidence that other parenting practices had changed substantially over time–including monitoring and communication with youth. Higher levels of parenting practices were all linked to lower depressive affect and self-derogation and higher self-esteem. The magnitude of associations was relatively consistent across decades and parenting practices were more protective for younger adolescents with the exception of allowing adolescents out on school nights, suggesting differing developmental needs. Collectively, results suggest that parenting practices are unlikely to be driving changes in the prevalence of internalizing problems over time, and so other driving forces must be examined instead. Rather, parenting practices like consistent monitoring and communication have remained protective in adolescent mental health.

Many prior studies have found that parenting practices are inversely associated with internalizing problems and related outcomes [14,19]. Building on this literature, a key finding of the present study is that the magnitude of these protective associations largely did not diminish between 1991 and 2019. This suggests that even with the dramatic changes to adolescent lifestyles and modes of communication in recent decades, parenting practices continue to be associated with the wellbeing of youth. Numerous randomized controlled trials have tested the efficacy of parenting interventions, which aim to teach appropriate parenting skills, increase perceptions of self-efficacy, and improve communication [35]. In general, reviews of randomized controlled trials have found that parenting programs delivered during both childhood and adolescence were effective for improving adolescent outcomes, including internalizing problems, substance use, and externalizing behaviors [35,36]. However, a broad dissemination of these programs in pediatric primary care or other settings, such as schools, remains limited, leaving studies of implementation processes critical for wider and equitable accessibility [37].

Our results provide epidemiological evidence that would support the expansion of evidence-based parenting programs that increase communication and reduce conflict, which in turn may benefit children and adolescents as a result of increased time together and more positive interactions [38]. Furthermore, policies that expand social networks for parents may be beneficial for providing parents and caregivers with resources that would allow a greater focus on parenting practices. Evidence-based policies include child-related tax credits [39], paid family leave [40], and others which are described in detail elsewhere [41]. Although

these policies do not directly address parenting programs, they have an evidence base for supporting parental resources more broadly. Additional supporting programs and structural-level interventions that increase parents' ability to implement these practices, including the individual and community resources needed to do so, may be necessary to curb worsening mental health symptoms in adolescence.

Future studies could build on these findings in a variety of ways. Although we examined a broad range of parenting practices, there are other aspects of parenting not captured in this study that may have changed over time, such as parent-child conflict and parental warmth. In addition, the evidence of heterogeneity across grade warrants further study mapping the shifting value of parenting behaviors across an adolescent's lifespan. Parental monitoring and warmth have also been tied to other outcomes in youth, such as externalizing problems and substance use [15–17,42], and could possibly explain variation in these behaviors over time. Finally, some of the parenting practices examined in our study (e.g., help with homework, giving chores) are likely related to characteristics such as socioeconomic status and employment that affect a parent's resources and ability to engage in these practices. Given that trends in internalizing problems and related outcomes differ by sociodemographic characteristics [1,3], examining how these characteristics moderate associations between parenting practices and adolescent health could help target prevention efforts.

This study has limitations. Our analyses were based on cross-sectional data and should not be used to infer causality given that parenting practices may respond to adolescent mental health. In a related vein, we were not able to adjust for some confounders at the parent level, such as mental health and criminal history. The measures of internalizing problems covered depressive affect, self-derogation, and self-esteem but did not cover other possible manifestations, such as physical and neurovegetative symptoms, depressed mood, suicidality, or anxiety. The parenting items had additional limitations, particularly given that each domain was assessed with few items and several domains had a single item of unknown reliability. Parenting can be measured in terms of styles (i.e., authoritative, permissive, etc.), beliefs, or other dimensions. We primarily examined changes in parenting dimensions comprising knowledge, permission, and other factors, which may not reflect temporal changes in unmeasured facets of parenting. No set of items included in the MTF survey could fully account for the complexity of parenting, and so conclusions may not generalize to all parent–adolescent relationships. Still, the dimensions examined are important core components of parent–child dynamics and our results set groundwork for further research to build upon and add greater complexity. We encourage further studies to develop a more nuanced set of items to develop more complex models that better capture the diverse dimensions of parenting. Such studies may draw upon any number of validated measures examining family experiences [43].

Our data were based on self-report by adolescents and not parental perceptions or reports which may be different. For instance, parents may obtain information on their children through passive surveillance (e.g., tracking cell phones and other devices), which would facilitate parental knowledge in ways not always perceived by adolescents. Future research should examine these alternative pathways to parental knowledge and unsolicited adolescent disclosure (adolescents offering information about their behavior without being asked rather

than responding to specific parental requests for information). Technological modes of surveillance in particular represent a major shift in parenting since the beginning of the study period. Finally, some of the parenting practice items only applied in specific contexts (e.g., parental communication being about discussing problems only, not general communication), and so results should not be overextended beyond these specific contexts.

In summary, trends in most parenting practices showed remarkable stability between 1991 and 2019 in a nationally representative sample of U.S. adolescents, with only parental knowledge increasing slightly over time. Associations between parenting practices and internalizing problems were also relatively stable in magnitude, suggesting that parents continue to play an important role in promoting the mental health of their adolescent despite marked changes to adolescent lifestyles in more recent years. Structural interventions that increase resources facilitating these parental practices could have population-level effects on adolescent mental health. Future studies should examine trends in other parenting practices and their connections with other facets of adolescent wellbeing.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

These analyses are funded by grant R01DA048853 (PI: Keyes) and with support from the Columbia Center for Injury Science and Prevention (R49-CE003094). In addition, Dr. Martins reports funding from grant R01DA037866 and Dr. Hasin reports funding from grant R01DA048860. Dr. Mauro reports funding from grant K01DA045224.

Data Availability Statement:

Monitoring the Future is a publicly available dataset.

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IMPLICATIONS AND CONTRIBUTION

Parental knowledge, monitoring, and other practices are stable protective factors for adolescent mental health. These factors are not changing in a manner that would plausibly underlie increases in internalizing symptoms. Resources and programs should support these practices and further examine additional parental supports that can combat rising levels of adolescent internalizing symptoms.

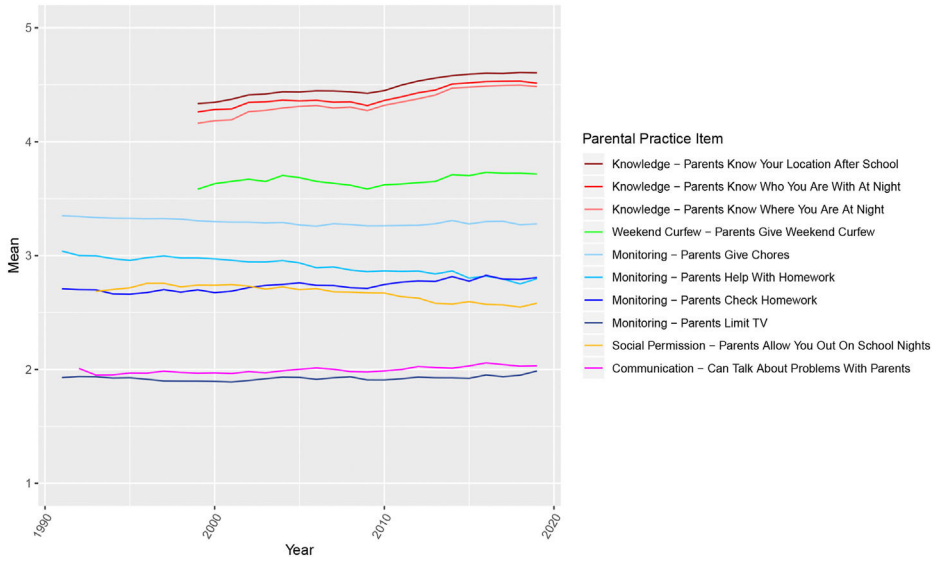

Figure 1.

Trends in parental practice item means among United States adolescents, 1991–2019, monitoring the future.

Table 1

Sample characteristics, grades 8/10, years 1991–2019, monitoring the future

Characteristics	%, (95% CI)
Gender	
Male	49.0 (48.8, 49.2)
Female	51.0(50.8,51.2)
Race/Ethnicity	
White	58.7 (57.8, 59.7)
Black	13.0 (12.3, 13.6)
Hispanic/Latino	16.8 (16.0, 17.5)
Multiracial	2.4 (2.3, 2.5)
Asian/Pacific Islander	4.2 (4.0, 4.5)
American Indian/Alaskan Native	1.9 (1.8, 2.1)
Other	3.0 (2.9, 3.2)
Grade	
8	52.2 (50.4, 54.0)
10	47.8 (46.0, 49.6)
Parental education	
At least one parent with a college degree	55.4 (54.9, 56.0)
None	44.6 (44.0, 45.1)
Internalizing symptom scale/variable means (95% CIs)	
Depressive affect score (range 4–20)	7.9 (7.9, 8.0)
Self-derogation score (range 4–20)	8.6 (8.6, 8.6)
Self-esteem score (range 4–20)	16.1 (16.1, 16.1)
Parental practice scale/variable means (95% CIs) *	
Knowledge (range 3–15)	13.2 (13.2, 13.3)
Monitoring (range 4–16)	10.9 (10.8, 10.9)
Communication (range 1–3)	2.0 (2.0, 2.0)
Weekend curfew (range 1–5)	3.7 (3.7, 3.7)
Social permission (range 1–4)	2.7 (2.7, 2.7)

* Sample size varied by outcome due to year and subform coverage: Knowledge: 220,173 respondents (parents knowing your location/company after school or at night, three items); Weekend Curfew: 220,173 (needing to be home at a set time on weekend nights, one item); Social Permission: 646,620 (parents allowing you out on school nights, one item); Monitoring: 713,472 (the extent to which parents are engaged in and checking on their adolescent's life, either through academic support or setting boundaries/expectations, four items); Communication: 900,805 (the extent to which adolescents can discuss problems with their parent/caregiver, one item). Overall sample size: 933,645.

Table 2

Associations (and 95% CIs) between year (1991 through 2019) and parental knowledge, monitoring, communication, weekend curfew, and social permission among United States adolescents in monitoring the future

Outcome	**Domain**	**OR [rarely or more]**	**OR [sometimes or more]**	**OR [most of the time or more]**	**OR [always]**
Parents know where you are after school	Knowledge	1.019 (1.009, 1.028)	1.035 (1.028, 1.041)	1.037 (1.033, 1.042)	1.041 (1.037, 1.044)
Parents know who you are with at night	Knowledge	1.010 (1.002, 1.017)	1.025 (1.019, 1.030)	1.030 (1.027, 1.033)	1.036 (1.033, 1.039)
Parents know where you are at night	Knowledge	1.015 (1.008, 1.022)	1.032 (1.027, 1.038)	1.035 (1.032, 1.039)	1.042 (1.038, 1.045)
Outcome	Domain	OR [rarely or more]	OR [sometimes or more]	OR [often]	
Parents check whether you have done homework	Monitoring	1.006 (1.004, 1.007)	1.008 (1.006, 1.009)	1.009 (1.008, 1.011)	
Parents help with homework	Monitoring	0.982 (0.981, 0.984)	0.985 (0.983, 0.987)	0.989 (0.987, 0.991)	
Parents give chores	Monitoring	0.990 (0.988, 0.991)	0.994 (0.993, 0.996)	0.996 (0.994, 0.997)	
Parents limit TV	Monitoring	1.002 (1.000, 1.003)	1.001 (0.999, 1.003)	1.002 (1.000, 1.004)	
Outcome	Domain	OR [can discuss some or most/all problems]	OR [can discuss most/all problems]		
Can talk about problems with parents	Communication	1.006 (1.004, 1.007)	1.009 (1.007, 1.010)		
Outcome	Domain	OR [Rarely or more]	OR [Sometimes or more]	OR [Most of the time or more]	OR [always]
Have to be home at a set time on weekends	Weekend curfew	1.007 (1.004, 1.011)	1.005 (1.003, 1.008)	1.004 (1.002, 1.007)	1.007 (1.005, 1.010)
Outcome	Domain	OR [Rarely or more]	OR [Sometimes or more]	OR [often]	
Parents allow you out on school nights	Social permission	0.985 (0.982, 0.987)	0.988 (0.986, 0.990)	0.991 (0.989, 0.993)	
Overall Scales	Domain	Range of ORs using all possible cutpoints			
Parental knowledge	Knowledge	1.005 (0.994, 1.016) to 1.042 (1.039, 1.045)			
Parental monitoring	Monitoring	0.983 (0.979, 0.986) to 1.005 (1.002, 1.007)			

Table 3

Association between parenting practices[a] and internalizing symptoms[b] among United States adolescents, adjusted, overall, 1991–2019, monitoring the future

Parenting practice exposures	Overall aOR (95% CI)
Depressive affect	
Knowledge	0.89 (0.88, 0.90)
Monitoring	0.86 (0.86, 0.87)
Communication	0.38 (0.37, 0.39)
Weekend curfew	0.87 (0.85, 0.89)
Social permission	0.94 (0.93, 0.96)
Self-derogation	
Knowledge	0.90 (0.89, 0.91)
Monitoring	0.88 (0.88, 0.89)
Communication	0.46 (0.45, 0.47)
Weekend curfew	0.91 (0.89, 0.93)
Social permission	0.94 (0.92, 0.96)
Low self-esteem	
Knowledge	0.86 (0.85, 0.86)
Monitoring	0.86 (0.85, 0.86)
Communication	0.48 (0.46, 0.49)
Weekend curfew	0.85 (0.83, 0.87)
Social permission	0.90 (0.88, 0.91)

Adjusted odds ratios controlling for gender, race/ethnicity, grade, and parental education.

[a]Knowledge: Parents knowing their adolescent's location/company after school or at night, three items. Monitoring: The extent to which parents are engaged in or checking on their adolescent's life, either through academic support or setting boundaries/expectations, four items. Communication: The extent to which adolescents can discuss problems with their parent, one item. Weekend Curfew: Needing to be home at a set time on weekend nights, one item. Social Permission: Parents allowing their adolescent out on school nights, one item.

[b]Internalizing Symptoms: Top decile depressive symptoms (score > 13 of 20, four items); Top decile self-derogation (score > 15 of 20, four items); Lowest decile self-esteem (score < 11 of 20, four items). Table A2 provides items.

Table 4

Association between parenting practices[a] and internalizing symptoms[b] among United States adolescents, adjusted, stratified by decade, 1991–2019, monitoring the future

Parenting practice exposures	1991–1999, aOR (95% CI)	2000–2009, aOR (95% CI)	2010–2019, aOR (95% CI)	*p* Value for interaction term between variable and decade
Depressive affect				
Knowledge	0.89 (0.85, 0.93)	0.87 (0.86, 0.88)	0.90 (0.88, 0.91)	.0158 *
Monitoring	0.85 (0.84, 0.86)	0.86 (0.85, 0.87)	0.87 (0.87, 0.88)	.0235 *
Communication	0.36 (0.34, 0.38)	0.38 (0.36, 0.40)	0.39 (0.38, 0.41)	.0926
Weekend curfew	0.90 (0.81, 0.99)	0.87 (0.85, 0.90)	0.87 (0.85, 0.90)	.8155
Social permission	0.97 (0.94, 1.00)	0.95 (0.92, 0.99)	0.93 (0.91, 0.96)	.1866
Self-derogation				
Knowledge	0.91 (0.87, 0.95)	0.89 (0.87, 0.90)	0.91 (0.89, 0.92)	.0928
Monitoring	0.88 (0.87, 0.89)	0.89 (0.88, 0.90)	0.89 (0.88, 0.90)	.7838
Communication	0.45 (0.43, 0.47)	0.46 (0.44, 0.48)	0.45 (0.43, 0.47)	.8155
Weekend curfew	0.96 (0.86, 1.07)	0.91 (0.88, 0.94)	0.91 (0.88, 0.93)	.7838
Social permission	0.96 (0.93, 1.00)	0.95 (0.92, 0.98)	0.94 (0.92, 0.97)	.7838
Low self-esteem				
Knowledge	0.83 (0.79, 0.86)	0.85 (0.83, 0.86)	0.86 (0.84, 0.87)	.0928
Monitoring	0.86 (0.85, 0.87)	0.86 (0.85, 0.87)	0.86 (0.85, 0.87)	.6457
Communication	0.49 (0.47, 0.52)	0.47 (0.45, 0.49)	0.45 (0.44, 0.47)	.1056
Weekend curfew	0.84 (0.76, 0.93)	0.85 (0.82, 0.87)	0.85 (0.83, 0.87)	.7838
Social permission	0.95 (0.92, 0.98)	0.89 (0.87, 0.92)	0.89 (0.87, 0.92)	.0158 *

Adjusted odds ratios controlling for gender, race/ethnicity, grade, and parental education.

* $p < .05$.

[a] Knowledge: Parents knowing their adolescent's location/company after school or at night, three items. Monitoring: The extent to which parents are engaged in or checking on their adolescent's life, either through academic support or setting boundaries/expectations, four items. Communication: The extent to which adolescents can discuss problems with their parent, one item. Weekend Curfew: Needing to be home at a set time on weekend nights, one item. Social Permission: Parents allowing their adolescent out on school nights, one item.

[b] Internalizing Symptoms: Top decile depressive symptoms (score > 13 of 20, four items); Top decile self-derogation (score > 15 of 20, four items); Lowest decile self-esteem (score < 11 of 20, four items). Table A2 provides items.

Table 5

Association between parenting practices[a] and internalizing symptoms[b] among United States adolescents, adjusted, stratified by grade, 1991–2019, monitoring the future

Parenting practice exposures	Grade 8, aOR (95% CI)	Grade 10, aOR (95% CI)	*p* Value for interaction term between variable and grade
Depressive affect			
Knowledge	0.87 (0.85, 0.88)	0.92 (0.90, 0.93)	.0003*
Monitoring	0.85 (0.84, 0.86)	0.88 (0.87, 0.88)	.0003*
Communication	0.35 (0.34, 0.37)	0.41 (0.40, 0.43)	.0003*
Weekend curfew	0.86 (0.83, 0.88)	0.90 (0.87, 0.92)	.0653
Social permission	0.98 (0.95, 1.00)	0.92 (0.89, 0.94)	.0011*
Self-derogation			
Knowledge	0.88 (0.87, 0.90)	0.92 (0.91, 0.94)	.0003*
Monitoring	0.88 (0.87, 0.88)	0.89 (0.89, 0.90)	.0006*
Communication	0.44 (0.42, 0.46)	0.48 (0.46, 0.50)	.0021*
Weekend curfew	0.90 (0.87, 0.92)	0.93 (0.90, 0.96)	.0580
Social permission	0.97 (0.95, 0.99)	0.92 (0.90, 0.95)	.0171*
Low self-esteem			
Knowledge	0.88 (0.87, 0.90)	0.92 (0.91, 0.94)	.0003*
Monitoring	0.88 (0.87, 0.88)	0.89 (0.89, 0.90)	.0003*
Communication	0.44 (0.42, 0.46)	0.48 (0.46, 0.50)	.0171*
Weekend curfew	0.90 (0.87, 0.92)	0.93 (0.90, 0.96)	.0308*
Social permission	0.97 (0.95, 0.99)	0.92 (0.90, 0.95)	.0021*

Adjusted odds ratios controlling for gender, race/ethnicity, and parental education.

*$p < .05$.

[a]Knowledge: Parents knowing their adolescent's location/company after school or at night, three items. Monitoring: The extent to which parents are engaged in or checking on their adolescent's life, either through academic support or setting boundaries/expectations, four items. Communication: The extent to which adolescents can discuss problems with their parent, one item. Weekend Curfew: Needing to be home at a set time on weekend nights, one item. Social Permission: Parents allowing their adolescent out on school nights, one item.

[b]Internalizing Symptoms: Top decile depressive symptoms (score > 13 of 20, four items); Top decile self-derogation (score > 15 of 20, four items); Lowest decile self-esteem (score < 11 of 20, four items). Table A2 provides items.