General and Specific Approaches to Media Parenting: A Systematic Review of Current Measures, Associations with Screen-Viewing, and Measurement Implications

Russell Jago, PhD, Mark J. Edwards, PhD, Carly R. Urbanski, MSc, and Simon J. Sebire, PhD

Abstract

Background: Parent-focused interventions may help to reduce youth screen-viewing (SV). This review synthesized current information on the links between parenting styles, parenting practices, and youth SV with a focus on measurement.

Methods: A systematic review of electronic databases was conducted.

Results: In all, 29 of 1189 studies met the inclusion criteria. Parenting practices were divided into rule and nonrule-based practices. Seven rules: (1) Limits on total time (n studies = 23); (2) limits on time of day ($n = 7$); (3) content restriction ($n = 11$); (4) mealtime rules ($n = 2$); (5) parental supervision ($n = 3$); (6) contingent screentime ($n = 3$); and (7) no-TV policy ($n = 1$) were reported. Two nonrule-based practices were reported: Co-viewing ($n = 6$) and encouragement to view ($n = 2$). Three studies (10.3%) provided information on parenting styles. Only 12 studies (41.4%) provided information on the reliability/validity of the outcome measure, 15 (51.7%) studies provided information on the reliability/validity of the parenting measure, and 6 (20.7%) provided information on the reliability/validity of both outcome and exposure measures.

Conclusions: There is mixed evidence that parenting styles and media-related parenting practices are associated with youth SV. The assessment of parental influence of youth media use is hampered by the diversity of measures that have been used. There is a need for new measures that assess a range of media parenting practices that are relevant to multiple forms of SV.

Introduction

Adult screen-viewing (SV) time (TV viewing, computer game time, and internet use) has been associated with higher levels of adult obesity, type 2 diabetes, and all-cause mortality.^{1,2} Among youth, SV has been associated with an increased risk of obesity, elevated levels of cardiovascular risk factors, and poor mental well-being.^{3–9} Recent evidence suggests that SV patterns track from childhood to adulthood, indicating that reducing youth SV is likely to be important for current and future disease reduction.¹⁰ The American Academy of Pediatrics (AAP) recommends that children's total media time should be limited to 1–2 hours of quality programming per day.¹¹ Data from the National Health and Nutrition Examination Survey (NHANES) indicated that 33% of youth exceeded the upper threshold of the AAP TV viewing guidelines.¹² A

number of national bodies have identified reducing youth SV as a key public health objective.^{13,14}

The mediating variable model suggests that behavior change is facilitated by manipulation of the factors that are associated with SV.¹⁵ As such, identifying potential intermediate or “mediating” variables and how they may be associated with SV is a critical element of designing behavior change interventions. A number of studies have shown that parent and child SV patterns are related, with higher parental SV associated with higher child SV,^{16,17} but it is not clear what factors contribute to these associations. To change behavior, more information is needed about how parental influence is manifested. These influences are likely to fall into one of two categories—parenting style and/or parenting practices including co-viewing. Co-viewing refers to children and parents engaging in SV together.¹⁷ Parenting styles describe how a

parent communicates with his/her child.¹⁸ Four parenting styles have been defined: Authoritarian (demand obedience), authoritative (use reasoning), permissive (acquiesce to child's demands), and uninvolved.^{18,19} Different parenting styles affect the behavior of children. For example, authoritative parenting has been associated with greater consumption of fruit and vegetables amongst youth^{20,21} and permissive parenting styles have been associated with higher levels of physical activity (PA) amongst youth, in the United Kingdom²² and the United States.²³ This suggests that parenting styles may affect energy-balance behaviors differently.

Parenting practices describe context-specific behaviors, such as what a parent does to reduce child SV.^{24,25} A range of different parenting practices including limiting SV time, only allowing screentime at certain times of day, and content restriction have been studied. It is not clear, however, what the patterns of associations between parenting practices, parenting styles, and youth SV are. This information would be helpful in identifying variables to target in future interventions.

There is currently no synthesis of information on what parenting styles and practices have been assessed in relation to youth SV and the patterns of evidence linking particular practices to SV behaviors. Equally, to the best of our knowledge, there has been no attempt to integrate current evidence on the validity and reliability of the parenting styles and practice measures. Without such knowledge, it is difficult to interpret the associations between parenting practices/styles and SV. Therefore, information is needed on the associations that have been examined, the validity and reliability of the measures used to examine those associations, and the current gaps in the measurement literature that require further work. To address these issues, a systematic review was conducted. The review was designed to answer the following research questions:

1. What parenting style and practice variables have been examined in relation to youth SV?
2. What is the evidence for reliability/validity of the parenting style and practice measures that have been used?
3. What are the associations between parenting styles/practices and youth SV?
4. Are there potentially important parenting styles/practices that have not been assessed?
5. How can the findings from the review inform the development of the next generation of SV parenting measures?

Methods

A systematic search of seven databases (Cumulative Index to Nursing and Allied Health Literature (CINAHL), EMBASE, International Bibliography of the Social Sciences (IBSS), MEDLINE, PsycINFO, Sociological Abstracts, and Web of Science) was conducted in January, 2012, in accordance with the Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA)

guidelines.²⁶ A combination of keywords was used, including "child", "adolescent", "parent", "style", "practices", "mediation", "television", "video games", and "computer". (Because there were semantic differences between search engines' definitions of key words, alternatives were used, e.g., "youth" rather than "adolescent", "discipline" opposed to "practice"). After initial screening, reference lists were manually examined to ensure the literature was exhaustively searched.

Inclusion and Exclusion Criteria

All peer-reviewed studies examining the relationship between parenting practices and/or parenting styles and child or adolescent SV were included within the review. There was no restriction on the publication date of the articles. Searches were conducted in English. Studies were excluded if they: (1) Did not examine either parenting practices or parenting styles in relation to SV; or (2) examined only a narrowly defined element of SV (e.g., viewing of particular content or visits to certain Internet sites). Measures assessing the presence of TV sets in children's bedrooms or eating meals while watching TV were not considered to be parenting practices because the absence of a TV set in a child's bedroom, or whether a child eats while SV, does not necessarily indicate the presence of a rule.

Screening and Data Abstraction

Duplicate articles were removed prior to screening. Screening and data abstraction were undertaken by two reviewers. Titles and abstracts were reviewed to identify potential articles to include. Full texts of identified papers were screened to identify whether the article should be included in the review. Data from included articles were then independently entered into a purpose-designed data abstraction form. The form contained basic details on the study (sample details, research methods, reliability, and validity of measures used), information on the SV measurement, measure of parenting style and/or practice, and a summary of relevant findings. The type of parenting practice assessed was categorized as either rule or nonrule-based parenting practices. The rule based practices were subdivided into: (1) Limits on total time; (2) limits on time of day; (3) content restriction; (4) rules for no viewing during mealtimes; (5) rules for only allowing viewing when supervised by a parent; (6) contingent screentime in which SV can only occur when other tasks, such as homework or exercise, have been completed; and (7) a no-TV policy. There were two nonrule-based practices: (1) Co-viewing (TV/video games), whereby the child had to engage in the behavior at the same time as the parent and (2) parental encouragement to screen view at a particular time of day, and/or encouragement to view particular content. Discussions were held regarding any reporting inconsistencies and a final categorization of each study was agreed. Information on study design, measures (including validity and reliability), analyses, and results were then

abstracted. Data abstraction forms were transferred into a purpose-designed database and cross-checked against the original forms to minimize any possibility of errors.

Results

Results are presented in four sections: (1) Summary of studies included in review; (2) tools used to assess parenting styles/practices; (3) quality of measurement tools; and (4) associations between parenting styles/practices and SV.

Summary of the Studies in the Review

The bibliographic database search yielded 1189 studies, of which 29 articles that were published between 1982 and 2011 satisfied our inclusion and exclusion criteria and were thus included in the final review.^{27–55} A flow chart presenting how the review process was aligned to the PRISMA guidelines including the selection of studies that met the inclusion criteria is presented in Figure 1.

A summary of the studies^{27–55} that were included in the review, including the country, participants, the SV measure assessed, and whether parenting styles or practices were measured, is presented in Table 1. Studies were based overwhelmingly upon data from the United States

($n = 18$).^{27,29,31,32,34,37–41,44,45,47,48,51,52,54,55} The table indicates that previous work has included children and adolescents with the majority of the studies having samples that were largely white.^{27–30,32–38,40–55} Twenty-seven studies^{27–44,46–53,55} have assessed parenting practices, from which one study has assessed both parenting styles and practices.⁴³ Two studies assessed parenting styles alone.^{45,54} In terms of participants, 14 studies focused on children,^{27,28,32,33,35,37,41,43,47,48,50,52–54} eight on adolescents,^{29,31,39,42,45,46,49,55} and seven on children and adolescents.^{30,34,36,38,40,44,51} It is noticeable that TV viewing is assessed in all but one of the studies,⁵⁵ with 12^{32,34,35,36,38,39,42,43,46,48,52,54} focusing on just TV viewing and 16 focusing on TV viewing and at least one other behavior.^{27–31,33,37,40,41,44,45,47,49–51,53} The one study that did not consider TV viewing focused solely on video game usage.⁵⁵

Measurement Tools

Parenting styles. A summary of the parenting style measures are presented in Table 2. Of the three studies that assessed parenting styles, one was based on child report,⁴³ and two on parent report.^{45,54} The studies made reference to three external published sources.^{56–58}

Figure 1. PRISMA flow diagram.

Table 1. Summary of Studies Included in the Review Including Participant Characteristics, SV Assessment Method, and Whether Parenting Styles (PS) or Parenting Practices (PP) Were Assessed

ID	Reference	Country	Sample details and child/adolescent demographics	Screen viewing measurement	PS	PP
1	Barr et al. (2010) ²⁷	USA	<ul style="list-style-type: none"> • 308 parents (of infants aged 6, 9, 12, 15, or 18 months) • 167 (54.2%) male, 141 (45.8%) female • 71.4% white 	<ul style="list-style-type: none"> • TV/DVD/video • Parent-reported 24-hour TV/video diary of child's behavior 		X
2	He et al. (2010) ²⁸	Canada	<ul style="list-style-type: none"> • 508 parent-child dyads. • Grade 5 & 6 children • 248 (48.8%) male, 260 (51.2%) female • 77% White 	<ul style="list-style-type: none"> • TV, computer, video games • Child reported: recall of SV on each day of previous week. 		X
3	Lin and Atkin. (1989) ²⁹	USA	<ul style="list-style-type: none"> • 427 adolescents • Age range = 11 to 13 years ($n=206$), Age range = 15 to 17 years ($n=221$) • 223 (52.2%) male, 203 (47.5%) female, 1 nonreport 	<ul style="list-style-type: none"> • TV and VCR • Child-reported viewing referred to hours/day child viewed TV/VCR. 		X
4	Patriarca et al. (2009) ³⁰	Italy	<ul style="list-style-type: none"> • 987 children and adolescents • M-age = 13.7, SD = 1.4, age range = 11–16 years • 511 (51.8%) male, 476 (48.2%) female. 	<ul style="list-style-type: none"> • TV, Video games • Child-reported questionnaire 		X
5	Ramirez et al. (2011) ³¹	USA	<ul style="list-style-type: none"> • 160 parent/adolescent dyads. • M-age = 14.6 years, SD = 1.7 • 77 (48.1%) male, 83 (51.9%) female • 41.9% non-Hispanic white 	<ul style="list-style-type: none"> • TV/video/DVD, computer or video games, internet/email • Parent and adolescent reported time spent by adolescent on each activity. 		X
6	Springer et al. (2010) ³²	USA	<ul style="list-style-type: none"> • 734 children • M-age = 9.5 years (at baseline) 	<ul style="list-style-type: none"> • TV • Child reported • Questions related to previous day and previous weekend. 		X
7	Van den Bulck and Van den Bergh. (2000) ³³	Belgium	<ul style="list-style-type: none"> • 519 children • 261 (50.2%) male, 258 (49.7%) female • Majority aged 10 to 11. M-age = 10 years 6 months 	<ul style="list-style-type: none"> • TV, computer games • Child reported TV/computer games usage. 		X
8	Warren et al. (2002) ³⁴	USA	<ul style="list-style-type: none"> • 321 parents • M-age = 9 years, age range = 1–17 years • 91% Caucasian 	<ul style="list-style-type: none"> • TV • Not explained. 		X
9	Holman and Braithwaite (1982) ³⁵	Australia	<ul style="list-style-type: none"> • 282 parents • M-age of child = 3.4, age range = 3–6 years. 	<ul style="list-style-type: none"> • TV • Parental report estimate of child viewing. 		X
10	Sun. (2009) ³⁶	China	<ul style="list-style-type: none"> • 1056 children and adolescents • 564 (53.4%) male, 492 (46.6%) female • Age range = 6 to 14 	<ul style="list-style-type: none"> • TV • Parent and child/adolescent reported • Four questions measured child viewing. 		X
11	Barkin et al. (2006) ³⁷	USA, Canada, Puerto Rico	<ul style="list-style-type: none"> • 1831 parents • 54.3% children aged 2–5 and 45.7% aged 6–11 years old. • 70% white 	<ul style="list-style-type: none"> • TV and computer/video games • Parent reported hours/day child TV, videos, computer games, Gameboy usage. 		X
12	Barradas et al. (2007) ³⁸	USA	<ul style="list-style-type: none"> • 1045 parent-child dyads. • 520 (49.8%) boys, 525 (50.2%) girls • Age range 10–12 years ($n=334$, 52% female), 13–15 ($n=355$, 52% female), 16–18 ($n=346$, 49% female) 	<ul style="list-style-type: none"> • TV • Parent and child reported • Total TV hours = weekday TV hours (X 5) + weekend TV hours. 		X
13	Bauer et al. (2011) ³⁹	USA	<ul style="list-style-type: none"> • 253 parent-adolescent dyads • M-age = 15.7 years, age range = 14–20.3 • 29% white, 26% African, 24% Asian 	<ul style="list-style-type: none"> • TV • Child reported 3-day PA-recall completed in 30-minute blocks (6am-midnight). 		X

continued on page S-55

Table 1. Summary of Studies Included in the Review Including Participant Characteristics, SV Assessment Method, and Whether Parenting Styles (PS) or Parenting Practices (PP) Were Assessed *continued*

ID	Reference	Country	Sample details and child/adolescent demographics	Screen viewing measurement	PS	PP
14	Carlson et al. (2010) ⁴⁰	USA	<ul style="list-style-type: none"> • 7415 children and adolescents and 5685 parents. • 3840 (51%) male, 3575 (49%) female • Panel 1 ($n=2256$ aged 11–15.). Panel 2 ($n=5177$, aged 9–13). • 60.7% white 	<ul style="list-style-type: none"> • TV and computer/video games. • Child reported minutes TV, video game, or computer game usage on previous day. 		X
15	Davison et al. (2005) ⁴¹	USA	<ul style="list-style-type: none"> • 173 families (girls, mothers, and fathers). • Age at 9 (M-age=9.34, SD 0.3), and 11 (M-age=11.34, SD=0.3) • All non-Hispanic white 	<ul style="list-style-type: none"> • TV/video • Parent reported: hours/day child viewed TV/videos. 		X
16	Hume et al. (2010) ⁴²	Netherlands	<ul style="list-style-type: none"> • 338 adolescents • M-age=14.0, SD 1.1, Age range 12–13 and 14–15 • 58.3% Dutch, 33.4% non-Western. 	<ul style="list-style-type: none"> • TV • Child reported TV viewing previous week. 		X
17	Jago et al. (2011) ⁴³	UK	<ul style="list-style-type: none"> • 431 parent–child dyads. • Age range 10–11 years 	<ul style="list-style-type: none"> • TV • Parent and child reported. Single question on hours/day TV viewing. 	X	X
18	Lee et al. (2009) ⁴⁴	USA	<ul style="list-style-type: none"> • 1354 children and adolescents • 68% white 	<ul style="list-style-type: none"> • TV, computer, video games • Child reported • 24-hour time diaries. 		X
19	Padilla-Walker and Coyne. (2011) ⁴⁵	USA	<ul style="list-style-type: none"> • 478 families (154 single-parent and 324 two-parent) • M-age=12.34, SD=1.46 • 230 (48%) male, 248 (52%) female 	<ul style="list-style-type: none"> • TV, video games • Child report of adolescents' media use. 	X	
20	Te Velde et al. (2011) ⁴⁶	Netherlands	<ul style="list-style-type: none"> • 1265 children/adolescents. • 632 boys, 529 girls at baseline. • 218 boys, 170 girls at follow-up. • M-age at follow-up=14.7, SD=0.7 	<ul style="list-style-type: none"> • TV • Child/adolescents reported • Two questions assessed TV viewing (minutes/day). 		X
21	Vandewater et al. (2005) ⁴⁷	USA	<ul style="list-style-type: none"> • 838 Parents of children aged 6 months and 6 years • M-age=3.20, SD=1.82 • 419 (50%) male, 419 (50%) female 	<ul style="list-style-type: none"> • TV, video/DVD • Parent reported viewing on previous / last typical day. 		X
22	Griffore and Phenice. (1996) ⁴⁸	USA	<ul style="list-style-type: none"> • 1558 Children 	<ul style="list-style-type: none"> • TV • Child reported hours on TV on typical weekday and weekend day 		X
23	Hardy et al. (2006) ⁴⁹	Australia	<ul style="list-style-type: none"> • 974, 343 adolescents, 338 mothers, 293 fathers • M-age=12.9, SD=0.21 • 483 (49.6%) male, 491 (50.4%) female 	<ul style="list-style-type: none"> • TV, video, DVD • Child reported TV/video/DVD viewing on usual week/end day. 		X
24	Salmon et al. (2005) ⁵⁰	Australia	<ul style="list-style-type: none"> • 927 families (parents and children) • M-age=11.5, SD=0.6 	<ul style="list-style-type: none"> • TV, electronic games, computer. • Parent reported hours/minutes child viewing on typical weekend. 		X
25	Wiecha et al. (2001) ⁵¹	USA	<ul style="list-style-type: none"> • 1197 children/adolescents • 50% male • 60% white • 58% grade 7, 42% grade 6 	<ul style="list-style-type: none"> • TV, video, computer game. • Child/adolescent reported. • Assessed typical usage (hours/day) of TV, video, and computer game usage. 		X
26	Truglio et al. (1996) ⁵²	USA	<ul style="list-style-type: none"> • 271 children and 'their families'. • Children: within 3 months of 3rd ($n=160$) and 5th birthday ($n=166$), at baseline. 	<ul style="list-style-type: none"> • TV (entertainment viewing) • Parent diaries (1 week in spring, 1 week in fall for 2 study years; 5 diaries in total). 		X

continued on page S-56

Table 1. Summary of Studies Included in the Review Including Participant Characteristics, SV Assessment Method, and Whether Parenting Styles (PS) or Parenting Practices (PP) Were Assessed *continued*

ID	Reference	Country	Sample details and child/adolescent demographics	Screen viewing measurement	PS	PP
27	van Zutphen et al. (2007) ⁵³	Australia	<ul style="list-style-type: none"> • 1926 children • M-age=8.0 years, SD=0.05, Age range = 3.5–12.5 years • 940 (48.8%) male, 986 (51.2%) female 	<ul style="list-style-type: none"> • TV, video. • Parent reported child video/TV viewing on previous day (minutes) and usual viewing. 		X
28	Gable and Lutz. (2000) ⁵⁴	USA	<ul style="list-style-type: none"> • 65 parent and child pairs • 28 (43%) male, 37 (57%) female • 75% white • M-age=8.1 years, age range=6–10.9 	<ul style="list-style-type: none"> • TV • Parent reported average number of hours/day child spent watching TV (don't watch TV, < 1 hour/day, 1–2 hours/day, 2–3 hours/day, > 3 hours/day). 	X	
29	Shin and Huh. (2011) ⁵⁵	USA	<ul style="list-style-type: none"> • 1102 parent and adolescent pairs • M-age= 15, age range= 12–17 • 51% males, 49% females 	<ul style="list-style-type: none"> • Video gaming • Adolescent and parent reported frequency of playing on a 7-point scale. 		X

M-age, mean age; SD, standard deviation; PA, physical activity.

Parenting Practices

A summary of the parenting practices that were assessed in each of the studies is presented in Table 3,^{27–44,46–53,55} with an overview of the practices presented in Table 4.^{27–44,46–53,55} As noted above, seven rules were reported, with the following frequencies across studies: (1) Limits on total time (n studies=23); (2) limits on time of day (n =7); (3) content restriction (n =11); (4) mealtime rules (n =2); (5) parental supervision (n =3); (6) contingent SV (n =3); and (7) no-TV policy (n =1). The limit-based rules were subdivided into studies that focused on TV, DVD/VCR, PC, and video games. Limits on total TV time and on the time of day children watch TV were most frequently examined. Two nonrule-based practices were reported—co-viewing (n =6) and encouragement to view (n =2). Eleven of the studies had child reports of parenting practices, 11 had parent reports, and 5 used both parent and child reports. In many studies, analyses were conducted on a composite exposure variable that consisted of multiple

different types of parenting practice and, as such, may not use the same terms that are presented above. Two studies^{32,43} made reference to a published scale.^{59–62}

Quality of Measures Used

Outcome measures. A summary of whether any information was provided on the reliability, internal consistency of the SV outcome measure is shown in Table 5. Of the 29 studies that were included in the review, only 12 (41.4%)^{27,28,31,39,42,43,45,46,49–52} provided any justification for the selection of the SV outcome. Of the studies that did provide information, five reported information on test–retest reliability based on their own data^{28,31,46,49,50} and four reported information about criterion validity when compared to another measure reported in the text.^{28,43,51,52} In total, nine studies^{27,28,31,39,42,43,45,46,52} provided a reference to support their scales with 12 different references provided.^{63–74}

Table 2. Summary of Parenting Style Measures

ID	Study reference	Respondent	Items assessed under label 'parenting style' and associated reference (if provided)
17	Jago et al. (2011) ⁴³	Child	Maternal parenting style, using 30-item version of Children's Report of Parent Behavior Inventory. ^{56,57} Mean scores classify parents as: (1) Authoritative (high acceptance/high control), (2) Authoritarian (low acceptance/high control), and (3) Permissive (high acceptance/low control).
19	Padilla-Walker and Coyne. (2011) ⁴⁵	Parent	Frequency parent adopts behaviors relating to authoritative parenting: classified as connection, regulation, and autonomy.
28	Gable and Lutz. (2000) ⁵⁴	Parent	Two subscales (authoritative and authoritarian) of the CRPR. Authoritative parenting reflects positive child guidance, enjoyment in the child, encouragement of child autonomy, and affectionate behavior. Authoritarian parenting styles are controlling, prohibitive, and anxiety-inducing. ⁵⁸

CRPR, Child-Rearing Practices Report.

Table 3. Summary of Parenting Practices That Were Assessed

ID	Study	Respondent	Parenting practices assessed	Summary of measure and associated external reference (if reported)
1	Barr et al. (2010) ²⁷	Parent	<ul style="list-style-type: none"> • Limit on total viewing time • Content restriction • Co-viewing • No-TV policy 	<ul style="list-style-type: none"> • Restrictions on time of TV use. • Co-viewing: How often parent was in room when infant viewed TV
2	He et al. (2010) ²⁸	Parent and child	<ul style="list-style-type: none"> • Rules (limit on total viewing / use) 	<ul style="list-style-type: none"> • Perceived rules (week/end) for: limit TV, limit videogame, limit computer use for homework (and non-homework).
3	Lin and Atkin. (1989) ²⁹	Child	<ul style="list-style-type: none"> • Program/video content restrictions • Encouragement to watch certain content • Limit on total viewing/video hire • Limit on time of day child can view TV • Limit on frequency child views with friends 	<ul style="list-style-type: none"> • 'Viewing rules' assessed by three items: (a) time child is allowed to view TV, (b) content, (c) how late child views TV. • VCR rules assessed by: (a) frequency child rents video, (b) content, (c) frequency views videos at friend's house, (d) how often child could rent video with friend.
4	Patriarca et al. (2009) ³⁰	Child	<ul style="list-style-type: none"> • Control / supervision of TV viewing, videogame, and computer use. 	<ul style="list-style-type: none"> • Do parents control or supervise TV viewing, playing videogames, using computer (yes/no).
5	Ramirez et al. (2011) ³¹	Parent and child	<ul style="list-style-type: none"> • TV and computer rules • Video games – total rules • Limit on total viewing • Limit on time child can view TV • Contingent SV 	<ul style="list-style-type: none"> • Agree/disagree with 7 items on rules: Not too much TV/DVDs, No TV/DVD before homework, No TV/DVD while doing homework, <2 hour TV/DVD/day, No computer before HW, only 1hr computer/d, no internet without permission, no TV/computer unless exercised first.
6	Springer et al. (2010) ³²	Child	<ul style="list-style-type: none"> • Limit on total TV 	<ul style="list-style-type: none"> • Primary independent variable assessed parental rules for child TV viewing^{59,60,62}
7	Van den Bulck et al. (2000) ³³	Child	<ul style="list-style-type: none"> • Content restrictions • Limit on total viewing • Limits on time of day • Co-viewing/ playing computer games 	<ul style="list-style-type: none"> • Parental guidance behavior with regard to TV viewing and computer usage. For 16 questions, child responded 'never' to 'often'. 'Restrictive guidance' includes TV and computer game content restrictions and limits on TV and computer game time.
8	Warren et al. (2002) ³⁴	Parent	<ul style="list-style-type: none"> • Co-viewing • Content restrictions • Limits on total viewing • Limits on time of day 	<ul style="list-style-type: none"> • Likert-scale items measured frequency of co-viewing, restrictions, and discussion of TV viewing with child.
9	Holman et al. (1982) ³⁵	Parent	<ul style="list-style-type: none"> • Content restriction 	<ul style="list-style-type: none"> • Parenting control of TV measured through two items assessing programme suitability and selection.
10	Sun. (2009) ³⁶	Child	<ul style="list-style-type: none"> • Content restriction • Co-viewing • Limit on total time 	<ul style="list-style-type: none"> • Control over child TV viewing time, and content control was averaged to create 'restrictive mediation' variable. Co-viewing is measured by one question asking child how often they view with parents each week.
11	Barkin et al. (2006) ³⁷	Parent	<ul style="list-style-type: none"> • Content restrictions • Limits on times of viewing • Limits on time of day 	<ul style="list-style-type: none"> • How often in the past month have you restricted use, explained content, or allowed unlimited use.
12	Barradas et al. (2007) ³⁸	Parent and child	<ul style="list-style-type: none"> • Limits on total time 	<ul style="list-style-type: none"> • Frequency parent set rules on amount of time child views TV and parent encourages daughter to view less TV
13	Bauer et al. (2011) ³⁹	Parent	<ul style="list-style-type: none"> • Limits on total viewing 	<ul style="list-style-type: none"> • TV limits assessed with single question
14	Carlson et al. (2010) ⁴⁰	Parent and child	<ul style="list-style-type: none"> • Limits on total time • Limits and rules on total videogame use 	<ul style="list-style-type: none"> • Child-report: Parents have rules for TV viewing time and videogames. • Parent-report: How often they set limits on time child views TV/videogames).

continued on page S-58

Table 3. Summary of Parenting Practices That Were Assessed *continued*

ID	Study	Respondent	Parenting practices assessed	Summary of measure and associated external reference (if reported)
15	Davison et al. (2005) ⁴¹	Parent	<ul style="list-style-type: none"> Co-viewing (TV and videos) Limits on total time (restriction of access) 	<ul style="list-style-type: none"> Co-viewing=frequency parents watched TV/videos with daughter or as family Parents separately report limits on daughter's TV viewing (age 11): do not limit -to- only select programs or no TV at all.
16	Hume et al. (2010) ⁴²	Child	<ul style="list-style-type: none"> Rules (limits) on total time Rules (limits) on time of day 	<ul style="list-style-type: none"> Dichotomous (yes/no) scale; parent rules on total TV viewing, and rules about when child can view. Items summed to create scale of TV viewing rules
17	Jago et al. (2011) ⁴³	Child	<ul style="list-style-type: none"> Limits on total viewing, video/computer game use and non-homework use 	<ul style="list-style-type: none"> Limit on TV, comp/videogame, and computer time for non-homework. 4-point scale. Combined to form three categories: (1) both parents high; (2) 1 high, 1 low; (3) both parents low.⁶¹
18	Lee et al. (2009) ⁴⁴	Child	<ul style="list-style-type: none"> Limits on total time 	<ul style="list-style-type: none"> Items summed to form one variable. How much time child watches TV, limits on staying up at night.
20	Te Velde et al. (2011) ⁴⁶	Child	<ul style="list-style-type: none"> Limits on total time Limits on time of day 	<ul style="list-style-type: none"> Rules about time of TV viewing and total viewing time (both Yes/No).
21	Vandewater et al. (2005) ⁴⁷	Parent	<ul style="list-style-type: none"> Content restriction Limit on total time 	<ul style="list-style-type: none"> Rules about viewing TV and rules about content (both Yes/No).
22	Griffiore et al. (1996) ⁴⁸	Child	<ul style="list-style-type: none"> Rules on total time. 	<ul style="list-style-type: none"> Rules about viewing TV.
23	Hardy et al. (2006) ⁴⁹	Parent and child	<ul style="list-style-type: none"> Meal time Contingent SV Parental supervision 	<ul style="list-style-type: none"> Parent ensures child does not view too much TV (disagree, neutral, agree). Restrictions on child TV viewing; prohibit TV until homework is done; and restrict TV at meals.⁷⁶ Can child view as much TV as they like, do they have limits on TV, always have limits, or do not view TV
24	Salmon et al. (2005) ⁵⁰	Parent	<ul style="list-style-type: none"> Limits on total time on TV, electronic games, and computer Contingent SV Content restriction Meal time 	<ul style="list-style-type: none"> For each screen-based behavior; restrictions over time child spends in each activity. 4-scale response 'don't know/doesn't apply' to 'very often'.
25	Wiecha et al. (2001) ⁵¹	Child	<ul style="list-style-type: none"> Limit on total time 	<ul style="list-style-type: none"> Limit setting defined by response to four questions. Responses dichotomized as 'no limits' or 'parents place limits'.
26	Truglio et al. (1996) ⁵²	Parent	<ul style="list-style-type: none"> Content restriction Limit on total time Encouragement to view Parental supervision 	<ul style="list-style-type: none"> Encouragement to view measured on 5-point Likert scale (1 = never, 5 = very often). Parent regulation measured by 3 items. Regulation of TV use measured by independent child viewing, time limits, programs restrictions.
27	van Zutphen et al. (2007) ⁵³	Parent	<ul style="list-style-type: none"> Limits on total TV and DVD time 	<ul style="list-style-type: none"> Rules limiting hours child views TV/videos and tightness of rules Rules regarding total time child can view TV, and tightness of rule enforcement.
29	Shin and Huh. (2011) ⁵⁵	Parent	<ul style="list-style-type: none"> Limit on total viewing time Content restriction Co-viewing (video games) 	<ul style="list-style-type: none"> Co-playing, checking ratings and stopping child from playing video games was measured on 4-point Likert scale.

Table 4. Summary of Parenting Practices Assessed across Studies

ID	Study	Rules															Non-rules		
		Limits on total time				Limits on time of day				Content restriction	Meal time	Parental supervision	Contingent SV	No-TV policy	Co-viewing		Encourage to view		
		TV	DVD/ VCR	PC	Video games	TV	DVD/ VCR	PC	Video games						TV	Video games			
	Frequency	23	3	4	5	7	1	1	1	11	2	3	3			5	1	2	
1	Barr et al. (2010) ²⁷	X								X					X				
2	He et al. (2010) ²⁸	X		X	X														
3	Lin et al. (1989) ²⁹	X	X			X				X								X	
4	Patriarca et al. (2009) ³⁰	X		X	X								X						
5	Ramirez et al. (2011) ³¹	X	X	X		X	X	X											
6	Springer et al. (2010) ³²	X																	
7	Van den Bulck et al. (2000) ³³	X			X	X			X	X						X			
8	Warren et al. (2002) ³⁴	X				X				X						X			
9	Holman et al. (1982) ³⁵									X									
10	Sun. (2009) ³⁶	X								X						X			
11	Barkin et al. (2006) ³⁷					X				X									
12	Barradas et al. (2007) ³⁸	X																	
13	Bauer et al. (2011) ³⁹	X																	
14	Carlson et al. (2010) ⁴⁰	X			X														
15	Davison et al. (2005) ⁴¹	X														X			
16	Hume et al. (2010) ⁴²	X				X													
17	Jago et al. (2011) ⁴³	X		X	X			X											

continued on page S-60

Table 4. Summary of Parenting Practices Assessed across Studies continued														
ID	Study	Rules										Non-rules		
		Limits on total time					Limits on time of day					Content restriction	Meal time	Parental supervision
		TV	DVD/VCR	PC	Video games	TV	DVD/VCR	PC	Video games	Contingent SV	No-TV policy	Co-viewing	TV	Video games
18	Lee et al. (2009) ⁴⁴	X												
20	Te Velde et al. (2011) ⁴⁶	X				X								
21	Vandewater et al. (2005) ⁴⁷	X								X				
22	Griffiore et al. (1996) ⁴⁸	X												
23	Hardy et al. (2006) ⁴⁹	X								X				
24	Salmon et al. (2005) ⁵⁰									X				
25	Wiecha et al. (2001) ⁵¹	X												
26	Truglio et al. (1996) ⁵²	X												X
27	van Zutphen et al. (2007) ⁵³	X	X											
29	Shin and Huh (2011) ⁵⁵				X					X				X

Table 5. Reported Reliability and Validity of Screen-Viewing Measures and Link to External Validation/Reliability Information

ID	Study	Information reported on the reliability and or validity of SV measure	Reference
1	Barr et al. (2010) ²⁷	—	69, 72
2	He et al. (2010) ²⁸	ICC range=0.5 to 0.8 when compared with Activity Diary Method. 2-week test retest ICC=0.98.	63
3	Lin and Atkin. (1989) ²⁹	—	—
4	Patriarca et al. (2009) ³⁰	—	—
5	Ramirez et al. (2011) ³¹	2-week test retest. Weekday (ICC=0.44, 95% CI=0.56, 0.57), weekend (ICC=0.46, 95% CI=0.52, 0.63)	64–66
6	Springer et al. (2010) ³²	—	—
7	Van den Bulck et al. (2000) ³³	—	—
8	Warren et al. (2002) ³⁴	—	—
9	Holman et al. (1982) ³⁵	—	—
10	Sun. (2009) ³⁶	—	—
11	Barkin et al. (2006) ³⁷	—	—
12	Barradas et al. (2007) ³⁸	—	—
13	Bauer et al. (2011) ³⁹	—	73,74
14	Carlson et al. (2010) ⁴⁰	—	—
15	Davison et al. (2005) ⁴¹	—	—
16	Hume et al. (2010) ⁴²	Three TV viewing habit strength variables created (Cronbach α =0.82).	67, 68
17	Jago et al. (2011) ⁴³	Assessment of TV viewing with single question shown to correlate (r =0.60) with 10 days of TV diaries.	69
18	Lee et al. (2009) ⁴⁴	—	—
19	Padilla-Walker et al. (2011) ⁴⁵	Average use of videogames and TV (α =0.65).	70
20	Te Velde et al. (2011) ⁴⁶	Previous reliability study (n =49 children test–retest, 2-week interval) showed good reliability (ICC=0.78)	71
21	Vandewater et al. (2005) ⁴⁷	—	—
22	Griffore et al. (1996) ⁴⁸	—	—
23	Hardy et al. (2006) ⁴⁹	Two-week test–retest (n =140) with good-excellent repeatability (percent agreement=70–99%).	—
24	Salmon et al. (2005) ⁵⁰	Test–retest reliability for proxy-reported time screen viewing behaviors (ICC) ranged from 0.6 to 0.8.	—
25	Wiecha et al. (2001) ⁵¹	Validation (n =53 students) correlation of r =0.54 between survey and the recall for TV with equivalent means.	—
26	Truglio et al. (1996) ⁵²	Comparison of diaries and videotapes was 0.84 for preschoolers' viewing.	69
27	van Zutphen et al. (2007) ⁵³	—	—
28	Gable and Lutz (2000) ⁵⁴	—	—
29	Shin and Huh (2011) ⁵⁵	—	—

Parenting Styles and Practices

A summary of whether information was provided on the reliability, factor structure, internal consistency, or reference to an external study is presented in Table 6. Of the three studies that assessed parenting styles,^{43,45,54} two reported information on the internal consistency of the measures^{45,54} and one provided information on differences in assessments of the scale that were conducted 2 weeks apart.⁴³ Of the 12 studies that provided any support for selection of the parenting practice measure, five studies directly reported internal consistency information,^{29,34,36,42,44} five studies referred the reader to data presented in a previous article,^{32,34,43,49,52} four studies provided reliability information,^{31,43,49,50} and two studies provided information on the factor structure of the items.^{33,34} In total, nine external references were provided to support the inclusion of scales.^{56,57,59–61,75–78} Combining information from Tables 5 and 6 indicates that only six (20.7%) of the studies included in the review provided any information on the reliability, validity, factor structure, or internal consistency of both the outcome and exposure measures.^{31,42,43,49,50,52}

Associations between Parenting and SV

Parenting styles. Three studies examined the associations between parenting styles and SV.^{43,45,54} The studies examined different parenting constructs and employed different methodologies making it impossible to ascertain whether there are patterns of association between parenting styles and youth SV.

Parenting practices. The results of the 27 studies that examined parenting practice^{27–44,46–53,55} are presented, stratified by behavior (TV, computer, or video) and parenting practice in Table 7. There were 21 studies that examined the association between TV viewing/watching DVDs and parental rules.^{27–33,35–38,40,42,43,46–50,52,53} The analysis of these studies used analysis of variance, chi-squared analysis, logistic regression, linear regression, and tests of trends. Similarly, the results for TV/DVD co-viewing used Spearman rank order correlations, logistic regression, and linear regression. The variety in analytical frameworks was repeated for each of the other subgroup analyses that are presented in Table 7. Because the studies included in each subgroup are also heterogeneous in terms of participants, setting, and measures, combining the data from across studies to draw any conclusions about patterns in the data is very difficult and a formal meta-analysis is not possible. Similarly, presenting findings as positive, negative, or null associations based on an arbitrary p value of <0.05 could also be misleading because both the type of analysis and sample size affects the p value obtained, which could lead to misinterpretation of potentially important findings.⁷⁹

Although we acknowledge the inherent difficulty in combining data from heterogeneous studies, it would be helpful to have an impression of the range of findings and the strength of those findings that have been reported. This

overview could be used to identify research gaps that could be further examined in future studies. As such, we have rated the strength of evidence for each of the analyses that were conducted across studies as either: (1) Not reported; (2) little evidence ($p > 0.05$); (3) some evidence ($p < 0.05$); (4) increasing evidence ($p < 0.01$); and (5) strong evidence ($p < 0.001$).⁷⁹ (Please note that some articles included multiple analyses and all tests were included in this summary.) The percent of studies in each evidence category are then shown graphically in Figure 2 for each of the ten subgroups of studies that were presented in Table 7. The number of studies included in each subgroup is also presented to facilitate an interpretation of how associations may be a function of the number of analyses conducted. A visual inspection of the figure indicates that across the nine different subgroup analyses there are no clear patterns of all strong evidence or all little evidence, suggesting that the evidence for each parenting practice and youth SV is inconsistent.

Discussion

The data presented in this systematic review indicate that there were 29 studies^{27–55} that examined associations between parenting styles or parenting practices and youth SV that met the review inclusion criteria. Only three^{43,45,54} of the 29 studies examined aspects of general parenting constructs in relation to SV. The review has highlighted that the majority of the studies have used SV outcome measures and/or parenting style/practice exposure measures for which there is little or no information about either validity or reliability. Moreover, there is considerable variability in terms of study design, participants, and analytical methods, which makes synthesizing the data from across studies very difficult. However, the general patterns of association and strength of evidence for each parenting practice are mixed, suggesting that while the parenting practices identified (*i.e.*, limits on total time, limits on time of day, content restriction, mealtime rules, parental supervision, contingent SV, no-TV policy, co-viewing, and encouragement) could be important influences on youth SV, it is not currently possible to ascertain what parenting practices interventions should be targeted as part of future SV interventions.

Media-related parenting practices were reported by the child, the parent, or by both parent and child. While it is possible to make rational arguments for either child or parent reports based on the age of the child or the topic being assessed, it is important to recognize that child and parent reports provide different information. If the child is sufficiently cognitively advanced to provide “reliable” information, his or her report will represent their perception of their parent’s behaviors. Conversely, the parent report will provide an indication of the behavior that the parent believes they are adopting. The utility of each report may be dependent on how the information will be used.⁴³ For example, a parent’s report of their media-parenting strategies might be particularly useful if an intervention

Table 6. Summary of Reliability, Internal Consistency, and Factor Structure for Parenting Style and Practice Measures

Parenting styles			
ID	Study	Reliability and/or validity of measure	References
17	Jago et al. (2011) ⁴³	TRT: Paired-sample <i>t</i> -test suggest no mean difference in scores one week apart ($p > 0.05$).	61
19	Padilla-Walker et al. (2011) ⁴⁵	I: Maternal connection ($\alpha = 0.78$), maternal regulation ($\alpha = 0.82$), and maternal autonomy ($\alpha = 0.75$). Paternal connection ($\alpha = 0.78$), paternal regulation ($\alpha = 0.84$), and paternal autonomy ($\alpha = 0.79$).	78
28	Gable and Lutz (2000) ⁵⁴	I: Cronbach's alpha for the Child Rearing Practices Report's (CRPR) subscales (authoritative, authoritarian) were $\alpha = 0.71$ and $\alpha = 0.69$, respectively.	
Parenting practices			
ID	Study	Reliability and/or validity of measure	References
1	Barr et al. (2010) ²⁷	—	—
2	He et al. (2010) ²⁸	—	—
3	Lin et al. (1989) ²⁹	I: Internal consistency for viewing rules ($\alpha = .74$)	—
4	Patriarca et al. (2009) ³⁰	-	—
5	Ramirez et al. (2011) ³¹	TRT: Parental test-retest on rules (k range = 0.44–0.70) Adolescent test-retest on rules (k range = 0.43–0.61) Agreement between parent and child on individual rules was low ($k = 0.28, 0.47, 0.45, 0.44, 0.49, 0.17, 0.53, 0.00$).	
6	Springer et al. (2010) ³²	—	59, 60
7	Van den Bulck et al. (2000) ³³	F: Exploratory factor analysis of restrictive, evaluative and unfocused TV guidance (Cronbach α range = 0.55–0.86) and PC-game guidance (α range = 0.80–0.88) for mothers and fathers.	—
8	Warren et al. (2002) ³⁴	F: Principal component analysis with Varimax rotation: confirmed existence of three components: (a) restrictive mediation, (b) co-viewing, (c) instructive mediation. Three-factor solution accounted for 60.7% of variance I: Restrictive mediation ($\alpha = 0.80$), co-viewing ($\alpha = 0.79$), and instructive mediation ($\alpha = 0.88$) had acceptable internal consistency.	75
9	Holman et al. (1982) ³⁵	—	—
10	Sun. (2009) ³⁶	I: Restrictive mediation ($\alpha = 0.61$) and 'Instructive' mediation ($\alpha = 0.90$).	—
11	Barkin et al. (2006) ³⁷	—	—
12	Barradas et al. (2007) ³⁸	—	—
13	Bauer et al. (2011) ³⁹	—	—
14	Carlson et al. (2010) ⁴⁰	—	—
15	Davison et al. (2005) ⁴¹	—	—
16	Hume et al. (2010) ⁴²	I: Internal consistency for two item parental rules ($\alpha = 0.67$).	—
17	Jago et al. (2011) ⁴³	TRT: Paired-sample <i>t</i> -test: No difference in scores at 1 week apart ($p > 0.05$).	56, 57
18	Lee et al. (2009) ⁴⁴	I: Internal consistency of 7 items ($\alpha = 0.76$).	—
20	Te Velde et al. (2011) ⁴⁶	—	—
21	Vandewater et al. (2005) ⁴⁷	—	—
22	Griffore et al. (1996) ⁴⁸	—	—
23	Hardy et al. (2006) ⁴⁹	TRT: Reliability reported in previous study	76
24	Salmon et al. (2005) ⁵⁰	TRT: Restriction two week test-retest ICC range = 0.71–0.88, Rules, ICC range = 0.77–0.90.	—
25	Wiecha et al. (2001) ⁵¹	—	—
26	Truglio et al. (1996) ⁵²	—	77
27	van Zutphen et al. (2007) ⁵³	—	—
29	Shin and Huh. (2011) ⁵⁵	—	—

TRT, Test–retest reliability; I, internal consistency; F, factor structure; ICC, intraclass correlation; α =Cronbach alpha; k , Cohen measure of agreement.

Table 7. Summary of Results of Associations between Parenting Practices and Screen-Viewing

ID	Study	Findings
TV and DVD / VCR: Rules		
1	Barr et al. (2010) ²⁷	One-way ANOVA: No association between TV usage of those with no TV policy ($n=201$, $M=1$ hour 1 minute) and those who did not have one ($n=22$, $M=1$ hour 11 minute). (ANOVA statistics not reported.)
2	He et al. (2010) ²⁸	Chi-squared test: Children with total time rules more likely to have screen time <2 hours/day than ≥ 2 hours/day: 73.2% of children who had such rules had screen time <2 hours/day compared with 61.3% who reported ≥ 2 hours/day ($p<0.05$).
3	Lin and Atkin. (1989) ²⁹	Correlation: Viewing rules positively associated with child viewing ($r=0.11$; $p\leq 0.05$). VCR rules positively associated with VCR use ($r=0.10$; $p\leq 0.05$) and child viewing ($r=0.09$; $p=0.09$).
4	Patriarca et al. (2009) ³⁰	Multivariate logistic regression: Parent control over TV viewing negatively associated with child SV ≥ 2 hours/day (OR=0.93; 95% CI=0.68, 1.27; $p=0.66$) Multivariate linear regression: Negative association between parent control in TV viewing and whether child SV ≥ 2 hours/day ($\beta=0.04$; $t=0.01$; $p=0.99$).
5	Ramirez et al. (2011) ³¹	Multiple regression: Child report: TV viewing negatively associated with TV rules, ($B=0.18$; $SE=0.07$; $\beta=-0.22$; $p<0.01$). Parent report: TV viewing negatively associated with TV rules ($B=0.18$; $SE=0.08$; $\beta=-0.22$; $p<0.01$).
6	Springer et al. (2010) ³²	Logistic regression: children with rules were 1.68 times more likely to view ≤ 2 hours/day on weekdays (OR=1.68; 95% CI=1.22, 2.32; $p<0.05$) and 1.42 more likely to view ≤ 2 hours/day on weekends (OR=1.42; 95% CI=1.04, 1.94; $p<0.05$).
7	Van den Bulck et al. (2000) ³³	Hierarchical stepwise regression: Mother's restrictive mediation negatively associated with girls TV viewing ($\beta=-0.19$; $p<0.001$)
9	Holman et al. (1982) ³⁵	Correlations: Children with discriminating parents (able to specify unsuitable programs) likely to view more commercial TV ($r=0.15$; $p<0.01$). Child selection of their own TV programs was associated with higher viewing ($r=0.30$, $p<0.001$). Parent selection of TV programs for the child was not associated with higher TV viewing ($r=0.00$; $p>0.05$).
10	Sun (2009) ³⁶	Correlations: Child TV viewing not significantly correlated with total limits and content restrictions (restrictive mediation) for urban ($r=0.044$; $p>0.05$) or rural ($r=-0.002$; $p>0.05$) children.
11	Barkin et al. (2006) ³⁷	Media exposure time varied depending on media mediation style; restrictive style ($M=2.4$ hours/day; $SD=1.3$; p n.r), instructive style ($M=2.9$ hours/day; $SD=1.5$; p n.r) and unlimited ($M=4.1$ hours/day; $SD=1.6$; p n.r).
12	Barradas et al. (2007) ³⁸	Linear regression: Parent rules were associated with TV viewing at ages 10–12 ($\beta=2.43$; $p<0.001$), 13–15 ($\beta=1.64$; $p<0.01$), and 16–18 ($\beta=0.98$; $p>0.05$). The associations persisted following adjustment for parental variables: age 10–12 ($\beta=2.15$; $p<0.001$), 13–15 ($\beta=1.46$; $p<0.01$), 16–18 ($\beta=0.82$; $p>0.05$) and after further adjustments for demographics: age 10–12 ($\beta=2.15$; $p<0.001$), 13–15 ($\beta=1.73$; $p<0.01$), 16–18 ($\beta=1.11$; $p<0.05$).
14	Carlson et al. (2010) ⁴⁰	Logistic regression: Children who really agree that their parents have rules over total TV viewing time are less likely to exceed 2 hours/day of SV (OR=0.66; 95% CI=0.55, 0.80; p nr) than those who really disagree that their parents have rules.
16	Hume et al. (2010) ⁴²	Logistic regression: Parent TV viewing rules were negatively associated with likelihood of viewing >2 hours/day (unadjusted OR=0.6; 95% CI=0.44, 0.86; $p\leq 0.01$). When model was adjusted for all other significant variables and clustering by class, association was attenuated (adjusted OR and CI not reported).
17	Jago et al (2011) ⁴³	Multinomial regression: RRR for children viewing 2–4 hours/day TV was 2.2 times higher for children with low restriction of sedentary time compared to those with high restrictions (RRR: 2.16; 95% CI=1.19, 3.91; $p=0.010$). The risk of viewing >4 hours/day TV was 3.27 times higher for children with low restrictions compared to those with high restrictions (RRR: 3.27; 95% CI=1.28, 8.34; $p=0.013$).
20	Te Velde et al. (2011) ⁴⁶	Generalized Estimating Equation Regression: Adjusted regression analyses: (log scale) Rules about total TV viewing ($\beta=-0.126$; 95% CI= -0.225, -0.026) and times when child can view TV ($\beta=-0.193$; 95% CI= -0.294, -0.093) were significantly related to TV viewing ($p<0.05$, exact p not reported).

continued on page S-65

Table 7. Summary of Results of Associations between Parenting Practices and Screen-Viewing *continued*

ID	Study	Findings
21	Vandewater et al. (2005) ⁴⁷	Correlations: TV time rules negatively associated with child viewing ($r = -0.14$; $p < 0.001$) and positively associated with frequency of viewing TV ($r = 0.17$; $p < 0.001$). Program rules positively associated with duration (minutes) ($r = 0.10$; $p < 0.001$) and frequency of child TV viewing ($r = 0.44$; $p < 0.001$). ANCOVA: Parents with time rules report that child viewed TV more frequently (3.06) than those with no time rules (2.78) ($F = 15.38$; p ; $\beta < 0.001$). Parents with time rules report lower child viewing ($M = 95.30$ minutes/day) than those with none ($M = 125.69$ minutes/day) ($F = 16.62$; $p < 0.001$). ANCOVA: Parents with program rules report higher frequency of child TV viewing (3.14) than those with no program rules (2.07) ($F = 155.83$; $p < 0.001$). Program rules associated with higher viewing times for children ($M = 111.95$ minutes/day) than those without such rules ($M = 79.48$) ($F = 10.91$; $p < 0.001$).
22	Griffore and Phenice. (1996) ⁴⁸	t-test: Children who lived in houses with no rules watched more weekday TV than those who had rules (5.1 hours/day, $SD = 3.4$ vs. 4.7 hours/d, $SD = 3.3$, $t = 2.54$, $p = 0.011$). Associations were not significant at weekends; children with no rules watched 5.5 hours/day TV ($SD = 3.7$), children with rules watched 5.2 hours/day ($SD = 3.4$), ($t = 1.56$; $p = 0.119$).
23	Hardy et al. (2006) ⁴⁹	Logistic regression: Parent rules and child perception of rules not significant predictors of viewing time. Likelihood of child with rules watching ≥ 2 hours/day TV (in comparison to children with no rules, respectively): Turn off TV if child watches too much ($OR = 1.5$; 95% $CI = 0.9, 2.5$; $p > 0.05$) Do not let child watch too much TV ($OR = 1.1$; 95% $CI = 0.6, 1.8$; $p > 0.05$) Prohibits TV during meal times ($OR = 1.0$; 95% $CI = 0.9, 1.2$; $p > 0.05$) TV time restrictions ($OR = 0.6$; 95% $CI = 0.3, 1.3$; $p > 0.05$).
24	Salmon et al. (2005) ⁵⁰	Logistic regression: Children who have rules prohibiting TV during mealtime less likely to watch ≥ 2 hours/day TV (Boys: adjusted $OR = 0.6$; 95% $CI = 0.3, 0.9$; $p < 0.05$. Girls: adjusted $OR = 0.6$; 95% $CI = 0.4, 0.9$; $p < 0.05$). For boys, likelihood of viewing ≥ 2 hours/day TV was reduced when parents restrict TV viewing (adjusted $OR = 0.7$; 95% $CI = 0.3, 1.4$; $p > 0.05$) or when child is not allowed to watch TV before doing homework ($OR = 0.6$; 95% $CI = 0.3, 1.1$; $p > 0.05$).
26	Truglio et al. (1996) ⁵²	Multiple linear regression: Regulation of TV viewing has significant negative relationship with child's general audience TV shows (drama, action, variety) at time 1 (3/5 years) ($\beta = -0.20$; $R^2 = 0.26$; $t = -03.78$; $p < 0.001$) and time 2 (5/7 years) ($\beta = -0.18$; $R^2 = 0.30$; $t = -03.39$; $p < 0.001$). TV regulation has little impact on child entertainment viewing (primarily cartoons) at Time 1 ($\beta = -0.05$; $R^2 = 0.17$; $t = -0.83$; $p > 0.10$) but has significant negative relationship at time 2 ($\beta = -0.18$; $R^2 = 0.20$; $t = -03.08$; $p < 0.01$).
27	van Zutphen et al. (2007) ⁵³	ANOVA with follow-up trend analysis: The strictness (e.g., tightness) of rules was associated with overall TV time. Children with very tight rules had mean TV time of 63 minutes on previous day ($SD = 2.7$). Those with not very tight rules ($M = 100$ min; $SD = 4.7$), and those that have no rules ($M = 90$; $SD = 2.4$) (linear trend $p < 0.001$) (t value and p nr). In comparison to children with very tight rules (reference category), children with quite tight rules reported 21 additional minutes (95% $CI = 13, 28$), those with not very tight rules reported 31 more minutes (95% $CI = 20, 42$), and those with no rules reported 20 more minutes of viewing time (95% $CI = 13, 28$).
TV and DVD/VCR: Co-viewing		
10	Sun (2009) ³⁶	Correlations: Child TV viewing was significantly correlated with co-viewing for urban areas ($r = 0.198$; $p \leq 0.01$) but not rural areas ($r = 0.027$; $p > 0.05$).
15	Davison et al. (2005) ⁴¹	Spearman rank correlations: Family co-viewing was cross-sectionally associated with TV at age 9 ($r = 0.35$; $p < 0.001$) and 11 ($r = 0.22$; $p < 0.001$). Little evidence that co-viewing at 9 was associated with TV viewing at age 11 ($r = 0.13$; $p > 0.05$). Change in co-viewing from age 9 to 11 positively associated with change in TV viewing from 9 to 11 ($r = 0.18$; $p > 0.05$).
23	Hardy et al. (2006) ⁴⁹	Logistic regression: Children who co-view with parents more than once per week are more likely to view ≥ 2 hours/day TV: 71.2% who co-view more than once/week have ≥ 2 hours/day TV viewing ($OR = 2.8$; 95% $CI = 1.6, 4.7$; $p < 0.001$). Logistical regression: In best predictive model (of family home environment and adolescents spending ≥ 2 hours/day TV viewing), adolescents watching TV with parents ≥ 1 /week had were more likely to watch ≥ 2 hours/day TV ($OR = 2.3$; 95% $CI = 1.3, 4.1$; $p = 0.004$).
8	Warren et al. (2002) ³⁴	Linear regression: co-viewing was associated with child TV viewing ($\beta = 0.16$; $p < 0.01$).

continued on page S-66

Table 7. Summary of Results of Associations between Parenting Practices and Screen-Viewing *continued*

ID	Study	Findings
TV and DVD / VCR: Limit setting		
13	Bauer et al. (2011) ³⁹	Hierarchical linear regression: Little evidence of parent encouragement for daughter to decrease TV viewing (familial support for limiting TV use) being associated with TV (unadjusted standardized $\beta = -0.14$; $p = 0.446$. Adjusted standardized $\beta = 0.04$; $p = 0.836$).
14	Carlson et al. (2010) ⁴⁰	Logistic regression: (parent report) Children who always/very often have limits are less likely to exceed 2 hours/day of SV (OR=0.75; 95% CI=0.62, 0.91; p nr) than those who rarely/never have limits. Those who sometimes have limits are also less likely to exceed 2 hours/day SV (OR=0.95; 95% CI=0.77, 1.17; p n.r) than those who rarely/never have limits.
15	Davison et al. (2005) ⁴¹	Spearman correlation: Girls TV restriction at age 9 positively associated with TV viewing at age 11 ($r = 0.18$; $p < 0.01$).
18	Lee et al. (2009) ⁴⁴	Correlation: Parent limits correlated with TV time, at wave 1 (age 0–12) $r = -0.21$; $p < 0.01$, and wave 2 (age 5–18) $r = -0.11$; $p \leq 0.05$. Linear regression parent limits negatively associated with TV time in cross-sectional analyses at 0–4 yrs ($r = -0.16$; $p \leq 0.01$), 5–8 ($r = -0.26$; $p \leq 0.01$) and 9–12 ($r = -0.16$; $p \leq 0.01$), associations attenuated in longitudinal models 0–4 ($r = -0.10$; $p > 0.05$), 5–8 ($r = 0.00$; $p > 0.05$), and 9–12 ($r = -0.05$; $p > .05$).
25	Wiecha et al. (2001) ⁵¹	Linear regression: Children with TV limits watched less TV than those with no limits (3.0 hours/day vs. 3.8 hours/day; $p < 0.001$). Children whose parents set TV limits reported less TV show, video, and movie viewing (2.8 hours/day vs. 3.5 hours/d; p nr). Multivariate regression: No limits on TV viewing associated with increase of 0.48 hours viewing (95% CI=0.26, 0.70; $p < .01$), 0.42 hour increase in TV shows, videos and movie viewing (95% CI=0.21, 0.63; $p < 0.01$).
TV and DVD / VCR: Supervision / Control		
4	Patriarca et al. (2009) ³⁰	Logistic regression: Parental control was not associated with likelihood of viewing > 2 hours TV/day (OR=0.93; 95% CI=0.68, 1.27; $p = 0.66$).
TV and DVD / VCR: Encouragement		
26	Truglio et al. (1996) ⁵²	Linear regression: Parental encouragement of TV viewing positively related to general audience viewing, but only at Time 2 (5 and 7 years old) ($\beta = .20$; $t = 3.54$; $p < 0.001$). At Time 1 (3 and 5 years old) $\beta = -0.06$; $t = -1.26$; $p > 0.10$. Relationship between parental encouragement and child entertainment viewing at Time 1 is $\beta = -0.01$, $t = -0.10$, $p > 0.10$, at Time 2 $\beta = 0.10$, $t = -1.65$, $p < 0.10$.
27	van Zutphen et al. (2007) ⁵³	ANOVA: TV time was higher when family environment enables easier access to TV, and for all indicators of TV access, with dose-response association across categories ($p < 0.001$). F test values not reported.
Computer: Rules		
2	He et al. (2010) ²⁸	Chi-squared: For homework: On weekdays, 27.8% of children with rules/limits use computer for < 2 hours/day ($p > 0.05$), whereas 30.4% with rules/limits use for ≥ 2 hours/day ($p > 0.05$). On weekends, of those with rules/limits, 22.7% use for < 2 hours/day and 21.9% for ≥ 2 hours/day ($p > 0.05$). Non-homework: On weekdays, 68.1% of children with rules/limits use for < 2 hours/day and 61.0% use computer ≥ 2 hours/day ($p > 0.05$). On weekends 64.6% use for < 2 hours/day and 47.4% ≥ 2 hours/day ($p < 0.01$).
5	Ramirez et al. (2011) ³¹	Linear regression: Child-reported computer use negatively associated with computer rules ($B = -0.23$; SE=0.12; $\beta = -0.18$; $p < 0.05$). In parent report model little evidence that computer use was associated with computer rules ($B = 0.14$; SE=0.09; $\beta = -0.14$; $p > 0.10$).
4	Patriarca et al. (2009) ³⁰	Linear regression: Mean computer use time had little association with parent control of computer use ($\beta = 1.46$; $t = 0.32$; $p = 0.75$).
Computer: Limits		
18	Lee et al. (2009) ⁴⁴	Correlation: Parent limits correlated with PC time at wave 1 (0–12) ($r = 0.03$; $p > 0.05$), and wave 2 (5–18) ($r = -0.07$; $p < 0.05$). Linear regression: Parental limits negatively associated with computer time at 9–12 ($r = -0.14$; $p \leq 0.05$). No other significant associations cross-sectionally at 0–9 years ($r = -0.03$; $p > 0.05$), 5–13 years ($r = 0.08$; $p > 0.05$), or > 9 years ($r = 0.00$; $p > 0.05$). No significant longitudinal associations at 0–9 years ($r = 0.04$; $p > 0.05$) or 5–13 years ($r = 0.02$; $p > 0.05$).

continued on page S-67

Table 7. Summary of Results of Associations between Parenting Practices and Screen-Viewing *continued*

ID	Study	Findings
25	Wiecha et al. (2001) ⁵¹	Multivariate regression: Children who had no TV limit had higher computer time (M=0.34 minutes/day; SD=0.46) compared with those with TV limits (M=0.25 minutes/day; SD=0.32; <i>p</i> nr).
29	Shin and Huh. (2011) ⁵⁵	Hierarchical regression: Parent mediation not significantly associated to stopping game playing ($\beta = -0.03$, <i>p</i> > 0.05).
Videogames: Rules		
2	He et al. (2010) ²⁸	Chi-squared: Time spent on videogames is lower for those who have rules. Weekdays: More children who report videogame rules reported <2 hours/day screen time (58.8%; <i>p</i> > 0.05) than ≥ 2 hours/day (53.6%; <i>p</i> > 0.05). Weekends: Fewer children who reported ≥ 2 hours/day screen time report rules (33.1%) compared to those who reported <2 hours/day (51.8%; <i>p</i> > 0.05).
4	Patriarca et al. (2009) ³⁰	Linear regression: Parent control of playing videogames negatively associated with mean minutes of videogame time per day ($\beta = -12.11$; <i>t</i> = -2.21; <i>p</i> = 0.028).
7	Van den Bulck and Van den Bergh. (2000) ³³	Multiple regression: Mother's restrictive mediation of computer use negatively associated with girls' computer game use ($\beta = -0.24$; <i>p</i> < 0.001).
Video-games: Limits		
14	Carlson et al. (2010) ⁴⁰	Logistic regression (parent report): Children who do not have/play videogames were less likely to exceed 2 hour/day SV (OR=0.87; 95% CI=0.67, 1.13) than those who rarely/never play videogames. Children who always/very often have time limits on video-game use less likely to exceed 2 hours/day (OR=0.73; 95% CI=0.73, 1.11) than those who rarely/never play videogames. Children who sometimes have limits are more likely to exceed 2 hours/day than those who rarely/never have limits (OR=1.20; 95% CI=0.96, 1.50).
18	Lee et al. (2009) ⁴⁴	Correlation: Parent limits associated with video game use time, wave 1 (<i>r</i> = -0.04; <i>p</i> > 0.05), and wave 2 (<i>r</i> = -0.01; <i>p</i> > 0.05). Parental limits negatively correlated with videogame time (at 9–12 to 14+) (<i>r</i> = -0.11; <i>p</i> ≤ .05).
Video-games: Co-playing		
29	Shin and Huh. (2011) ⁵⁵	Hierarchical regression: Parental mediation not significantly related to co-playing ($\beta = 0.04$, <i>p</i> > 0.05) of video games.

ANOVA, analysis of variance; ANCOVA, analysis of covariance; SD, standard deviation; nr, not reported; OR, odds ratio; CI, confidence interval; SV, screen-viewing.

focuses on changing parent behavior. Equally, if an intervention incorporates elements of parent-mediated changes to the child's behavior, such as helping the children to identify alternative activities in which to engage when presented with reductions in media opportunities, child reports of parenting practices may be useful. Thus, when considering the selection of measures or the creation of new measures, there is a need to be clear about how the media parenting information will be used.

Implications for Future Development of SV Parenting Measures

We identified only three studies that assessed aspects of the general parenting style in relation to SV.^{43,45,54} Parenting styles are based on sound psychological literature and theoretical frameworks, and, as such, the measures used benefit from more clearly defined and separable constructs supported by empirical evidence.¹⁸ It is important to note, however, that only a very limited range of

general parenting constructs have been examined in relation to SV. As such, there is a need to identify the key aspects of general parenting that might be important influences on youth SV.

This review has captured information on media parenting practices that have been assessed in the literature. The studies included in the review were conducted between 1982 and 2011, and SV behaviors and media parenting practices have changed significantly over this time period. For example, it was recently reported that many 10- to 11-year-old children engage in multi-SV in which they are often using two or three SV devices, such as a computer, phone, and TV, at the same time.⁸⁰ The parenting practices that a parent adopts in relation to these multiscreen viewing options is likely to be very different from those that might have been conducted 10 years ago, when viewing was largely confined to a fixed television or computer screen. Thus, in addition to developing more refined measures that can more reliably assess the media practices that were identified in this review, there is also a need to

Figure 2. Strength of evidence of parenting practices and screen-viewing.

understand contemporary media parenting practices. Therefore, qualitative work with parents is required to examine these issues before developing future measures.

Current information on parenting practices and SV is limited by a lack of valid and/or reliable measures. It has been suggested by Aiken that the “the value of scientific data depends on the precision with which the variables under consideration are observed and measured.”⁸¹ The data presented in this article would suggest that our current understanding of parental factors and SV is limited by the assessment methods. Many studies identified in the present review are limited by measures of exposure (*i.e.*, parent styles or practices) and/or outcome (*i.e.*, SV) that lack sufficient evidence for their reliability or validity.

Although a wide range of SV parenting practices have been examined in relation to youth SV, there is little consistency in the terms used to define SV parenting practices. For example, the term “rules” is used to cover a large range of different parenting practices (*e.g.*, limits on time, limits on content or limits on time of day). The measurement of parenting practices is therefore at risk of the “Jingle-Jangle” fallacy⁸² in which two different constructs are labeled similarly (*e.g.*, different/combinations of rules being generically termed “rules”) and thus incorrectly used interchangeably (Jingle fallacy) or where two practices carry different labels (*e.g.*, “limit setting”/“restrictive mediation”) but actually reflect the same construct (Jangle fallacy). Thus, there is a need for agreement on common terminology that is used to describe parenting practices. The tools that are used to assess these specific practices also need to be developed.

Overall, the information yielded by this systematic review indicates that the measurement of SV parenting practices would benefit from more systematic, extensive, and transparent scale development and validation research, with particular focus on construct definition. This process could begin by achieving consensus on the definitions for the seven rule and two nonrule-based parenting practices that have been identified in this review. Qualitative work should then be conducted with parents and children to identify any additional parenting practices that have not been previously assessed. At this stage, it is critical to be clear about whether the new scale is intended to be parent or child reported and the rationale for that decision. An initial item pool should then be developed before experts (*e.g.*, academics, parents, and practitioners) are consulted to test the item content relevance⁸³ and guide item refinement. Statistical approaches to scale validation (*e.g.*, exploratory and confirmatory factor analysis) can then be employed before constructs are labeled. It is also important to note that as scale development is an ongoing process in which evidence for the validity and reliability of scale scores is amassed,⁸⁴ researchers should continue to explore and report the psychometric properties of the scales they use. Therefore, we propose that researchers should consider the following four recommendations when considering the development of new SV parenting measures.

1. Researchers should define and agree on SV parenting practice terms.
2. Researchers should develop and validate new scales to measure parenting practices from first principles with independent work for child- and parent-reported measures.
3. Where parenting practice data are reported from scales for which psychometric support is weak or not available, researchers should justify their inclusion of the measure and include data pertaining to validity and reliability from their own data set.
4. Peer reviewers and editors should ensure that evidence for the psychometric properties of scales is not overlooked in manuscripts submitted for publication.

Strengths and Limitations

The major strength of this article is the systematic review of the literature. It is important to recognize, however, that the findings are limited by the quality of the studies included in the review. The review examined parent practices, parent styles, and parent mediation as separate items. However, we are aware that in certain circumstances parent styles could moderate the effect of parenting practices. This article did not explore such relationships and is thus unable to comment on any such associations. The searches were also only conducted in English and therefore it is possible that further evidence in non-English language journals, which could have added to the body of literature, has been missed in this review.

Conclusions

This systematic review has identified 29 studies that have examined parenting styles and practices in relation to youth SV.^{27–55} The studies include child-reported measures, parent-reported measures, and dual-reported measures. Data have been collected on children and adolescents, and a wide range of analytical methods have been used. The heterogeneous nature of the study designs prevents a formal synthesis of findings. However, the data indicate that a wide range of measures have been used to assess SV parenting practices, but in general there is a lack of information about the validity and reliability of the tools. No study has assessed parenting styles or practices in relation to multiscreen viewing. There is a need for new measures that assess a range of media parenting practices that are relevant to multiple forms of SV and have been shown to reliably assess the targeted practice in the participant group.

Acknowledgments

This report is research arising from a Career Development Fellowship (to Dr. Jago) supported by the National Institute for Health Research. The views expressed in this publication are those of the authors and not necessarily those of the National Health Service (NHS), the National

Institute for Health Research, or the Department of Health. The preconference to the 2012 International Society for Behavioral Nutrition and Physical Activity (ISBNPA) annual meeting, "Parenting Measurement: Current Status and Consensus Reports" and resulting manuscripts were made possible due to funding from the United States Department of Agriculture/Agricultural Research Service (USDA/ARS 2012-68001-19285) and the National Heart, Lung, and Blood Institute of the National Institutes of Health (R13HL114262).

Author Disclosure Statement

We have no competing interests to declare.

References

1. Stamatakis E, Hamer M, Dunstan DW. Screen-based entertainment time, all-cause mortality, and cardiovascular events: Population-based study with ongoing mortality and hospital events follow-up. *J Am Coll Cardiol* 2011;57:292–299.
2. Grontved A, Hu FB. Television viewing and risk of type 2 diabetes, cardiovascular disease, and all-cause mortality: A meta-analysis. *JAMA* 2011;305:2448–2455.
3. Jago R, Baranowski T, Baranowski JC, et al. BMI from 3–6 y of age is predicted by TV viewing and physical activity, not diet. *Int J Obes Relat Metab Disord* 2005;29:557–564.
4. Padez C, Mourao I, Moreira P, et al. Prevalence and risk factors for overweight and obesity in Portuguese children. *Acta Paediatr* 2005;94:1550–1557.
5. Carvalhal MM, Padez MC, Moreira PA, et al. Overweight and obesity related to activities in Portuguese children, 7–9 years. *Eur J Public Health* 2007;17:42–46.
6. Marshall SJ, Biddle SJH, Gorley T, et al. Relationships between media use, body fatness and physical activity in children and youth: A meta-analysis. *Int J Obes Relat Metab Disord* 2004;28:1238–1246.
7. Ekelund U, Brage S, Froberg K, et al. TV viewing and physical activity are independently associated with metabolic risk in children: The European Youth Heart Study. *PLoS Med* 2006;3:e488.
8. Page AS, Cooper AR, Griew P, et al. Children's screen viewing is related to psychological difficulties irrespective of physical activity. *Pediatrics* 2010;126:e1011–e1017.
9. Hamer M, Stamatakis E, Mishra G. Psychological distress, television viewing, and physical activity in children aged 4 to 12 years. *Pediatrics* 2009;123:1263–1268.
10. Biddle SJ, Pearson N, Ross GM, et al. Tracking of sedentary behaviours of young people: A systematic review. *Prev Med* 2010;51:345–351.
11. American Academy of Pediatrics–Committee on Public Education. Children. Adolescents and Television. *Pediatrics* 2001;107:423–426.
12. Sisson SB, Church TS, Martin CK, et al. Profiles of sedentary behavior in children and adolescents: The US National Health and Nutrition Examination Survey, 2001–2006. *Int J Pediatr Obes* 2009;1–7.
13. Tremblay MS, Leblanc AG, Janssen I, et al. Canadian sedentary behaviour guidelines for children and youth. *Appl Physiol Nutr Metab* 2011;36:59–64.
14. Department of Health. Change 4 Life. 2009 Available at www.nhs.uk/change4life/Pages/Default.aspx Last accessed June 27, 2013.
15. Baranowski T, Jago R. Understanding mechanisms of change in children's physical activity programs. *Exerc Sport Sci Rev* 2005;33:163–168.
16. Jago R, Fox KR, Page AS, et al. Parent and child physical activity and sedentary time: Do active parents foster active children? *BMC Public Health* 2010;10:194.
17. Jago R, Stamatakis E, Gama A, et al. Parental and child screen-viewing time and home media environment. *Am J Prev Med* 2012;43:150–158.
18. Baumrind D. Current patterns of parental authority. *Devel Psychol Mono* 1971;4:101–103.
19. Darling N, Steinberg L. Parenting style as a context: An integrative model. *Psychol Bull* 1993;113:487–496.
20. Kremers SPJ, Brug J, de Vries H, et al. Parenting style and adolescent fruit consumption. *Appetite* 2003;41:43–50.
21. Patrick H, Nicklas TA, Hughes SO, et al. The benefits of authoritative feeding style: Caregiver feeding styles and children's food consumption patterns. *Appetite* 2005;44:243–249.
22. Jago R, Davison KK, Brockman R, et al. Parenting styles, parenting practices, and physical activity in 10- to 11-year olds. *Prev Med* 2011;52:44–47.
23. Hennessy E, Hughes SO, Goldberg JP, et al. Parent-child interactions and objectively measured child physical activity: A cross-sectional study. *Int J Behav Nutr Phys Act* 2010;7:71.
24. Gustafson SL, Rhodes RE. Parental correlates of physical activity in children and early adolescents. *Sports Med* 2006;36:79–97.
25. Pugliese J, Tinsley B. Parental socialization of child and adolescent physical activity: A meta-analysis. *J Fam Psychol* 2007;21:331–343.
26. Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *BMJ* 2009;339:b2535.
27. Barr R, Danziger C, Hilliard ME, et al. Amount, content and context of infant media exposure: A parental questionnaire and diary analysis. *Int J Early Years Educ* 2010;18:107–122.
28. He M, Piche L, Beynon C, et al. Screen-related sedentary behaviors: Children's and parents' attitudes, motivations, and practices. *J Nutr Educ Behav* 2010;42:17–25.
29. Lin CA, Atkin DJ. Parental mediation and rulemaking for adolescent use of television and VCRs. *Journal of Broadcasting & Electronic Media* 1989;33:53–67.
30. Patriarca A, Di Giuseppe G, Albano L, et al. Use of television, videogames, and computer among children and adolescents in Italy. *BMC Public Health* 2009;9:139.
31. Ramirez ER, Norman GJ, Rosenberg DE, et al. Adolescent screen time and rules to limit screen time in the home. *J Adolesc Health* 2011;48:379–385.
32. Springer AE, Kelder SH, Barroso CS, et al. Parental influences on television watching among children living on the Texas-Mexico border. *Prev Med* 2010;51:112–117.
33. Van den Bulck J, Van den Bergh B. The influence of perceived parental guidance patterns on children's media use: Gender differences and media displacement. *Journal of Broadcasting & Electronic Media* 2000;44:329–348.
34. Warren R, Gerke P, Kelly M. Is there enough time on the clock? Parental involvement and mediation of children's television viewing. *Journal of Broadcasting and Electronic Media* 2002;46:87–101.
35. Holman J, Braithwaite V. Parental lifestyles and children's television viewing. *Australian J of Psychol* 1982;34:375–382.

36. Sun T. Parental mediation of children's TV viewing in China: An urban-rural comparison. *Young Consumers* 2009;10:188–198.
37. Barkin S, Ip E, Richardson I, et al. Parental media mediation styles for children aged 2 to 11 years. *Arch Pediatr Adolesc Med* 2006;160:395–401.
38. Barradas DT, Fulton JE, Blanck HM, et al. Parental influences on youth television viewing. *J Pediatr* 2007;151:369–373, 373 e1–e4.
39. Bauer KW, Neumark-Sztainer D, Fulkerson JA, et al. Familial correlates of adolescent girls' physical activity, television use, dietary intake, weight, and body composition. *Int J Behav Nutr Phys Act* 2011;8:25.
40. Carlson SA, Fulton JE, Lee SM, et al. Influence of limit-setting and participation in physical activity on youth screen time. *Pediatrics* 2010;126:e89–e96.
41. Davison KK, Francis LA, Birch LL. Links between parents' and girls' television viewing behaviors: A longitudinal examination. *J Pediatr* 2005;147:436–442.
42. Hume C, van der Horst K, Brug J, et al. Understanding the correlates of adolescents' TV viewing: A social ecological approach. *Int J Pediatr Obes* 2010;5:161–168.
43. Jago R, Davison K, Thompson JL, et al. Parental sedentary restriction, maternal parenting style and TV viewing among 10–11 year olds. *Pediatrics* 2011;128:e572–e578.
44. Lee S-J, Bartolic S, Vandewater EA. Predicting children's media use in the USA: Differences in cross-sectional and longitudinal analysis. *Br J Dev Psychol* 2009;27:123–143.
45. Padilla-Walker LM, Coyne SM. "Turn that thing off!" parent and adolescent predictors of proactive media monitoring. *J Adolesc* 2011;34:705–715.
46. Te Velde SJ, van der Horst K, Oenema A, et al. Parental and home influences on adolescents' TV viewing: A mediation analysis. *Int J Pediatr Obes* 2011;6:e364–e372.
47. Vandewater EA, Park S, Huang X, et al. No—You can't watch that: Parental rules and young children's media use. *Am Behav Scientist* 2005;48:608–623.
48. Griffiore R, Phenice L. Rules and television viewing. *Psychology Rep* 1996;78:814.
49. Hardy LL, Baur LA, Garnett SP, et al. Family and home correlates of television viewing in 12–13 year old adolescents: The Nepean Study. *Int J Behav Nutr Phys Act* 2006;3:24.
50. Salmon J, Timperio A, Telford A, et al. Association of family environment with children's television viewing and with low level of physical activity. *Obes Res* 2005;13:1939–1951.
51. Wiecha J, Sobol A, Peterson K, et al. Household television access: Associations with screen time, reading, and homework among youth. *Ambulatory Pediatr* 2001;1:244–251.
52. Truglio R, Murphy K, Oppenheimer S, et al. Predictors of children's entertainment television viewing: Why are they tuning in? *J Appl Dev Psychol* 1996;17:475–493.
53. van Zutphen M, Bell A, Kremer P, et al. Association between the family environment and television viewing in Australian children. *J Paediatr Child Health* 2007;43:458–463.
54. Gable S, Lutz S. Household, parent, and child contributions to childhood obesity. *Family Relations* 2000;49:293–300.
55. Shin W, Huh J. Parental mediation of teenagers' video game playing: Antecedents and consequences. *New Media and Society* 2011;13:945–962.
56. Schludermann E, Schludermann S. Replicability of factors in children's report of parent behavior (CRPBI). *J Psychol* 1970;76:239–249.
57. Schludermann S, Schluderman E. *Questionnaire for children and youth (CRPBI-30)*. University of Manitoba: Winnipeg, Manitoba, Canada, 1988.
58. Block JH. *The Child-Rearing Practices Report (CRPR): A Set of Q Items for Description of Parental Socialization Attitudes and Values*. University of California, Berkeley: Berkeley, CA, 1965. Online document at <http://faculty.tru.ca/wlroberts/block,1965.pdf> Last accessed June 27, 2013.
59. Hoelscher DM, Day RS, Lee ES, et al. Measuring the prevalence of overweight in Texas schoolchildren. *Am J Public Health* 2004;94:1002–1008.
60. Windle M, Grunbaum JA, Elliott M, et al. Healthy passages. A multilevel, multimethod longitudinal study of adolescent health. *Am J Prev Med* 2004;27:164–172.
61. Davison KK, Li K, Baskin ML, et al. Measuring parental support for children's physical activity in white and African American parents: The Activity Support Scale for Multiple Groups (ACTS-MG). *Prev Med* 2011;52:39–43.
62. Rideout V, Roberts DF, Foehr MA. *Generation M: Media in the Lives of 8–18 Year Olds*. Henry J. Kaiser Family Foundation: Menlo Park, CA, 2005.
63. Gortmaker SL, Peterson K, Wiecha J, et al. Reducing obesity via a school-based interdisciplinary intervention among youth. *Arch Pediatr Adolesc Med* 1999;153:409–418.
64. Norman GJ, Schmid BA, Sallis JF, et al. Psychosocial and environmental correlates of adolescent sedentary behaviors. *Pediatrics* 2005;116:908–916.
65. Robinson TN. Reducing children's television viewing to prevent obesity: A randomized controlled trial. *JAMA* 1999;282:1561–1567.
66. Patrick K, Calfas KJ, Norman GJ, et al. Randomized controlled trial of a primary care and home-based intervention for physical activity and nutrition behaviors: PACE+ for adolescents. *Arch Pediatr Adolesc Med* 2006;160:128–136.
67. Wendel-Vos GC, Schuit AJ, Saris WH, et al. Reproducibility and relative validity of the short questionnaire to assess health-enhancing physical activity. *J Clin Epidemiol* 2003;56:1163–1169.
68. Verplanken B. Beyond frequency: Habit as mental construct. *Br J Soc Psychol* 2006;45:639–656.
69. Anderson DR, Field DE, Collins PA, et al. Estimates of young children's time with television: A methodological comparison of parent reports with time-lapse video home observation. *Child Dev* 1985;56:1345–1357.
70. Anderson CA, Dill KE. Video games and aggressive thoughts, feelings, and behavior in the laboratory and in life. *J Pers Soc Psychol* 2000;78:772–790.
71. Chinapaw MJ, Sliotmaker SM, Schuit AJ, et al. Reliability and validity of the Activity Questionnaire for Adults and Adolescents (AQuAA). *BMC Med Res Methodol* 2009;9:58.
72. Mendelsohn AL, Berkule SB, Tomopoulos S, et al. Infant television and video exposure associated with limited parent-child verbal interactions in low socioeconomic status households. *Arch Pediatr Adolesc Med* 2008;162:411–417.
73. McMurray RG, Ring KB, Truth MS, et al. Comparison of two approaches to structured physical activity surveys for adolescents. *Med Sci Sports Exerc* 2004;36:2135–2143.
74. Dowda M, Pate RR, Felton GM, et al. Physical activities and sedentary pursuits in African American and Caucasian girls. *Res Q Exerc Sport* 2004;75:352–360.
75. Valkenburg PM, Krcmar M, Peeters P, et al. Developing a scale to assess three styles of television mediation: "Instructive Mediation,"

- “Restrictive Mediation,” and “Social Coviewing”. *Journal of Broadcasting & Electronic Media* 1999;43:52–66.
76. Salmon J, Owen N, Crawford D, et al. Physical activity and sedentary behavior: A population-based study of barriers, enjoyment, and preference. *Health Psychol* 2003;22:178–188.
 77. St. Peters M, Fitch M, Huston AC, et al. Television and families: What do young children watch with their parents? *Child Dev* 1991;62:1409–1423.
 78. Robinson CC, Mandleco B, Olsen SF, et al. The Parenting Styles and Dimensions Questionnaire (PSQD). In: Perlmutter B, Toulia-tos J, Holden GW (eds), *Handbook of Family Measurement Techniques*. Sage: Thousand Oaks, 2001, pp. 319–321.
 79. Sterne JA, Davey Smith G. Sifting the evidence—what’s wrong with significance tests? *BMJ* 2001;322:226–231.
 80. Jago R, Sebire SJ, Gorely T, et al. “I’m on it 24/7 at the moment”: A qualitative examination of multi-screen viewing behaviours among UK 10–11 year olds. *Int J Behav Nutr Phys Act* 2011;8:85.
 81. Aiken LR. *Rating Scales and Checklists: Evaluating Behavior, Personality, and Attitudes*. Wiley: New York, 1996.
 82. Block J. A contrarian view of the five-factor approach to person-ality description. *Psychol Bull* 1995;117:187–215.
 83. Dunn JGH, Bouffard M, Rogers T. Assessing item content-relevance in sport psychology scale-construction research: Issues and recommendations. *Measurement in Physical Education and Exercise Science* 1999;3:15–36.
 84. Messick S. Validity of psychological assessment: Validation of inferences from persons’ responses and performances as scientific inquiry into score meaning. *Am Psychol* 1995;50:741–749.

Address correspondence to:

Russell Jago, PhD

Professor of Pediatric Physical Activity

and Public Health

Centre for Exercise, Nutrition, and Health

Sciences, School for Policy Studies

University of Bristol

8 Priory Road

Bristol, United Kingdom BS8 1TZ

E-mail: Russ.Jago@bris.ac.uk