

Adolescents' Contact With Sexuality in Mainstream Media: A Selection-Based Perspective

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Most work on adolescents' contact with sexuality in mainstream media has been framed in terms of media effects upon the sexual self-concepts, attitudes, and behaviors of youth, even when such causality cannot be inferred. Rarely examined are the sexual characteristics of adolescents that may predict contact with sexual media. Using Steele's (1999) Media Practice Model as a foundation, we reported on these associations for 2,184 Dutch adolescents. This study emphasized sex differences in the characteristics that predict such contact and the role of youths' critical evaluations of information about sex in the media. Correlation and regression analyses revealed several sex differences in the characteristics related to sexual media contact, with individual characteristics accounting for more variance in females and critical evaluations accounting for more variance in males. This study underscores the need for more comprehensive, longitudinal studies of adolescents' media consumption and its connections to sexual development in youth.

A great deal of public and scientific concern has been voiced regarding the links between portrayals of sex in the mainstream media and children's sexual development (e.g., Greenfield, 2004). However, relatively few studies have closely examined relationships between adolescents' use of, or exposure to, sexual content in the media and their sexual behaviors and attitudes (Brown, Steele, & Walsh-Childers, 2002). Studies that have investigated such issues often have several limitations. For example, past research has utilized relatively small samples, and exceptions to this criticism (e.g., Klein et al., 1993; Peterson, Moore, & Furstenburg, 1991) have either focused narrowly on one type of sexual outcome, such as incidence of intercourse (Peterson et al., 1991), or have included sexual outcomes within a more broadly-defined category of "risk behavior" (Klein et al., 1993). Additionally, while cross-sectional and correlational analyses have often limited authors' ability to make conclusions about causality (e.g., Strouse & Buerkel-Rothfuss, 1987; Strouse, Buerkel-Rothfuss, & Long, 1995; Ward & Rivadeneyra, 1999), arguments have been predominantly framed in terms of the effects of sexual media upon children and adolescents, and less often in terms of adolescents' sexual characteristics that may lead them to seek out more sexual media (see Ward & Rivadeneyra and Brown & Newcomer, 1991, for exceptions).

Also, most research that has attempted to establish links between sexual content in the media and adolescent sexual-

ity has been conducted within the United States. However, we cannot assume that these relationships are equivalent between cultures with generally more "sex-positive" values and attitudes, such as the Netherlands (Berne & Huberman, 1999; Braeken, Rademakers, & Reinders, 2003) compared with cultures such as the United States, which are predominantly concerned with the dangers associated with sex (Currier, 1981). This study aimed to inform these gaps in past research by examining which sexual characteristics of adolescents predict their contact with sexual content in the media, using a large, representative sample of Dutch youth. Further, we examined whether evaluations of information in the media have a mediating influence upon the relationships between adolescent sexual characteristics and sexual media consumption. Finally, we explored the potential for adolescents' sex to produce differential main and mediating effects between sexual characteristics, media evaluation, and media contact.

In recent years, individuals' motives for using media and the personal characteristics which influence its consumption have become issues of increased focus (e.g., Steele, 1999; Vanwesenbeeck, 2001; Ward, Gorvine, & Cytron-Walker, 2002; Ward & Rivadeneyra, 1999). Earlier theories used to study connections between media consumption and adolescents' sexuality have mainly postulated effects from the media upon individuals' sexual outcomes (Bandura, 1994; Gerbner, Gross, Morgan, & Signorielli, 1994). However, more recent theories have suggested the possibility of reciprocal influences, calling for increased attention to how individuals select the sexual media that they consume. For instance, the Media Practice Model (Steele) assumes that individuals are both affected by, and affect, the media they encounter. From this perspective, individuals' identities (such as their motivations and self-image)

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influence the media that teens select and use. This leads to interaction with the media source, such as through critical evaluations of its content, which in turn influences the ways teens apply the media to their everyday lives (e.g., attitudes, behaviors).

In this study, we made the issue of learning from the media a central focus of investigation by incorporating this theme into several measures assessing adolescents' selection of media, their interactions with media content, and their own sexual characteristics (motives, self-image, attitudes, and behavior). We operationalized media selection in terms of the extent to which adolescents encounter and attend to *sexual content* in different mainstream media, instead of the general frequency with which they consume media. We assessed interactions with the media in terms of the extent to which adolescents regarded the media as a good source of information about sexuality. Of the several measures assessing the sexual characteristics of youth, discussed in detail below, desiring information about sex also focused directly on the issue of learning.

Though television has been the predominant focus of much past research, other media sources of information gain importance as individuals age (Steele, 1999). Thus, we expected to find more contact with sexual content among older adolescents (H_1). Teenagers must make choices about the types and content of media they consume (Brown et al., 2002). According to the Media Practice Model, adolescents' own identities play a direct role in the selection process. From the Media Practice perspective, the concept of *identity* includes motivations for media use. It seems reasonable that both adolescents' possible motives for media use and their motives for sexual behavior, in general, influence the extent to which they seek out sexual content on television, in magazines, or on the internet.

One motive for media consumption, information-seeking and learning, has been identified as especially important (Ward & Rivadeneyra, 1999). Ward and Rivadeneyra reported that learning motives were one of the strongest predictors of female respondents' sexual outcomes, including stronger endorsements of recreational attitudes toward sexuality (as opposed to procreational or relationship-enhancement attitudes). Learning motives have also been found to be a strong predictor of perceptions of realism regarding sexual content on television (Ward, Corvine, & Cytron-Walker, 2002). We predicted that adolescents' desire to learn more about sexual topics would show a positive relationship to the amount of contact sexual media content (H_2). Further, we sought to examine whether motives for engaging in sexual behavior may also relate to motives for consuming sexually-informative media. Vanwesenbeeck (2001) identified both sensation-seeking and partner-related motives for watching sexually explicit television among Dutch women of a diverse age range, which have also been found to be among the assorted motives for engaging in sexual behavior (Browning, Hatfield, Kessler, & Levine, 2000; Hill & Preston, 1996).

We left as open research questions (RQ_1 and RQ_2) whether two motives for sexual behavior, pleasure-seeking and relationship-enhancement, would also predict adolescents' consumption of sexual content in the media.

Steele's (1999) Media Practice concept of identity also includes aspects of adolescents' self-concepts. In a prior study of viewing sexual media, Vanwesenbeeck (2001) found two sexual self-image variables, sexual preoccupation and sexual esteem, to be positively correlated with women's frequency of watching sexually explicit television. We predicted that self-reported sexual preoccupation would be a positive predictor of contact with sexual media content (H_3). In light of our other predictions, we expected sexual guilt to be negatively correlated with media consumption (H_4).

Exposure to sexual content in the media has mainly been treated as a predictor of adolescents' sexual attitudes and behavior in much of the past research. Viewing media with sexual content has shown, through correlational research, to be positively linked with participants' permissive attitudes toward premarital sex (Calvin, Carroll, & Shmit, 1993; Greeson & Williams, 1986). Studies using correlational methods have supported these findings (Strouse & Buerkel-Rothfuss, 1987; Ward & Rivadeneyra, 1999) and have additionally linked frequency of contact with media with endorsements of more traditional gender norms (Ward & Rivadeneyra, 1999). Less often have researchers questioned whether adolescents' sexual attitudes and behaviors actually *predict* their contact with sexual media content. However, the reciprocal influences proposed by the Media Practice Model would imply that adolescents' attention to sexual content in the media could be predicted from their attitudes toward sex in general. Other studies have found negative attitudes about sexuality to predict a lower amount of sexual content to which individuals voluntarily expose themselves and a lower level of information retention in human sexuality classes (Fisher et al., 1988; Gerrard, Kurylo, & Reis, 1991; Gerrard & Reis, 1989). We thus predicted that permissiveness toward premarital sexuality would be positively associated with adolescents' amount of contact with sexual media (H_5). Further, given Ward and Rivadeneyra's (1999) finding that more media exposure was positively associated with endorsement of traditional gender norms, we expected that egalitarian gender values would be negatively associated with accessing sexual content in media (H_6).

The frequency of contact with sexual media has been found to predict initiation of sexual intercourse in adolescents (Klein et al., 1993; Peterson et al., 1991; Strouse, Buerkel-Rothfuss, & Long, 1995; Ward & Rivadeneyra, 1999). Additionally, frequency of watching music videos has been shown to be a strong predictor of young peoples' number of sexual partners, especially for males (Strouse & Buerkel-Rothfuss, 1987). However, the Media Practice Model suggests that adolescents' attention to sexual content may also be predicted by adolescents' level of sexual experience. Two studies testing for this possibility (Brown

& Newcomer, 1991; Collins et al., 2004) found that non-virgins were more likely to view television programs that included sexual content. The results of both studies showed that earlier reports of television viewing predicted later reports of sexual initiation, but that television viewing was not predicted from earlier sexual behavior, implying an influence effect, as opposed to a selection effect. The study of Collins and colleagues (2004) elaborated further upon this finding by eliminating reverse-causality and extraneous-variable explanations and showing that the same association existed for noncoital sexual behaviors. We sought to gain support for these findings in this study, hypothesizing that adolescents' reports of prior sexual initiation would not predict their level of contact with sexual content in the media (H_7).

Because of the way we have operationalized media selection (i.e., the extent to which adolescents report encountering sexual content in mainstream media sources), we wanted to examine whether critical evaluations of this content also mediated the proposed link between adolescents' sexual characteristics and their consumption of information about sex. It seems reasonable that the characteristics of adolescents that influence attention to sexual content in the media only do so to the extent that the media is regarded as a good source for the knowledge that suits their purposes (H_8).

Additionally, several studies (Brown & Newcomer, 1991; Calfin, Carroll, & Shmit, 1993; Strouse & Buerkel-Rothfuss, 1987; Strouse et al., 1995; Ward et al., 2002; Ward & Rivadeneyra, 1999) have found differences between males and females in the relationships between sexual media consumption and various sexual characteristics of youth. For example, females have shown stronger relationships, compared to males, between exposure to sexual or romantic content in media and sexual initiation (Brown & Newcomer; Strouse & Buerkel-Rothfuss), acceptance of premarital sex (Calfin et al., 1993; Strouse & Buerkel-Rothfuss), and approval of sexually explicit material (Calfin et al.). Females have also been found to view media depictions as more realistic and more likely to happen in one's own life (Ward et al.). Based on these reports, we made a general prediction (H_9) that females, as compared to males, would show stronger associations between sexual media consumption and their sexual motives, self-image, attitudes, and behavior. Whether sex differences would be present in terms of the mediating role of critical evaluation between adolescents' sexual characteristics and their media use was left as an open research question (RQ_3).

In light of the hypotheses outlined above, we also examined the relative mean rankings of adolescents' exposure to and evaluations of different forms of media, and whether these rankings differed between males and females. Such information could be useful for interventions geared toward increasing adolescents' critical evaluations of media, in terms of providing data about which sources are most frequently encountered and most positively evaluated. The issues of rank ordering for contact and evaluations

were left as open research questions (RQ_4 and RQ_5), as were the explorations of whether scores of contact and evaluation for specific media types differed significantly between males and females (RQ_6 and RQ_7).

METHOD

Participants

Participants were recruited through high schools and middle schools, mostly in urban areas, that agreed to participate in data collection. Thirty-one schools were initially randomly selected and contacted, 18 of which immediately agreed to participate. When a school did not agree to assist in data collection, efforts were made to recruit a "sister school" for the study, equivalent to the non-consenting school in terms size, student population, level, and denomination. The final sample consisted of 29 schools.

Participants were 2,184 adolescents living in the Netherlands (Male = 1,016, Female = 1,168), aged 12-17 ($M = 15.15$). Most respondents (90.5%) reported being born in the Netherlands. Most respondents also identified themselves as native Dutch (80.8%), followed by Turkish (2.7%), Moroccan (2.6%), and Surinamese (1.1%). Some respondents also identified themselves as Moroccan-Dutch (1.2%), Surinamese-Dutch (1.2%), and Turkish-Dutch (1.1%). The remaining participants identified themselves as Antillians or Arubans (.7%), Indian-Dutch (.5%), Aruban/Antillian-Dutch (.4%), Indian (.4%), or an other ethnicity (6.7%). Nine participants (.4%) did not provide information about their ethnicity. The vast majority of respondents (99.1%) reported living at home with their parents or guardians.

Measures

Contact with sexual content in the mainstream media was measured by six items on a 5-point scale, from 1 (*never*) to 5 (*very often*) that asked participants how often in the last 6 months they had read something about sex in a book or magazine, heard something about sex on a radio program or saw a television program where sex was discussed, and accessed the internet or called an information line to gain knowledge about sexuality. A Principle Components factor analyses with one proposed factor resulted in satisfactory factor loadings (between .49 and .66) for all items except calling an information line (.26). Cronbach's alpha reliability ($\alpha = .82$) for the remaining five items was sufficient.

Evaluation of sexual information in the media was measured with six items on a 5-point scale, from 1 (*bad*) to 5 (*very good*), asking adolescents' opinions about the quality of information they had encountered in books, magazines, radio programs, television, on the internet, and through telephone information lines. Because the item regarding information lines was removed from the measure of media contact due to poor factor loadings, it was also omitted from this scale for the sake of consistency. The remaining 5 items, when subjected to a Principle

Components factor analyses with one proposed factor, held satisfactory factor loadings (between .63 and .78), and reliability was sufficient ($\alpha = .74$).

Pleasure-seeking motives and relationship-enhancement motives for sexual behavior were assessed through checklist (yes/no) items that asked participants what they found enjoyable (or thought would be enjoyable) about engaging in sexual behavior. Four items assessed pleasure-seeking motives (e.g., "What I (think I) like about sex is the physical excitement.") and 5 items assessed relationship-enhancement motives (e.g., "What I (think I) like about sex is that you are very close to someone else."). Items endorsed by participants each received a score of 1, and a mean score was calculated for both sets of sexual motives.

Wanting information about sex was measured through participants' yes/no responses regarding their desire for more knowledge on a checklist of 16 sexual topics (e.g., contraception, menstruation, masturbation, abortion, and homosexuality). Participants were given a score of 1 for each topic for they reported wanting information, and these responses were totaled, yielding a minimum score of 0 and a maximum score of 16.

Sexual preoccupation was assessed through three items on a 5-point scale, from 1 (*strongly disagree*) to 5 (*strongly agree*), asking participants about how important sex was to their lives (e.g., "I think about sex all the time."). A Principle Components factor analysis showed all items to load sufficiently on this construct (between .48 and .63), and the measure showed good reliability ($\alpha = .75$).

Sexual guilt was measured with five items on a 5-point scale, from 1 (*strongly disagree*) to 5 (*strongly agree*), asking participants about the degree to which they felt guilt or shame in response to sexual stimuli and sexual behavior (e.g., "When I (would) have sexual feelings, I'm ashamed."). Factor loadings, as tested through Principle Components factor analysis, were sufficient (between .54 and .68), as was the scale's reliability ($\alpha = .83$).

Sexual attitudes, as assessed by *permissiveness toward premarital sex* and *egalitarian gender values*, were measured on a 4-point scale from 1 (*Definitely not good*) to 4 (*Definitely good*). Four items constituted the sexual permissiveness measure (e.g., "I feel it's okay for young people to have sex without having deep feelings for each other."), and Principle Components factor analysis showed all items to load on this construct (between .50 and .75). The measure had sufficient Cronbach's alpha reliability (.81). Three items constituted the measure of egalitarian gender values (e.g., "Boys should make passes at girls, not the other way around."). A Principle Components factor analysis revealed factor loadings between .47 and .55 for this scale, and Cronbach's alpha was .69.

Sexual behavior, as measured by *sexual initiation*, was assessed through two questions that asked whether respondents had previously experienced vaginal or anal sexual intercourse. Participants that answered "yes" to either of these questions were classified as having experienced sex-

ual initiation (dummy-coded as 1 for the purposes of regression analyses).

Procedure

Participants completed all measures during regular school hours. A computer program that presented survey items according to students' previous answers administered all measures. For example, if an individual indicated that he/she had no experience with sexual intercourse, questions about contraceptive use with their sexual partners were omitted, but these questions were present for those that did indicate sexual initiation. Respondents were informed that they could cease with the study at any point. They were also, in reward for their participation, entered into a lottery in which 2% of respondents received a monetary prize.

RESULTS

Descriptive Data

Mean scores on all measures for both the entire sample and as divided by males and females, as well as sex comparisons of mean scores, are shown in Table 1. First we examined baseline sex differences in all measures. Using ANOVA, we identified several differences. A small but significant difference was found between males' and females' reports of sexual media consumption, with males reporting more consumption than females ($F[1, 2,043] = 30.40, p < .001$, partial $\eta^2 = .015$). Males also showed a small but significant tendency to give more positive evaluations of sexual information in the media compared to females ($F[1, 2,008] = 5.13, p = .024$, partial $\eta^2 = .003$). Compared to females, males more often endorsed pleasure-seeking motives for sexual behavior ($F[1, 1,961] = 89.90, p < .001$, partial $\eta^2 = .044$), while females more often endorsed relationship-enhancement motives ($F[1, 1,961] = 25.23, p < .001$, partial $\eta^2 = .013$).

Males and females did not differ significantly in their reports of wanting more information about various sexual topics ($F[1, 2,101] = 1.18, p > .05$). In terms of sexual self-image, males reported more preoccupation with sex compared to females ($F[1, 1,838] = 106.96, p < .001$, partial $\eta^2 = .055$), while females reported more sexual shame/guilt ($F[1, 1,792] = 23.56, p < .001$, partial $\eta^2 = .013$). Males showed a slightly greater endorsement of both permissive attitudes toward casual sex ($F[1, 2,001] = 9.35, p = .002$, partial $\eta^2 = .005$) and egalitarian gender norms ($F[1, 1,986] = 12.85, p < .001$, partial $\eta^2 = .006$). Finally, a Chi-square analysis showed no differences between males and females in terms of sexual initiation ($\chi^2[1, N = 2,183] = 1.52, p > .05$).

Sexual Characteristics and Contact with Sexual Media Content

Summaries of the correlational results for the entire sample, and as moderated by sex, are shown in Tables 2 and 3, respectively. To account for the large number of correlational analyses performed, only those correlations signifi-

Table 1. Summary of Means and Gender Comparisons for All Measures (for Entire Sample as Moderated by Gender)

	Total Sample			Males			Females			Mean Comparisons by Gender	
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>F/χ²</i>	<i>df</i>
Demographic variables											
Age	2184	15.15	1.69	1016	15.12	1.70	1168	15.18	1.68	1.13	1,2137
Media Variables											
Contact with Sexual Content	2093	1.98	.81	960	2.09	.89	1133	1.88	.72	30.40***	1, 2043
Evaluation of Information in Media	2055	2.69	1.14	941	2.75	1.20	1114	2.63	1.09	5.13*	1, 2008
Motivational variables											
Physical Pleasure	2007	1.79	1.56	930	2.14	1.55	1078	1.48	1.51	89.90***	1, 1961
Relational	2007	2.7	1.73	930	2.47	1.79	1078	2.83	1.66	25.23***	1, 1961
Want Knowledge	2150	3.55	3.03	995	3.41	3.14	1154	3.66	2.93	1.18	1, 2101
Sexual self-image variables											
Sexual Preoccupation	1880	2.71	1.01	867	2.97	1.01	1013	2.49	.96	106.96***	1, 1838
Sexual Shame/Guilt	1831	2.26	.93	846	2.13	.90	985	2.36	.93	23.56***	1, 1792
Attitudinal variables											
Sexual Permissiveness	2049	2.86	.68	951	2.91	.70	1098	2.82	.67	9.35**	1, 2001
Egalitarian Gender Values	2036	3.43	1.02	934	3.51	1.01	1101	3.36	1.03	12.85***	1, 1986
Sexual Behavior variables											
Sexual Initiation	2184	.24	.43	1016	.23	.42	1168	.25	.43	1.52	1, 2183

* $p < .05$ ** $p < .01$ *** $p < .001$

cant at the level of $p < .001$ were considered to be meaningful. We compared the strengths of correlations between males and females using one-tailed z -tests (Cohen & Cohen, 1983). Correlational strengths were considered significantly different between males and females if the z statistic was significant at the level of $p < .01$.

Evaluation of information in the media was strongly correlated with media contact, both for the entire sample and for males and females separately. There was no significant difference in the strength of this correlation when comparing males to females ($z = .598$, $p > .05$). Age showed significant positive correlations with media contact, for both the total sample and for males and females separately. Females showed significantly stronger correla-

tions between age and media contact ($z = 4.03$, $p < .001$).

Pleasure-seeking motives showed significant positive correlations for the total sample with all types of media exposure. Males and females both showed significant correlations between this motive and media contact, with females showing significantly stronger correlations ($z = 3.63$, $p < .001$) than males. Relationship-enhancement motives also showed significant correlations with media contact for the total sample and for both males and females. No differences between males and females were found in the strength of correlations between media contact and relationship-enhancement sexual motives ($z = 1.328$, $p > .05$). Wanting sexual knowledge was also significantly, positively correlated with media contact for the entire sample and for males and females separately. No significant differences existed in the strengths of the correlations between males and females ($z = 1.599$, $p > .05$).

Both sexual self-image variables showed significant relationships with sexual media contact, both for the total sample and for males and females separately. Sexual shame/guilt held negative correlations with media contact, while sexual preoccupation held positive relationships. Females showed stronger correlations between sexual preoccupation and media contact, as compared to males ($z = 2.66$, $p = .004$). Females also showed stronger negative correlations between sexual shame/guilt and media contact ($z = 4.38$, $p < .001$).

Positive attitudes toward casual sex showed significant, positive correlations with media contact for the entire sample. These correlations were significant for both males and females, but females showed significantly stronger correlations between permissive attitudes and media contact ($z = 2.53$, $p = .006$). Nontraditional gender values showed significant positive correlations with media contact. Comparing the strengths of males' and females' correla-

Table 2. Correlational Results for Relationships Between Sexual Characteristics and Contact with Sexual Content in Media (for Entire Sample)

	Contact with Sexual Content
Media variables	
Evaluation of Information in Media	.740***
Demographic variables	
Age	.224***
Motivational variables	
Physical Pleasure	.384***
Relational	.169***
Wants Knowledge	.173***
Sexual Self-image variables	
Sexual Preoccupation	.381***
Sexual Shame/Guilt	-.269***
Attitudinal variables	
Sexual Permissiveness	.285***
Egalitarian Gender Values	.115***
Sexual Behavior variables	
Sexual Initiation	.199***

*** $p \leq .001$

Table 3. Pearson Correlations of Adolescent Reports

	Males									
	1	2	3	4	5	6	7	8	9	10
1. Contact with Sexual Content -										
2. Evaluation of Information in Media	.74***	-								
3. Sexual Preoccupation	.32***	.29***	-							
4. Sexual Guilt	-.16***	-.19***	-.08*	-						
5. Sexual Permissiveness	.23***	.26***	.21***	-.42***	-					
6. Egalitarian Gender Values	.06	.10**	.04	-.24***	.24***	-				
7. Pleasure Motive	.30***	.38***	.39***	-.31***	.31***	.16***	-			
8. Relationship Motive	.16***	.22***	.15***	-.13***	.15***	.10**	.55***	-		
9. Wants Knowledge	.21***	.24***	.14***	.09*	.00	-.02	.22***	.23***	-	
10. Sexual Initiation	.14***	.17***	.24***	-.29***	.23***	.01	.24***	.13***	-.05	-
11. Adolescent age	.15***	.19***	.26***	-.33***	.28***	.10***	.31***	.18***	-.13***	.35***

	Females									
	1	2	3	4	5	6	7	8	9	10
1. Sexual Media Contact	-									
2. Evaluation of Information in Media	.75***	-								
3. Sexual Preoccupation	.42***	.37***	-							
4. Sexual Guilt	-.36***	-.35***	-.40***	-						
5. Sexual Permissiveness	.33***	.33***	.35***	-.46***	-					
6. Egalitarian Gender Values	.16***	.13**	.18***	-.30***	.35***	-				
7. Pleasure Motive	.44***	.42***	.56***	-.49***	.38***	.20***	-			
8. Relationship Motive	.22***	.26***	.32***	-.31***	.26***	.19***	.51***	-		
9. Wants Knowledge	.14***	.14***	.09**	.14***	-.01	-.05	.17***	.20***	-	
10. Sexual Initiation	.27***	.21***	.42***	-.48***	.26***	.14***	.44***	.28***	-.05	-
11. Adolescent age	.32***	.28***	.34***	-.42***	.27***	.14***	.38***	.32***	-.12***	.48***

* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

tions revealed that this correlation was significant for females, but not for males. Female respondents showed a significantly stronger correlation, as compared to male participants ($z = 2.24, p = .01$).

Sexual initiation was significantly, positively related to sexual media contact for both the entire sample and for males and females separately. This correlation was stronger for females ($z = 3.09, p < .001$).

Predicting Media Consumption from Adolescent Sexual Characteristics

Based on the correlational results, we conducted separate hierarchical linear regressions for males and females to determine whether sexual media contact could be predicted from demographic variables (age), motivational variables (relationship-enhancement, pleasure-seeking, wanting knowledge about sex), sexual self-image variables (sexual preoccupation and sexual guilt), sexual attitudes (nontraditional gender values and sexual permissiveness), and sexual initiation (dummy coded). Summaries of the regressions are shown in steps 1 and 2 of Table 4.

Age showed significant effects in Step 1 of the regression, with older adolescents experiencing more sexual media contact for both sexes ($p < .001$). The effect of age was not significant for males and was reduced for females when sexual characteristics were entered in Step 2. Including sexual characteristics as predictors of sexual media contact resulted more variance explained for females ($R^2 = .314$) as compared to males ($R^2 = .166$). Pleasure-seeking showed a relatively strong positive relationship to

sexual media for males and was the strongest predictor of media contact for females when entered in Step 2 ($p < .001$). Relationship-enhancement motives showed significant negative effects for females ($p = .001$) and non-significant effects for males, and wanting knowledge about sex showed significant positive relationships for both genders ($p < .001$). Sexual preoccupation showed significant positive effects for both males and females ($p < .001$) and was the strongest predictor of sexual media contact for males. Sexual guilt showed a small but significant negative effect for females ($p = .013$) and no significant effect for males. Sexual permissiveness and traditional gender values held different relationships with media contact. While sexual permissiveness held significant, positive relationships with media contact for both males ($p = .015$) and females ($p < .001$), no significant effects for egalitarian gender values were present for either group. Sexual initiation was also not a significant predictor for either gender.

Mediation by Media Evaluations

To test whether evaluation of sexual information in the media mediates the relationship between adolescents' sexual characteristics and their media consumption, we used hierarchical regression, following the procedures of Baron and Kenny (1986) for testing mediating links. In this procedure, evidence of mediation requires that (a) that the predictor variables (i.e., sexual characteristics) are related to the hypothesized mediator (i.e., evaluation of information in media; see Table 5), (b) that the hypothesized mediator is correlated with the criterion variable (i.e., sexual

Table 4. Hierarchical Regression Analyses Predicting Sexual Media Contact from Sexual Characteristics and the Mediating Effects of Media Evaluation (Characteristics → Media Eval → Media Contact)

Variable	Contact with Sexual Content in Media					
	Males			Females		
	B	β	R ²	B	β	R ²
Step 1			.022**			.106***
Age	.076	.147***		.141	.326***	
Step 2			.166***			.314***
Age	.013	.025		.075	.174***	
Pleasure Motive	.075	.130**		.100	.215***	
Relationship Motive	-.009	-.018		-.050	-.111***	
Wants Knowledge	.045	.157***		.035	.144***	
Sexual Preoccupation	.172	.200***		.155	.203***	
Sexual Guilt	-.050	-.052		-.073	-.092*	
Sexual Permissiveness	.119	.093*		.144	.128***	
Egalitarian Gender Values	-.010	-.012		.018	.026	
Sexual Initiation	.104	.050		-.045	-.027	
Step 3			.539***			.608***
Age	-.013	-.025		.038	.087***	
Pleasure Motive	.008	.014		.040	.086**	
Relationship Motive	-.012	-.023		-.045	-.099***	
Wants Knowledge	.011	.040		.018	.073***	
Sexual Preoccupation	.099	.115***		.087	.114***	
Sexual Guilt	-.008	-.009		-.010	-.012	
Sexual Permissiveness	.042	.033		.044	.039	
Egalitarian Gender Values	-.028	-.032		.020	.028	
Sexual Initiation	.040	.019		.032	.020	
Evaluation of Information in Media	.503	.678***		.427	.632***	

* p ≤ .05 ** p ≤ .01 *** p ≤ .001

media consumption; see Table 3), (c) that the predictor variables (i.e., sexual characteristics) are related to the criterion variable (i.e., sexual media consumption; see Table 4), and (d) that the predictor no longer affects the criterion variable after the hypothesized mediator has been controlled (i.e., complete mediation) or that the link between predictor and criterion is reduced in absolute size (i.e., partial mediation; see step 3 of Table 4).

To fulfill the first criteria, we conducted linear regression analyses separately for males and females, with the

Table 5. Hierarchical Regression Analyses for the Prediction of Media Evaluation from Sexual Characteristics

Variable	Evaluation of Sexual Information in Media					
	Males			Females		
	B	β	R ²	B	β	R ²
Step 1			.040**			.082***
Age	.139	.200***	.183	.286***		
Step 2			.195***			.263***
Age	.051	.073		.087	.136***	
Pleasure Motive	.136	.175***	.140	.203***		
Relationship Motive	.004	.006		-.012	-.018	
Wants Knowledge	.068	.178***	.041	.113***		
Sexual Preoccupation	.148	.128***	.159	.141***		
Sexual Guilt	-.083	-.064		-.150	-.129***	
Sexual Permissiveness	.153	.089*		.232	.140***	
Egalitarian Gender Values	.029	.024		-.005	-.004	
Sexual Initiation	.129	.047		-.182	-.075*	

* p ≤ .05 ** p ≤ .01 *** p ≤ .001

purpose of linking the proposed predictors (sexual characteristics) to the proposed mediator (media evaluation) while controlling for gender. Criterion a was fulfilled for the variables pleasure-seeking, wanting knowledge, sexual preoccupation, and sexual permissiveness for males, and for all variables except for relationship motives and egalitarian gender values for females (see Table 5). Criterion b was also fulfilled for both males and females (see Table 3). Criterion c was fulfilled in the earlier regression analysis, predicting sexual media consumption from sexual characteristics for the variables of pleasure-seeking, wanting knowledge, sexual preoccupation, and sexual permissiveness for males, and for all variables except for egalitarian gender values and sexual initiation for females.

To test for Criterion d, we performed the same regression analysis as used to fulfill Criterion c, this time adding media evaluation as a separate, third step (see Tables 4 and 5). The addition of media evaluation in Step 3 led to increases in explained variance for both males (*F-change* (1, 769) = 622.39, $\Delta R^2 = .373$, $p < .001$) and females (*F-change* (1, 916) = 688.87, $\Delta R^2 = .294$, $p < .001$), and this variable emerged as the strongest predictor of sexual media consumption in Step 3 for both males and females. Further, the variables that had previously been shown to predict media contact for males were reduced to non-significance when media evaluation was entered. The only exception was sexual preoccupation, which remained significant but with a reduced effect (from $\beta = .200$ to $\beta = .115$). For females, the previously significant variables of sexual guilt and sexual permissiveness were reduced to non-signifi-

cance. All other previously significant variables remained so in Step 3 for females, but all with greatly reduced effects. As with males, females' sexual preoccupation maintained a relatively strong effect after media evaluation was entered in Step 3 (from $\beta = .203$ to $\beta = .114$).

Sources of Sexual Content and Evaluations of Informational Quality

To explore the relative rank-orderings of adolescents' exposure to and evaluations of different forms of media, and whether these rankings differed between males and females, we conducted several Friedman tests (see Table 6), all with significant results ($p < .001$). Relative to other forms of media, the total sample showed greater contact with sexual content in magazines, followed by television, books, radio, and the internet, respectively. Relative rank orders differed according to sex, with males showing higher rank orderings for television and the internet and females showing higher rank orderings than males for magazines, books, and radio. Relative to other media sources, the total sample gave more positive evaluations for informational content in magazines, followed by television, books, the internet, and radio, respectively. Once again, adolescents' gender qualified the rank orderings, with males showing higher rank orderings for television and the internet and females showing higher rank orderings for magazines and books. Both males and females gave the lowest level of positive evaluation to radio.

We employed two sets of MANOVAs, with sex as a between-subjects factor, to examine whether males and females reported significantly different levels of contact and positive evaluation for each media source, irrespective of differences between media types. As shown in Table 7,

significant gender differences existed for frequency of contact with all media sources except books. Males reported significantly more contact with the internet, radio, and television, while females reported more contact than males for magazines. With regard to the evaluation of informational content within each media source, all sources except radio showed significant sex differences (see Table 7). Females rated the informational quality of books and magazines more positively than did males, while males reported more positive evaluations than females for television and the internet.

DISCUSSION

In this study, we examined the sexual characteristics of adolescents that predict their contact with sex in the media, whether evaluations of media information mediated these relationships, and whether these relationships differed between genders. Further, we investigated the relative importance of each media source, in terms of frequency of contact and positive evaluations, and mean differences in these scores based on adolescents' gender. Given that correlation comparisons between males and females showed several significant discrepancies, we discuss findings from the regression analyses in terms of gender differences and similarities.

The second step of the regression analyses revealed that many of the characteristics examined were predictive of adolescents' contact with sexual content in the media, and that gender differences were often present. Older participants reported greater contact with media sexuality, supporting past suggestions (Brown et al., 2002; Steele 1999) that adolescents increasingly divide their attention between several types of media and may seek out, encounter, and attend to sexual content in many of these sources. According to our data, this may be more true for females, who showed stronger relationships between age and contact with sexual media in both the correlation and regression analyses. At the same time, the influence of age was largely mitigated by the motivational and attitudinal variables examined in this study, suggesting that individual differences play a larger role in adolescents' selection of sexual media than does their chronological age. Because of the cross-sectional nature of the data in this study, firm conclusions cannot be made regarding the influence of age versus the possible influence of time. Longitudinal research, particularly studies employing a cross-sequential design, may be able to disentangle the different effects of these respective variables.

We were also curious as to whether general motives or prior sexual behavior predicted adolescents' contact with sexual content, and the results of our analyses partially supported this possibility. Pleasure-seeking motives for sexual behavior were positively related to media consumption for both males and females, with females exhibiting a stronger relationship. Females' endorsements of relationship-enhancement sexual motives also showed a significant, negative relationship to media con-

Table 6. Friedman Analyses of Relative Rank-Orders for Contact and Evaluation of Source-Specific Media

<i>Frequency of Source-Specific Contact with Sexual Content</i>			
Media Source	Total Sample ¹	Males ²	Females ³
	Mean Rank	Mean Rank	Mean Rank
Books	3.16	3.03	3.27
Magazines	3.64	3.31	3.92
Radio	2.49	2.44	2.53
Television	3.28	3.52	3.08
Internet	2.43	2.71	2.19
<i>Source-Specific Evaluation of Sexual Information in Media</i>			
Media Source	Total Sample ⁴	Males ⁵	Females ⁶
	Mean Rank	Mean Rank	Mean Rank
Books	3.13	2.98	3.26
Magazines	3.48	3.17	3.75
Radio	2.38	2.36	2.40
Television	3.30	3.51	3.12
Internet	2.72	2.99	2.48

¹ $N = 2,045$, $\chi^2(4) = 1,446.01$, $p < .001$

² $N = 954$, $\chi^2(4) = 484.00$, $p < .001$

³ $N = 1,091$, $\chi^2(4) = 1,239.24$, $p < .001$

⁴ $N = 2,010$, $\chi^2(4) = 1,017.91$, $p < .001$

⁵ $N = 937$, $\chi^2(4) = 423.21$, $p < .001$

⁶ $N = 1,073$, $\chi^2(4) = 848.40$, $p < .001$

Table 7. Sex Differences in Scores of Source-Specific Media Contact and Evaluations (MANOVA)

	Frequency of Source-Specific Contact with Sexual Content					Source-Specific Evaluation of Sexual Information in Media						
	Wilke's λ	<i>df</i>	<i>F</i>	<i>partial</i> η^2	<i>M</i>	<i>SD</i>	Wilke's λ	<i>df</i>	<i>F</i>	<i>partial</i> η^2	<i>M</i>	<i>SD</i>
Multivariate tests												
Sex	.85	5, 2,039	71.41***	.149			.87	5, 2,004	58.66***	.128		
Between-Ss effects												
Books		1, 2,043	.85	-				1, 2,008	8.23**	.004		
Male					2.08	.03					2.75	.05
Female					2.04	.03					2.97	.05
Error			(1.12)							(2.76)		
Magazines		1, 2,043	19.97***	.010				1, 2,008	54.32***	.026		
Male					2.26	.04					2.94	.05
Female					2.49	.03					3.47	.05
Error			(1.26)							(2.62)		
Radio		1, 2,043	7.44**	.004				1, 2,008		1.41	-	
Male					1.71	.04					2.02	.05
Female					1.59	.03					1.95	.04
Error			(.87)							(1.89)		
Television		1, 2,043	101.43***	.047				1, 2,008	44.16***	.022		
Male					2.42	.04					3.27	.06
Female					1.93	.03					2.77	.05
Error			(1.20)							(2.91)		
Internet		1, 2,043	159.83***	.073				1, 2,008	94.02***	.045		
Male					1.94	.03					2.75	.06
Female					1.39	.03					2.01	.05
Error			(.976)							(2.95)		

Note. Statistics in parentheses represent mean squared error.

** $p < .01$ *** $p < .001$

tact, while these motives were not predictive for males. Past research has found both pleasure-seeking and relationship-enhancement motives to be endorsed significantly more by females, as compared to males (Browning et al., 2000). Though our results showed males to endorse pleasure-seeking motives more than females, and females to endorse relationship-enhancement motives more than males, both sexual motives showed stronger relations to media contact for females. Wanting more information about various sexual topics was also a positive predictor of media contact for both males and females, with males showing a slightly stronger relationship. This finding supports earlier contentions (e.g., Ward & Rivadeneyra, 1999) regarding the potential for learning motives to increase adolescents' contact with sexuality in the media, though the strengths of these relationships were moderate.

Adolescents' self-concepts are also proposed by Steele's (1999) Media Practice Model to determine media selection processes. Our measure of sexual preoccupation showed similarly strong, positive relationships with media contact for both males and females. It would make sense that more-preoccupied adolescents actively seek out this content to a greater extent than less-preoccupied youth. Alternatively, adolescents with more sexual preoccupation could be more likely to attend to such content when it is encountered, even though it is not actively sought. Our measure of media contact did not allow for an assessment of active versus passive encounters with sexual content (e.g., Greenfield, 2004), though this distinction could be an interesting line for further study. Males' reports of sex-

ual guilt held no predictive value for their contact with sexual content in media. A small but significant negative relationship between guilt and sexual media consumption was present for females. Thus, while we had predicted that negative evaluations about sexuality would decrease with self-reported media contact (Fisher et al., 1988; Gerrard et al., 1991; Gerrard & Reis, 1989), the measure of sexual guilt in this study lent only weak support to this idea, and only for female participants.

This expectation received stronger support with regard to adolescents' permissive attitudes toward premarital sex. Females and males both showed a significant, positive relationship between their sexual permissiveness and their contact with sexual content in media, and females showed a stronger relationship than males, supporting the findings of past research (Calvin et al., 1993; Strouse & Buerkel-Rothfuss, 1987). Egalitarian gender values were not predictive of contact with sexual media for either males or females. However, significant bivariate correlations between this measure and scores of media contact existed for females, implying that the bivariate correlation was overruled by other associations in the multivariate analyses, or disappeared when other variables were controlled. Further, though past studies have found a negative relationship between media consumption and egalitarian gender values (e.g., Ward & Rivadeneyra, 1999), our results showed these measures to be *positively* correlated. This could be a result of measuring *sexual* media consumption, as opposed to media consumption more generally. While the mainstream media, including sources such as magazines, music videos, and television programs, are

replete with sexual stereotypes (Olson & Douglas, 1997; Schlenker, Caron, & Halteman, 1998) that may influence adolescents' gender constructs, informational media sources may be more likely to promote egalitarian ideals. However, our data cannot suggest whether media exposure influences gender attitudes or whether youth with more egalitarian attitudes select sexual media more often. Studies that can better infer causal relationships are needed to disentangle these relationships. Additionally, the contradictory nature of this positive relationship, compared to past studies, may be a product of performing the research in a culture with stronger positive attitudes toward sexuality. However, without more research into the state of gender role depictions in Dutch media, and a comparison of these depictions with those of other cultures in which such connections have been found previously (such as the U.S.), cultural forces are only one possible explanation for this finding.

Sexual initiation was not found to predict contact with sexual media for either males or females, though positive correlations between media contact and initiation existed for both. This finding lends support to the previous results of Brown and Newcomer (1991) and Collins and colleagues (2004), who found that sexual media consumption predicted sexual initiation in longitudinal analyses, but that prior initiation did not predict subsequent contact with sexual media. Both sets of researchers concluded that a media influence, but not a media selection, effect was the most likely explanation for these results. Though such an analysis was beyond the scope of our study, the fact that no existing cross-cultural, longitudinal studies could be located regarding this issue suggests that the generalizability of such a claim should be further examined.

Our results also confirmed the expectation that critical evaluations of media information strongly mediated the connections between adolescents' characteristics and their contact with sex in the media. Despite adolescents' variable sexual motives, self-concepts, attitudes, and behaviors, what mattered the most was the extent to which they evaluated the mainstream media to be a good source of information about sexuality. From an applied perspective, this would suggest that parents or policymakers who are concerned with children's amount of sexual media consumption should initiate interventions to increase adolescents' critical evaluation of media sources. However, this suggestion is somewhat predicated upon the assumptions that contact with sexual media is harmful for adolescent sexual development and that teens benefit from reduced contact, neither of which were examined in this research. On the other hand, whether media are considered harmful or not, critical evaluation of their content by young people is generally desirable.

In a further exploration of this topic, we examined the relative importance of each media source for the total sample and for males and females and examined differences in males' and females' mean scores for each source. Though caution should be taken when analyzing and

interpreting single-item data, evident from these analyses was a general preference by females for printed media, such as books and magazines, both in the frequency of contact with these sources and the extent to which their informational content received positive evaluations. In contrast, males showed a greater general preference for television- and internet-based sources and information. Television, in particular, seemed to be an especially important avenue for males in the sample to come in contact with sexual content and receive information about sexuality. Websites received relatively low rank orderings for both frequency of contact and evaluations of informational content, especially compared to television, magazines, and books, but this was more true for females. These results are interesting, given that previous efforts to examine the role of critical media evaluations (e.g., Ward & Rivadeneyra, 1999) have typically not included measures related to the internet. However, considering that children's and adolescents' access to sexual content through cyberspace has raised concerns similar to, or even stronger than, that for other types of media (e.g., Greenfield, 2004), this is a finding worthy of continued investigation. Further, these results suggest that interventions to increase adolescents' critical evaluations of content should include discussions of internet use in conjunction with more conventional, thoroughly-addressed media sources such as magazines and television, especially when males are the targets of such programs.

Sex differences were apparent in the mediation analyses examining the role of adolescents' critical media evaluations. For males, the addition of media evaluations into the regression analysis reduced all other variables, except for sexual preoccupation, to non-significance. For females, most variables remained significant (except for sexual guilt and permissiveness), though the strength of the relationships were greatly reduced. Thus, our expectation that critical media evaluations would more fully mediate these relationships for males was supported. This finding is also in line with past research (e.g., Ward & Rivadeneyra, 1999) showing that when both media contact and media evaluations are considered, direct relationships between sexual characteristics and sexual media contact are only observed for females. Future research should be implemented to explain why among females these associations are stronger than among their male counterparts.

The findings of the mediation analyses could be a result of males reporting more overall contact with sexual media, as compared to females, and also being less critical of its content. However, there were no differences in the strength of the correlations between media contact and media evaluations when comparing males and females, either for the aggregated sources or specific source exposure-evaluation comparisons, implying that our findings are not merely an artifact of males' more frequent contact or positive evaluations. The mediating role of critical evaluations may also have been overinflated due to the strong equivalencies

between the media contact and evaluation measures. It is likely that a measure of media contact that did not concentrate as strongly upon attending to sexual content would have yielded weaker mediating relationships. However, the results suggest that critical evaluations can mediate the relationships between adolescents' identities and motives and their media selection more directly than what is implied by Steele's (1999) Media Practice Model, at least for males.

Though the size of the coefficient for media evaluation was similar between genders, this variable explained far more variance in consumption of sexual content for males than for females. Sexual characteristics, on the other hand, explained far more variance for females than for males. Thus, we are still in the dark about which characteristics of young males predict their consumption of sexual content in mainstream media. Considering that very few of sexual characteristics tested here accounted for unique variance in males' sexual media contact, perhaps this is a more social phenomenon, compared to that for females, in which case aspects of the home or peer environments should be further examined. Knowledge of media selection may also benefit from research on the differential roles of coincidental versus purposeful contact with sexuality in media for adolescent males and females.

Strengths of this study included the use of a large and representative sample of adolescents, most of which were younger than the university students that typically comprise samples for research on this topic. Additionally, conducting the research in the Netherlands allowed a consideration of whether the relationships typically reported in U.S. studies were equivalent in a more sexually liberal culture, and our focus upon contact with sexual content represents an examination of more specific relationships than those between general media consumption and adolescents' sexual characteristics. Finally, while most studies have focused on the effects *from* the media *upon* individuals' sexuality, we were interested in testing Steele's (1999) Media Practice contention that adolescents' sexual motives and identities influence adolescents' *selection* of media. This is a perspective that has received less attention in past studies, perhaps because of concerns in U.S. culture that exposure to sexuality can produce problematic development (Currier, 1981).

At the same time, some caveats are present in the research. The most obvious drawback is the correlational nature of the analyses and results, which negates the possibility of causal inference. Experimental and longitudinal projects which allow for causal interpretations have usually only been limited to the analyses of one or two sexual outcomes in relation to exposure to sexual media. Arguably, it is the Media Practice Model's (Steele, 1999) concentration on both media influence and selection that elevates it above previous theories, such as Social Learning (Bandura, 1994) and Cultivation (Gerbner et al., 1994), which have primarily emphasized media influence effects. However, far fewer studies have concentrated on media selection as a result of preexisting sexual character-

istics, which may be best addressed through longitudinal research. More attention should be devoted in the future to examining the characteristics, sexual or otherwise, that reliably predict adolescents' sexual media consumption over time.

Additionally, our measure of contact with sexual content did not allow for an assessment of the qualitative media content to which adolescents were attending. The Media Practice Model proposes that adolescents' media selection is dependent upon which sources and content are congruent with their own motives and identities. If this is so, then it would appear just as important to examine what is being communicated to adolescents about sexuality by their choices of media. For instance, are the sources turned to by adolescents primarily for erotic purposes, entertainment purposes, or are they intended to be educational? Are there situations in which particular motives yield differential outcomes, or particular evaluations? Merely making blanket statements about connections between sexual media and adolescents' own characteristics masks differences in the values, attitudes, and behaviors that are communicated through that media, and the informational quality of that content, which likely also motivate youth to select some sources over others and to evaluate one source more positively than another. Future research should focus upon both adolescents' frequency of encountering different media sources and the specific sexual content of that media, to clarify these connections. Finally, this study was by no means exhaustive of the sexual motives, self-image indices, attitudes, or behaviors that could potentially predict adolescents' contact with media. It is our hope, however, that this exploratory study will call greater attention to the need for quantitative research on the topic of adolescents' selection of, attention to, and evaluation of sexual content in the media.

This research extends knowledge about which characteristics of youth might predict their selection of and attention to sexuality in the mainstream media. Our findings suggest both critical evaluations of media content and adolescents' general sexual preoccupation to be important in this respect. The results also suggest that females' individual characteristics related to sexuality (motives, self-concepts, attitudes, and behaviors) are far more predictive of contact with sexual content in the media than are males', while males' consumption is more easily predicted by their evaluations of information about sexuality found in that media. If youth are both affected by and affect the media they consume (Steele, 1999), then further research should be devoted to the latter issue of selection, in order to acquire a more balanced perspective on the reciprocal influences between adolescent sexuality and their contact with sexual media.

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