A Meta-Analysis of the Published Research on the Effects of Pornography

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Abstract

A meta-analysis of 46 published studies was undertaken to determine the effects of pornography on sexual deviancy, sexual perpetration, attitudes regarding intimate relationships, and attitudes regarding the rape myth. Most of the studies were done in the United States (39; 85%) and ranged in date from 1962 to 1995, with 35% (n=16) published between 1990 and 1995, and 33% (n=15) between 1978 and 1983. A total sample size of 12,323 people comprised the present meta-analysis. Effect sizes (\underline{d}) were computed on each of the dependent variables for studies which were published in an academic journal, had a total sample size of 12 or greater, and included a contrast or comparison group. Average unweighted and weighted \underline{d} 's for sexual deviancy (.68 and .65), sexual perpetration (.67 and .46), intimate relationships (.83 and .40), and the rape myth (.74 and .64) provide clear evidence confirming the link between increased risk for negative development when exposed to pornography. These results suggest that the research in this area can move beyond the question of whether pornography has an influence on violence and family functioning.

Various potentially moderating variables such as gender, socioeconomic status (SES), number of incidents of exposure, relationship of person who introduced pornography to the participant, degree of explicitness, subject of pornography, pornographic medium, and definition of pornography were assessed for each of the studies. The results are discussed in terms of the quality of the pornography research available and the subsequent limitations inherent in the present meta-analysis.

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The issue of exposure to pornography has received a great deal of attention over the years. An overwhelming majority of adults in our society, both men and women, report having been exposed to very explicit sexual materials. In fact, Wilson and Abelson (1973) found that 84% of men and 69% of women reported exposure to one or more of pictorial or textual modes of pornography, with the majority of the group first being exposed to explicit materials before the age of 21 years. Coupled with more opportunities for people to access materials via a greater variety of media (e.g., magazines, television, video, world wide web), it is becoming increasingly important to investigate whether exposure to pornography has an effect on human behaviour. While the list of psychological sequelae that researchers have shown to be statistically common in persons exposed to pornography is immense, controversy and doubt are prevalent. Though the ongoing academic debate has relevant and significant socio-political implications, it is apparent that the issue of pornography has frequently been approached from a philosophical and moral stance rather than an empirical position.

The present meta-analytic investigation attempts to redirect the focus of the question of pornography's potential effects to an empirical platform. The aim is to determine whether exposure to pornographic stimuli over the lifespan has any effect on sexual deviancy, sexual offending, intimate relationships, and attitudes regarding the rape myth. The results are expected to provide information which may assist families, educators, mental health professionals, and social policy directors in making

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decisions consistent with promoting human health and social growth.

Method

Operational Definitions

Pornography is defined as any commercial product in the form of fictional drama designed to elicit or enhance sexual arousal (Mosher, 1988). Three specific forms of pornography were examined. Mild pornography consists of stimuli of nudes, persons engaging in petting, and nonviolent acts of sexual intercourse without genitalia visible; erotica or explicit pornography involves stimuli portraying consensual nonviolent sexual acts with genitalia visible; and violent pornography includes depictions of rape, degradation, sexual aggression, or sadism. Four outcome variables of <u>sexual deviancy</u> (i.e., non-normative sexual behaviours such as early age of first intercourse, excessive or ritualistic masturbation), <u>sexual perpetration</u> (i.e., aggressive, sexually hostile, and violent behaviours), attitudes regarding <u>intimate relationships</u> (i.e., perceptions of dominance, submission, courtship, sex role stereotyping, or viewing persons as sexual objects), and belief in the <u>rape myth</u> (i.e., women cause rape, should resist or prevent it, and rapists are normal) were coded for effect sizes. An effect size refers to the strength of a relationship or an estimate of the degree to which a phenomenon is present in a population (Vogt, 1993).

Sample of Studies

A total of 46 empirical investigations were included. The studies selected consisted of published literature ranging from 1962 to 1995. A computer-based literature search of PsychLIT, Educational Resources Information Center (ERIC) documents, and SOCIOFILE was conducted using <u>pornog</u>*, <u>data</u>, and <u>empirical</u> as the keywords.

Variables Examined and Planned Analyses

Cohen's \underline{d} was utilized for all of the effect size calculations. Nine potential moderators (i.e., age of exposure, gender of user, SES of user, number of exposure incidents, relation of person who introduced pornography to subject, degree of explicitness, subject, medium, and definition of pornography) were examined.

Results

The 46 research studies included a total of 12,323 persons (sample sizes ranged from 29 to 1,393), and 85% (n=39) were conducted in the United States versus 11% (n=5) conducted in Canada. Though studies from Denmark tend to be cited to support the contention that availability of pornography is related to lower rates of sexual offending, those located by the researchers did not meet the criteria for inclusion for the present meta-analysis. For example, in Kutchinsky's (1973) study, a comparison or contrast group was not included. Table 1 presents the average unweighted, weighted, and weighted corrected \underline{d} 's which were computed for each of the dependent variables, along with their corresponding 95% confidence intervals. A positive \underline{d} indicates exposure to pornography had negative outcomes, while a negative \underline{d} indicates positive consequences in relation to sexual deviancy, sexual perpetration, intimate relationships, and rape myth outcomes. As can be noted, no negative \underline{d} 's emerged in the current meta-analysis, thereby indicating the consistent negative effect of exposure to pornography in each of these four areas.

Corresponding raw counts and percentages in the form of a Binomial Effect Size Display (BESD) are also shown. This display demonstrates the practical importance of any effect indexed by a correlation coefficient (Rosenthal, 1994, 1995). The correlation (\underline{r}) refers to the difference in outcome rates between the experimental and control groups, whereby the column and row totals always sum to 100. In the analysis of sexual deviancy, correlations were computed for the average \underline{d} (\underline{r} =.32), average weighted \underline{d} (\underline{r} =.31), and average weighted corrected \underline{d} (\underline{r} =.37). The results indicate that there is a 32, 31, and 37 percent respective increase over the baseline in sexual deviancy outcome for persons reporting exposure to pornography. Similarly, in the analysis of sexual perpetration, correlations were computed for the average \underline{d} (\underline{r} =.32) and average weighted \underline{d} (\underline{r} =.22), indicating a 32 and 22 percent respective increase in sexual perpetration. For negative intimate relationships, correlations were computed for the average \underline{d} (\underline{r} the average \underline{d} (\underline{r} =.22) and average weighted \underline{d} (\underline{r} =.22).

=.39), average weighted \underline{d} (\underline{r} =.20), and average weighted corrected \underline{d} (\underline{r} =.24), revealing a 39, 20, and 24 percent respective increase in negative intimate relationships. Finally, in the analysis of attitudes toward the rape myth, correlations were computed for the average \underline{d} (\underline{r} =.35) and average weighted \underline{d} (\underline{r} =.31), indicating a 35 and 31 percent respective increase in believing in the rape myth for persons exposed to pornographic materials. Thus, it appears that the magnitude of the effect of pornography on each of the four outcomes examined is large.

An estimate of the Fail Safe N was computed to determine the number of studies required to refute the present findings. Forty-six studies would be required to refute the results for sexual deviancy, 142 for sexual perpetration, 49 for intimate relationships, and 47 to contradict the rape myth findings. Overall, 284 unreported studies averaging a null result would be required before the present meta-analytic findings could be reasonably ascribed to sampling bias. Accordingly, the results of the meta-analysis are stable and generalizable.

Analysis of Mediating Variables

A number of mediating variables were analyzed individually using univariate analyses, in order to examine the possibility of mediating influences of specific variables on pornography outcome or effect size. Of the total 108 analyses conducted, two moderators were found to be statistically significant: unweighted <u>d</u> of sexual deviancy and gender (<u>F</u>_(1,3) = 68.26, <u>p</u> = .004) and average weighted <u>d</u> of rape myth endorsement and definition of pornography ($\underline{F}_{(1,3)} = 18.45$, $\underline{p} = .023$). Although there may be a gender difference on sexual deviancy outcome as a result of exposure to pornography, and people may be more likely to ascribe to the rape myth when exposed to one type of pornography over another (i.e., mild, erotica, violent), these results may well be a statistical artifact. As the total number of ANOVA's executed were large, the risk of Type I errors is increased substantially (i.e., the Bonferroni Inequality, .05 H 108 = 5.4; Violato & Russell, 1994). In 108 statistical tests when alpha is set at .05, then, it is probable that six of the tests will emerge significant by chance alone. It is, therefore, prudent to regard these two "significant" results as spurious. The most salient feature of the results summarized in Table 2, is that there are no generally significant effects of the variables on d across all four domains. Still, although none of these identified variables appear to mediate the effect of exposure to pornography on sexual deviancy, sexual perpetration, intimate relationships, and rape myth outcome, it is recommended that these findings be interpreted with caution. The nonsignificant results may be due more to the lack of information documented in the original studies than to the fact that the variables do not really moderate the relationship between pornography and the specific outcomes examined.

Discussion

Consistent with previous meta-analyses (Allen, D'Alessio, & Brezgel, 1995) and single studies (Baron & Straus, 1987; Fisher & Barak, 1991; Garcia, 1986; Gray, 1982; Gunther, 1995; Hui, 1986; Lottes, Weinberg, & Weller, 1993), the results of the present meta-analysis suggest that exposure to pornography produces a variety of substantial negative outcomes. Using the social learning theory and imitation model, it may be argued that themes of aggression, impulse gratification, sexual flexibility and gymnastics, and objectification in pornography may reinforce and/or justify similar attitudes and behaviours in everyday human-life contacts. Persons viewing pornographic materials may believe that the way the characters perform sexually is a "normal" and appropriate portrayal of reality. Armed with these expectations, they may engage in activities which are not socially acceptable or even desirable at the individual level. While likely not a solitary influence, it appears that exposure to pornography is one important factor which contributes directly to the development of sexually dysfunctional attitudes and behaviours.

The results are clear and consistent; exposure to pornographic material puts one at increased risk for developing sexually deviant tendencies, committing sexual offenses, experiencing difficulties in one's intimate relationships, and accepting the rape myth. In order to promote a healthy and stable society, it is time that we attend to the culmination of sound empirical research.

Pornography Outcon	ne Measur	res and Effect S	Sizes									
Outcome	<u># of</u> <u>Studies</u>	<u>Total</u> <u>N</u>	<u>Average</u> <u>Unweighted</u>	<u>S.D.</u>	<u>C.I. (95%)</u>	Wei	erage ghted	<u>S.D.</u>	<u>C.I. (95%)</u>	Average Weighted	<u>S.D.</u>	<u>C.I. (95%)</u>
			<u>d</u>			<u>d</u>				Corrected d		
Sexual Deviancy	11	4,450	.68	.27	.41 to .95		.65	.03	.62 to .68	.80	.04	.72 to .87
Sexual Perpetration	34	3,760	.67	.56	.11 to 1.23		.46	.03	.42 to .49	N/A	N/A	N/A
Intimate Relations	9	2,170	.83	.76	.07 to 1.60		.40	.05	.36 to .45	.50	.05	.40 to .61
Rape Myth	10	1,943	.74	.87	13 to 1.62		.64	.05	.59 to .69	N/A	N/A	N/A
Outcome		<u> </u>			BESD				Perc			
Sexual Deviancy		46.21	Avera	age <u>d</u> = .3	2	66.01	33.98					
			Av. V	Av. Wghtd. $\underline{d} = .3$		65.47	34.52			31		
			Av.W	Av.Wghtd.Corr. $\underline{d} =$		68.47	31.52			37		
Sexual Perpetration		141.69	Average $\underline{d} = .3$		2	65.91	34.08			32		
			Av. V	Vghtd. <u>d</u> =	= .22	61.14	38.85			22		
Intimate Relationships		48.81	Average $\underline{d} = .3$		9	69.26	30.73			39		
			Av. V	Vghtd. <u>d</u> =	= .20	59.85	40.14		20			
			Av.W	ghtd.Cor	r. <u>d</u> = .24	62.15	37.84			24		
Rape Myth	h	47.14	Avera	Average $\underline{d} = .35$		67.40	32.59			35		
	_		Av. V	Vghtd. <u>d</u> =	= .31	65.27	34.72			31		

Table 4.1Pornography Outcome Measures and Effect Sizes

*N/A results were obtained since it was not possible to correct for attenuation because reliabilities were not reported in the original studies.

Table 4.2
Potential Effect of Moderating Variables on Average Unweighted <u>d</u> Outcomes
Part A: Unweighted d

Part A: Unweighted <u>d</u>	C.	arual Davia		Carr	101 Down of the	tion	Intima	to Delation	hing		Domo	Math
<u>Outcome</u> Variable	<u>df</u>	exual Devia <u>F</u>		<u>df</u>	<u>al Perpetra</u> <u>F</u>		<u>Inuma</u> <u>df</u>	te Relations <u>F</u>		<u>df</u>	<u>Kape</u>	<u>Myth</u>
Age of Exposure	<u>ur</u> 2, 8	.71	<u>р</u> .52	<u>ur</u> 1, 31	.63	<u>р</u> .43	<u>ur</u> 	<u>r</u> 	<u>p</u> 	<u>ur</u> 2, 7	.42	<u>р</u> .68
Gender of Porno. User	2, 8	1.31	.32	2, 30	.31	.74	2, 6	1.46	.30	2, 7	.38	.00
# Exposures	2, 0 1, 9	1.59	.24	2, 30	.31	.74	1, 7	.43	.50	1, 8	.50	.70
Degree of Explicitness	2, 8	.05	.95	2, 30	1.07	.36				1, 8	.04	.84
Pornographic Medium	2, 8	.05	.95	1, 31	.04	.85						
Definition of Pornography	1, 8	.94	.36	2, 29	.13	.88	2, 5	.31	.75	2, 5	.20	.83
Part B: Weighted <u>d</u>		Sovu	al Devian		Soruel	Perpetratio		Intimat	e Relations	hing	Dor	e Myth
Outcome Variable	<u>df</u>	<u>F</u>	<u>p</u>	<u>df</u>	<u> </u>	<u>p</u>	<u>df</u>	<u> </u>	<u>p</u>	<u>df</u>	<u>Ка</u> <u></u>	<u>p</u>
Age of Exposure	2, 8	.45	.65	1, 31	.75	.40				2,7	.45	.65
Gender of Porno. User	2, 8	.13	.88	2, 30	.37	.70	2,6	.22	.81	2, 7	.44	.66
# Exposures	1, 9	.98	.35	2, 30	3.12	.06	1, 7	.14	.72	1,8	.66	.44
Degree of Explicitness	2,8	.34	.72	2, 29	.94	.40				1, 8	1.05	.33
Pornographic Medium	2, 8	.47	.64	1, 31	.64	.43						
Definition of Pornography	1, 8	5.01	.06	2, 29	.15	.86	2, 5	.40	.69	2, 5	1.05	.42

*Note: 108 ANOVA's were conducted on unweighted, av. weighted, & av. weighted corrected <u>d</u>'s (not reported here) with a range of 1 to 3 & range of 2 to 3 (not reported here).

Dashes indicate results of fewer than two non-empty groups when analysed.

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