

# The If, How and What of Media Exposure and Disordered Eating: A Literature Review

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# MEDIA EXPOSURE AND EATING DISORDERS

## ABSTRACT

This literature review examines the relationship between media exposure and eating disorders by presenting and critiquing 6 articles published between 1994 and 2014. It presents early research that examines how psychological byproducts of exposure to popular media, such as internalization of thin-body ideals, are predictive of disordered eating behavior. Then it examines later research into the specific types and genres of media that are most strongly related to disordered eating and their variance across genders. Finally it touches upon the impact of the modern social media paradigm promotes body dissatisfaction and other psychological traits that have been directly or indirectly linked to the development of eating disorders.

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The prevalence of eating disorders has double between 1995 and 2005, according to statistics from the American Journal of Psychiatry. Statistics published by The Renfrew Center Foundation for Eating Disorders, in the United States alone up to 24 million people across all ages and genders suffer from eating disorders

The most prevalent manifestations of disordered eating are Anorexia and Bulimia. Anorexia is characterized by intentionally denying the body, the nutrition it needs to maintain a weight over the minimal norm for the particular age and height. Anorexia is usually accompanied by an extreme fear of gaining weight and body image dissatisfaction. Bulimia is characterized by excessive intake of food followed by adoption of drastic measures, such as intentional vomiting and laxative overuse, to compensate for it. Both Anorexia and Bulimia are very serious conditions and can in fact be fatal.

According to the American Journal of Psychiatry, eating disorders have emerged as one of the most dangerous psychological conditions by having the highest mortality rate of any mental illness. Crude estimates of mortality rates are 4% for anorexia and 3.9% for bulimia (Crow, S.J., Peterson, C.B., Swanson, S.A., Raymond, N.C., Specker, S., Eckert, E.D., Mitchell, J.E., 2009).

The prevalence of eating disorders has coincided with the development and propagation of a sociocultural norm of acceptable body image. One that is slender and petit for females and lean and muscular for males. During the 80s the majority of Playboy magazine centerfolds and pageant contestants weighed significantly below the expected weight for their physique (Wiseman, Gray, Mosimann and Ahrens, 1990). During the same time period one of the highest reported prevalence of eating disorders occurred (Boskind-White & White, 1983). As a conduit for bringing these

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body ideals to the masses, media has had a significant hand in the establishment of thin body ideal in society and therefore it is only logical to explore if a relationship exists between media consumption and the incidence of eating disorders.

This literature review describes some of the research that has explored the relationship between media exposure and eating disorders. It attempts to compile literature that provides answers to 3 questions: (i) Does a relationship exist between eating disorders and media consumption? (ii) The behavioral and psychological underpinnings of this relationship? (iii) How do different forms of media produce this relationship?

Even though studies in the 90s and the earlier 21<sup>st</sup> century have examined this relationship and have reported significant and semi-significant relationships between media consumption and disordered eating the material is still far from comprehensive. Firstly there is yet to be a prospective study published to establish a concrete causal relation between media consumption and eating disorder and secondly there is a dearth of material relating to the incidence of eating disorder in males compared to the material pertaining to females. By reviewing the literature it is hoped that the more research is done to better understand the phenomenon and produce more concrete results that are more inclusive of males.

### **METHODS**

The articles reviewed below have been obtained from the online journal PsychINFO by searching for keywords “media” and “eating disorders”.

### **RESULTS**

#### **PAPER 1**

One of the earliest studies to examine the relationship between media consumption and the possible mediators in this relationship is one by Stice, Schupak-

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Neuberg, Shaw and Stein, titled "*Relation of Media Exposure to Eating Disorder Symptomatology: An Examination of Mediating Mechanisms*" (1994).

The study was cross sectional and the subjects of the study were 238 female undergrad students enrolled in psychology and sociology classes who were given a questionnaire to elicit their media exposure, gender-role endorsement, ideal-body stereotype internalization, body dissatisfaction and eating disorder symptomatology.

Media exposure was determined by obtaining the number of magazines that they had read over the past month together with the number of hours of TV shows they had watched over the past month. Stereotypes pertaining to the appropriate social roles of men and women were determined using the Attitudes Towards Women scale and Attitudes Toward the Male Role scale. A 20-point scale constructed by the authors measured subscription to the ideal female body stereotype. The scale had a Cronbach's alpha of 0.86. Body dissatisfaction was determined by the body dissatisfaction subscale of the Eating Disorders Inventory (EDI) and eating disorder symptomatology was determined using Eating Attitudes Test (EAT).

Media exposure had significant direct effects on eating disorder symptomatology and gender role endorsement. A path was observed as gender role endorsement was related to ideal body stereotype internalization which was predictive of body dissatisfaction which itself was significantly related to disordered eating. This path depicts a possible mediating mechanism for the indirect relation between media exposure and eating disorders.

The authors conclude that a significant direct relationship exists between media exposure and symptoms of eating disorders and that subscription to sociocultural norms mediates this relationship.

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This study derives most of its value from the fact that it is one of the earliest studies to report a relation between media exposure and eating disorder symptoms and introduce an indirect path of mediators that exists between media exposure and eating disorder symptoms. In this capacity it acts as a stimulus for future research in this direction.

The study is by no means comprehensive and the authors aptly identify most of its shortcomings. However the study consists entirely of a female sample and hence has no inferential value for the other gender. The authors do not identify this limitation anywhere in the paper so it appears as if they either consider these results to extend to males as well, which is quite unreasonable assumption or they consider males to be immune to the thin body ideal. Granted that indeed the incidence of eating disorders in males is very low as is the social pressure to achieve the ideal body but nonetheless it should not have been ignored. The representativeness of the study is also hurt by the fact that the subjects were exclusively of a very narrow age and social group, which limits the study's results from extending to other demographic regions of society.

### PAPER 2

Harrison and Cantor in their cross sectional study "*The Relationship Between Media Consumption and Eating Disorders*" (1997) explore the relationship of media exposure and eating disorder symptomatology in light of social learning theory. They use the concepts of prevalence and incentives to model the situation. Prevalence represents the abundance of material promoting thin-body ideals and incentives are the perceived social rewards that would accrue from attaining these ideals.

The study participants were 232 female and 190 male undergraduate students with a mean age of 20. Using questionnaires the all the subjects' media exposure,

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selective exposure based on interest, body dissatisfaction, drive for thinness, perfectionism, ineffectiveness and extent of disordered eating were measured. Male subjects' endorsement of thinness and dieting and endorsement of thinness for women were also measured.

Media exposure was measured by the number of hours of TV watched per week and the number of issues of popular magazines read each month. Selective interest was determined by gauging the participants' interest in new TV shows and magazines that covered certain genres. The extent of eating disorder was measured using the EAT for women, for men only the non-gender specific sections of the EAT were used. A separate section was added to the EAT to measure anorexia. Body dissatisfaction, drive for thinness, perfectionism, ineffectiveness and bulimia were measured using EDI. Custom scales were developed by the authors to measure male subjects' endorsement of thinness and dieting, and endorsement of thinness for women.

Only magazine reading was a significant unique predictor of disordered eating behavior while only overall TV viewing was a unique significant predictor of body dissatisfaction. EAT scores were most strongly correlated to readership of fitness magazines irrespective of preexisting interests and preferences of the subjects while body dissatisfaction was most positively related to fashion magazines. Drive for thinness was only related to overall magazine reading. Only overall magazine reading was predictive of both bulimia and anorexia, with anorexic behavior possibly being linked more to specific magazine types. Only watching shows depicting thin people related to endorsement of personal thinness in men, regardless of personal interests, while reading fitness magazines was indicative of preference of thinness in women by men.

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The authors conclude that media that depicts or promotes thinness seems to have an effect on eating disorder symptoms. They believe that the results were consistent with social learning theory since the relationship between drive for thinness and the magazines that provide fitness instructions was most consistent while the effect of television was undermined by the advertisements promoting fatty foods.

To its credit this study adopts a more formal approach than those before it by clearly defining a framework of hypotheses and using it to guide the direction of the results. Moreover, it includes a sizable representation of male subjects, which again is not something one would find so easily in earlier works. With that said the authors admit that the measuring instruments were majorly focused towards females so comprehensive data could not be collected for the male participants.

As far as generalizability goes, there are some questions to be raised. Only 15.1% (n=35) of the women exceed the EAT threshold for disordered eating. All the inferences and relations derived thereof are based upon measurements from 35 people. Though regressions may attribute significant prediction power to the results but from a statistical standpoint the sample size is simply too small for the results to have significant generalizability.

### PAPER 3

The idea that magazines and television appeal differently to the human psyche and hence they relate slightly differently to the incidence of eating disorders is explored further by Tiggemann in yet another cross sectional study, *“Media Exposure, Body Dissatisfaction and Disordered Eating: Television and magazines are not the Same!”* (2003).

The subjects were 104 female undergraduate students having an average age of 20 years. Using a questionnaire based approach measurements of media exposure,



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body dissatisfaction, disordered eating symptoms, awareness and internalization of body shape ideals, self esteem and body mass index (BMI) were obtained.

Media exposure was measured as the number of different magazines read and the total amount of time spent reading fashion magazines, and the total number of hours of TV watched and the time spent watching soap operas and music videos. Body dissatisfaction was determined using the discrepancy between the current figure and the ideal figure using the Figure Rating Scale of Fallon and Rozin. Disordered eating was measured using the EDI and the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ) was used to determine the awareness and internalization of body shape ideals. Self-esteem was measured using the Bachman and O'Malley adaptation of the Rosenberg Self-Esteem Scale.

Both magazine and television exposure was related to body dissatisfaction but not to eating disorders. Television was observed to directly relate to body dissatisfaction while in the case of magazines internalization of thin body ideals was observed to be a mediator. For women with lower self-esteem this correlation seemed to be stronger than for those with higher self-esteem. Disordered eating acted as a mediator between both media and disordered eating. Differences emerge as magazine exposure was related to internalization whereas television was related, albeit negatively, to awareness of thin body standards. A direct relation was also observed between internalization and disordered eating, the magnitude of which correlated positively with different BMI categories.

The author concludes that since television is a more passive form of exposure to thin body ideals so television viewers are less aware to the thin body ideals compared to magazine reader who are exposed to explicit depiction and promotion of

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the ideal body in fitness magazines. This is believed to account for the stronger relationship between magazine readership and body dissatisfaction.

This study contributes by explicitly comparing to different types of media and reasons about the nature of the messages that they deliver to provide a more precise explanation for the relationship between media consumption and eating disorders. It also include possible moderators such as BMI and self esteem which have been shown to significantly impact the susceptibility to body dissatisfaction of an individual. The sample size is not very large and is restricted to a very narrow demographic so the generalizability of the results is uncertain. Furthermore the number of participants that had eating disorders, or symptoms of eating disorders such as body dissatisfactions has not been disclosed. So in this small sample it is entirely possible that a very small fraction of the people would be affected and this would then raise questions about the statistic validity of the results. Moreover self esteem is very volatile measure, in that a recent even may have inflated the participant's self esteem levels about their actual level or even vice versa as a result the inferences drawn from the relationship between self-esteem and body dissatisfaction may come under scrutiny.

### PAPER 4

Rodgers, Franko, Brunet, Herbert and Bui in their study titled "*Disordered Eating Following Exposure to Television and Internet Coverage of the March 2011 Japan Earthquake*" (2012), prospectively explore the relationship between exposure to distressing news content and disordered eating.

The subjects initially consisted of a pool of 698 participants who filled out a survey during the first week after the disaster. A follow-up survey was conducted 2 months later which was filled out by 113 of the original subject pool, of which 31

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were males and 82 were females, 105 were Caucasians, 89 were employed the rest were either retired, students or unemployed. The average BMI of the participants was 23.12 (SD: 1.46). The survey elicited their disaster related media consumption, peritraumatic reactions and levels of eating disorder.

Media consumption was determined by the average amount of time spent either watching TV or accessing (or contributing to) online resources related to the disaster. Peritraumatic reactions were measured using the peritraumatic distress inventory and Peritraumatic Dissociative Experiences Questionnaire. Extent of disordered eating was determined using the EAT-26.

Disordered eating score correlated with the exposure to disaster related media (both TV and internet) as well as to peritraumatic distress and dissociation. The relationship did not hold specifically for the bulimia subscale. Regressions revealed that media exposure was a significant predictor of disordered eating as a whole and also more specifically of dieting and anorexic behaviors, but not of bulimic behaviors.

The authors conclude that exposure to media covering the disaster was associated to disordered eating with TV content consumption presenting the stronger association across all aspects of eating disorders except dieting to which internet content exposure showed a stronger relationship. The authors believe that the stronger correlation between TV and eating disorders may be because consuming content on TV deprives the individual of the sense of control that using the Internet provides and disordered eating is a manifestation of the individual's struggle to regain control.

This study expands the scope of the literature exploring the relationship between media and eating disorders by taking up a genre of media that was not explored in earlier research. There were several shortcomings of this study, including the fact that only one-sixth of the initial participants provided the follow up. However

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most of these have been acknowledged and addressed by the authors. An obvious flaw that appears is that although the authors claim that this is a prospective study but the authors elicited the participants' responses only twice and with a lengthy gap within the intervals. This prevents the observation of any temporal fluctuations in eating disorder symptomatology that are required to form causal inferences about the their relationship with media exposure. Furthermore the authors do not distinguish between the data obtained at these two time periods and have appeared to abandoned the prospective approach midway through the paper.

### PAPER 5

Authors Mabe A., Forney K. and Keel P. in their study "*Do You "Like" My Photo? Facebook Use Maintains Eating Disorder Risk*" (2014) try to replicate the cross sectional association observed in previous studies between Facebook use and disordered eating and extend the results by experimentally observing the temporal changes to eating disorder risk in individuals following Facebook use.

Two studies were conducted. The first study was cross sectional and it measured the disordered eating attitudes (using EAT-26) and the Facebook usage of 960 female undergraduate students.

The second study was experimental and included 84 women, encompassing a wide range of scores on EAT-26, from the first study. The participants' momentary "preoccupation with weight", "preoccupation with shape" and "urge to exercise" were measured using Visual Analogue Scales (VASs) and State Trait Anxiety Inventory (STAI), disordered eating attitudes were measured using EAT-26 and Facebook usage was determined using a custom survey developed by the authors.

The participants filled out the VAS and STAI and then were placed in two groups, the experimental and the control, using stratified randomization. Participants

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in the experimental group were asked to use Facebook as they naturally would while the control group was instructed to read and view material about a neutral animal. After the 20 minutes all the participants again filled a VAS, STAI, a Facebook usage questionnaire and EAT-26.

EAT score were significantly associated with several individual items on the Facebook survey. Participants with greater disordered eating assigned more importance to receiving comments and likes on their statuses and comments on their photos. They also reported actively un-tagging their photos very frequently. Overall, those with higher eating disorder had higher Facebook scores.

Participants in the control group reported a greater decline in preoccupation with weight and shape than those in the experimental group. The control group also reported a significant decrease in anxiety while the experimental group reported a slight increase in anxiety.

The authors conclude that they successfully replicated the association between Facebook use and disordered eating as identified in earlier research and also found evidence of Facebook contributing to the maintenance of eating disorder risk factors such as preoccupation with weight and shape and state anxiety.

This study derives its significance from the fact that it was focused on modern media, specifically social media, which has become ever so pervasive today. Due to this characteristic it's findings are more relevant to and representative of the current times. Moreover it adopts a formal hypothesis based approach to really narrow down on how Facebook use affects eating disorder symptoms instead of making broad observations simply about the existence of the effects.

The authors take care to highlight the multiple shortcomings and limitations of the study. They acknowledge that the relationship between Facebook use was not

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statistically very significant due to the small sample size in the second study.

However they fail to acknowledge how would this effect the generalizability of the study or even validity. Since the sample size itself was small and it comprised of participants of a range of EAT scores so each level of EAT score would have a very small representation in the sample and hence any conclusion derived thereof would have to be viewed with a slight suspicion with respect to their validity and generalizability. Moreover the fact that the participant pool belonged to a very narrow demographic range not to mention the exclusion of males certainly undermines the weight of their results.

### PAPER 6

Calado, Lameiras, Sepulveda, Rodriguez and Carrera in their research article titled "*The Mass Media Exposure and Disordered Eating Behaviors in Spanish Secondary Students*" (2010) aim to explore the association between exposure to mass media and eating disorders in a nationwide survey conducted across Spain in 2004-2005.

The subjects were 1115 students of which 547 were males and 568 were females. The authors obtained, through a survey questionnaire, the subjects' television and magazine viewing frequency, viewing and reading frequency of different genres of content on TV and in magazines, disordered eating using EAT-26, body dissatisfaction using the body dissatisfaction section of the EDI, social comparison, internalization of thin ideal on the Physical Appearance Comparison Scale and self-esteem using Rosenberg's Self-Esteem Scale.

Overall male students showed lower levels of disordered eating than female students. Male students with eating disorders were more frequently exposed to news programs and game shows on TV and they read hobby and information magazines

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more frequently than males without eating disorders. Females with eating disorders viewed more media content related to sport, music videos, dieting, fitness and, beauty and fashion. For both genders disordered eating correlated with higher scores for body dissatisfaction, awareness and internalization of thin ideal and physical appearance comparison, and lower scores for self-esteem.

The authors concluded that total media exposure was related to disordered eating in adolescents. Exposure to the sports section was also related to the incidence of eating disorders, which, in the authors' opinion, may be due to the recent trends of objectification of the body. A possible explanation provided by the authors for higher incidence of eating disorders in females is that the physical changes their bodies undergo during this age may take them away from the thin ideals presented on the media.

To its credit this study appears to be one of the most comprehensive ones to have examined the relationship between media exposure and eating disorders. The equal representation of both genders provides significant insight into the different types of media exposure that males and females are receptive to. Moreover the large sample size allows more statistically significant relationships to be observed between the covariates.

With that said this study seems to be somewhat outdated. Indeed social media hadn't caught up much in adolescents, especially those from outside of the United States, however by the time this research was published the pervasiveness of social media had risen to an unprecedented level and would only continue to increase. The forms of media, such as magazines and even TV, that are considered in the study had lost much of their significance in the lives of the adolescents, magazines even more so than television.

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### CONCLUSION

The research examined above provides a multi-dimensional view of the relationship between media exposure and eating disorders. By examining this literature this paper attempted to answer the following questions: (i) Does a relationship exist between eating disorders and media consumption? (ii) The behavioral and psychological underpinnings of this relationship? (iii) How do different forms of media produce this relationship? These questions serve to structure and focus the breadth of information this research provides.

The answer to the first question lies in Stice et.al (1994), which is one of the earliest pieces of research to find a relationship between media exposure and eating disorder symptomatology. Moreover it goes onto hypothesize and later evidence the presence of certain psychological factors that mediate this relationship. In doing so not only does it present a direct relationship between eating disorders females and media consumption but it also provides inspiration and direction for future research.

The second question is addressed through the work of Harrison et.al(1997), Calado et.al (2003) and Rodgers et.al (2012) which explores the different facets of the relationship between eating disorders and media exposure. Harrison et.al (1997) build on Stice et.al (1994) through a more structured approach attempt to extend and validate the results of past research in light of social learning theory. This study provides valuable insight into the behavioral and psychological processes that mediate the relationship between media consumption and eating disorders by exploring how different genres activate certain processes and behaviors that either directly or indirectly lead to eating disorders. Calado et.al (2010) used a somewhat similar method, excepting the addition of self-esteem and the exclusion of a separate scale for males, in an independent study on a large sample of Spanish secondary students.



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Their results were very similar to those of Harrison et.al however the true value of this study stems from the fact that it validates the results of past research on a group of subjects that is, demographically, very different than the one used earlier. One commonality that is evident in the research discussed above is that it focuses mainly on body image perceptions as mediating the relationship between media consumption and eating disorders. Rodgers et.al (2012) provides insight into consumption of a very different genre of media. This study shows that exposure to unpleasant or distressing content produces similar effects to those observed in earlier research pertaining to body image ideals. Some implications of this study also lend to the answer to the third question posed above however they are relevant to the question at hand as well such as the observation that television viewing incites greater disordered eating because it deprives the individual of the sense of control that the Internet doesn't.

The third question is very relevant to the future implications of the relationship between eating disorders and media exposure as media is evolving and people are exposed to it in a multitude of dimensions, which necessitates an understanding of how different forms of media affect the aforementioned relationship. Tiggemann (2003) addresses this question rather directly by comparing the impact of television and magazine on the relationship between disordered eating and media exposure do not equate. She proposes that television and magazines involve different mechanisms for the transfer of information to the viewer. Her observations regarding the levels of internalization of body ideals coincide with those of Harrison et.al (1997). Though informative these papers are dealing with the past, magazines and, to an extent even, televisions are on their way out while social media becomes ever so prevalent. Mabe et.al (2014) specifically addresses Facebook use. Her observations

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that Facebook use maintains or even increases weight concerns and anxiety is very valuable as a Segway to bring this academic conversation into the modern world.

The literature reviewed above as whole examined the issue at hand, the relationship between media exposure and eating disorders, from a variety of perspectives and in doing so provided some invaluable insights into this issue. With that said there are some very obvious flaws in this research, some of which have indeed been acknowledged by the authors, but they undermine the overall strength of the literature nonetheless. The absence of an effective and structured prospective study is certainly felt since a significant causal relation has yet to be determined between media exposure and eating disorders. This relation is of utmost importance as it stands to provide insight into the possible course of action that may be adopted to counter the incidence of eating disorders. The subject sample in many of these studies appears inadequate, either in number or in age, gender, ethnic and social diversity. In fact the majority of the literature is focused on females, this may partly be due to the lower incidence of eating disorders in males and partly because of the lack of instruments geared towards males.

The limitations and shortcomings mentioned above should act as recommendations for future research. Particular attention and resources should be diverted towards performing a solid longitudinal study on the issue at hand and while doing so care must be taken to be inclusive of males by ensuring sufficient representation and also developing tools and instruments to analyze the relationship between eating disorders and media exposure in them. Eating disorders pose a very grave threat to millions around the world and to combat its incidence a thorough understanding of the illness itself and factors that contribute to it is of utmost importance.

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