

**ABSTRACT:** The objective of this study is to determine whether or not a relationship exists between eating disordered attitudes, specifically anorexia nervosa, and several factors, including attention from the opposite sex, attraction to the opposite sex, and attitudes toward marriage. I will compare 200 non-disordered individuals' and 100 diagnosed anorexics' scores on the Eating Attitudes Test-40 (EAT-40), to the same sample population's scores on a comprehensive questionnaire meant to determine attitudes toward marriage and attention from the opposite sex. I expect that the results will show a relationship between scores on the EAT-40 and scores on the questionnaire. With these results I hope to lend credence to the evolutionary explanation for anorexia nervosa and its symptoms by adding to the evidence that already exists to support this hypothesis, specifically, that anorexia nervosa resulted from an advantageous strategy for suppressing reproduction by staving off attention from the opposite sex.

**INTRODUCTION:** Anorexia has long been a mystery to researchers and clinicians alike. Where did this mysterious disease come from and why is it here? The answers to such questions are never easy. One theory stemming from evolutionary psychology hypothesizes that anorexia may be the result of an adaptation that allowed women to suppress fertility and menstruation when conditions were not favorable for children's survival. While this is empirically difficult to test in today's environment because of the many confounding factors involved (such as the media's influence on body image), we can search for correlations between such severe restrictions of diet, anorexia, bulimia, and other factors such as attention from the opposite sex, attraction to the opposite sex, and marriage.

This idea, in fact, has been presented by more than one evolutionary psychologist. Naomi Wolf, in her book *The Beauty Myth*, says that “Anorexia is spreading because it works...it...protects her (the woman) from street harassment and sexual coercion; construction workers leave walking skeletons alone.” (Wolf) This same thing could possibly be said for males, since it isn’t likely that women will seek attention from a “walking skeleton” of a man. Dr. Charles Crawford, a professor at Simon Fraser University in British Columbia has speculated the relationship between anorexia and various other factors, such as male attention (Crawford, 1988). These hypotheses, however, have so far been implicated mainly for women. Anorexia has also been recorded and studied in men, (The Harvard Medical School Mental Health Letter, 1988) a fact that should also not be dismissed when considering the possible evolutionary origins of anorexia.

The relationship of these factors and others to the incidence of anorexia or predisposition to develop the disorder is a topic that has been studied in numerous clinical studies and studies of the general population of non-disordered people. One such study was done at the University of Minnesota, which related socioeconomic status (SES) and eating disorders (Rogers, Resnick, Mitchell & Blum, 1997). The study found that while there was a significant relationship between SES and dieting behaviors (behaviors associated with eating disorders), there was no relationship between SES and clinically significant eating-disordered behaviors, such as vomiting twice a week or more.

In another study done at Ball State University in Muncie, Indiana, both anorexia nervosa and bulimia nervosa were related to marriage (Wiederman & Pryor, 1997). The results of this study, when age was controlled for, found that ever-married women

anorexics differed from their never-married counterparts only in earlier onset of menarche and earlier onset of sexual intercourse. Neither of these studies investigates male anorexics along with females, and the marriage study chose only to correlate certain behaviors of already married anorexics and bulimics, without looking at such telling ideas as unmarried anorexics' attitudes toward marriage. Dr. Crawford has also found a relationship between slim standards of beauty with such factors as high probability of adverse consequences from sexual maturation (Crawford, 1988). In this case the correlation coefficient for sexual expression and permissiveness was  $r=.325$ . Even this study, however, does not relate anorexia itself to these factors. Other studies have included comparisons of subgroups of anorexics for factors such as depression and anxiety (Nagata, McConaha, Rao, Sokol & Kaye, 1997), as well as a study that investigated the relationship between cognitive avoidance of threat cues and scores on the Eating Disorder Inventory in a non-disordered population (Waller, Meyer, 1997). This particular study found no relationship between slower threat processing and eating characteristics. However, a relationship was found with the Inventory's "ego development" section.

The present study attempts to address questions about the relationship of disordered eating habits and attitudes toward marriage, unwanted attention from the opposite sex, and active seeking of attention from the opposite sex, to add coherence and evidence for the evolutionary explanations of eating disorders such as anorexia. If anorexia was evolutionarily sound as a mechanism, then it must have provided some benefit to those affected or afflicted by it. If this benefit was reproductive suppression, particularly (for our purposes) in response to unwanted attention from the opposite sex, as Dr. Crawford

theorizes, then it would follow that such factors as attitude toward marriage, active seeking of attention from the opposite sex and reaction to unwanted attention from the opposite sex would be affected by the presence of anorexia as well.

**METHOD:** In this study a random sample of men and women ages 16-24 will be gathered. The sample will include 100 men and 100 women (n=200). A second sample of size n=100, consisting solely of diagnosed anorexics will also be taken from both hospitals and outpatient eating disorders clinics. Variables such as socioeconomic status will be controlled for during the selection process. Participants will be administered the Eating Attitudes Test-40 (EAT-40), in order to assess their attitude towards food and eating and to make an approximate and accurate distinction between anorexics and non-anorexics. The test will be scored and the scores used later in comparison with other responses.

The EAT-40 is a comprehensive questionnaire consisting of 40 questions answered with a degree of agreement (always, sometimes, never) which serve to assess the subject's attitudes toward food and eating in different contexts. The questionnaire is scored on a point scale, with the questions divided into two categories each worth from zero to three points. The results of this questionnaire will determine the degree to which the non-diagnosed subjects compare with those who were diagnosed as anorexic based on their comparative scores. The average scores of the diagnosed anorexics will be used as a baseline with which to compare the non-diagnosed participants' scores.

The participants will then be given a questionnaire containing questions and situations relating to their attitude towards marriage, attention from the opposite sex, and active seeking of attention from the opposite sex. They will be asked to respond with

either a graded response (for questions), such as always, sometimes, almost never or never, or will be asked to respond in a few sentences to a given situation (for example, “what would be your response to an invitation to a bar and (if you would go) what would you wear (be specific)?”) All questionnaires will be kept anonymous, the participants will be assigned a number at the beginning of the study, and only their number will appear on any data collected. Numbers will be used to match the two tests in order to compare the participants’ scores on both tests. The questionnaire will be scored on a point system, with each graded response being worth from zero to three points (never=0, always=3), similarly to the way in which the EAT-40 is scored. Each short answer response will be read individually and compared with the participant’s score on the EAT-40. After this data has been collected the point scores on both tests will be compared for each individual. Also, the responses on the free answer questions will be compared with the participants’ scores on the EAT-40 questionnaire.

**RESULTS:** The predicted results from this data should show a negative correlation between EAT-40 scores indicative of disordered eating habits and scores on the graded response questionnaire. I would predict specifically that this correlation would be moderate. The results from comparing the free answer questions with the EAT-40 scores should support this correlation and show a correlation between each of the specific traits under investigation (attitudes toward marriage, unwanted attention from the opposite sex, and active seeking of attention from the opposite sex) and scores indicative of disordered eating attitudes on the EAT-40.

There are other possible results that could occur. Scores on both tests may show no relationship at all between disordered eating attitudes and any of the aforementioned

variables. Thus far no studies have been done testing these specific variables against anorexic attitudes as indicated by the EAT-40 score. There could possibly be a relationship between all of these factors when combined that would not show up when each individual factor is considered separately. This could happen if only a combination of the three variables relates to disordered eating attitudes, and is the reason that each variable will be correlated both separately and in combination with the other two with the EAT-40 score. Also, one variable could likely have a stronger relationship with disordered eating habits than the others, as would be indicated most clearly by the short answer questions.

**DISCUSSION:** Although the relationships between numerous factors and attitudes towards eating have been considered and studied by researchers, there is very little literature that decisively links any of these factors with truly disordered eating habits such as anorexia nervosa. With the advent of evolutionary psychology as a new and different way of looking at the entire field of psychology came the introduction of evolutionary psychopathology. This field, however, has not been well studied thus far and very few disorders have even been speculated to have evolutionary origins. Among those that have are anorexia nervosa, autism, schizophrenia and bipolar (or manic-depressive) disorder. Anorexia nervosa has been of particular interest to evolutionary psychologists because of the implications of finding an evolutionarily viable explanation for the disorder for treatment.

Treatment for anorexia nervosa has so far been speculative and widely varied. Most of the treatments used today have been developed through guesswork, with no theory to help scientists, doctors and counselors alike understand what causes the disorder. If

evolutionary theory can link anorexia and anorexic symptoms to certain factors like advantageous reproductive suppression the disorder can potentially be more fully understood by the clinical community and more effectively treated.

Understanding the relationship between anorexia nervosa and such factors as seeking attention from the opposite sex, attitudes toward marriage, and response to unwanted attention from the opposite sex could help researchers and clinicians treating the disorder in young men and women to better understand what type of disorder they are dealing with, and what is going through the typical anorexic patient's mind. Ultimately, the goal of this research is to better the condition of those who are its subjects.

The relationship of the three specific factors being studied here to anorexic behavior could have an effect on the way clinicians go about treating the disorder. Should anorexia prove to be related to attitudes toward marriage and attention from the opposite sex, then it could be hypothesized that anorexia nervosa is a condition that results from these and other reproductive and sexually related attitudes.

Our male and female ancestors were faced with such threats to their reproductive success as early sexual maturation and other causes that would render an unfit time for bearing children. Some may have had strategies to cope with these difficulties that worked, and were passed down to each successive generation. Others, who did not possess these advantages would not be as reproductively fit and would thus leave fewer offspring. If these "strategies" consisted of a propensity to avoid seeking out the attention of the opposite sex until they were mature enough to be fit parents, and to avoid a long-term mate for the same reason, then these individuals could conceivably have been

more fit for their environment, which must have required some level of maturity in order to bear and care for children, physical as well as intellectual/emotional.

Anorexia nervosa, then, may not be a disorder or “harmful dysfunction” as Wakefield calls it (Wakefield, 1999), but a maladaptation stemming from the idea of “evolutionary time lags” (Buss, 1999). Humans are not optimally designed for their current environment, but for their ancestors’. Therefore, some of the “illnesses” and “disorders” we see today may very well be leftovers from times past that are no longer adaptive, or are even maladaptive in today’s society. An evolutionary perspective on conditions like anorexia nervosa would help clinicians to better understand where this illness comes from and how best to treat it.