2002

Conceptualizations of health and illness: A test of the theory of male bias.

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Conceptualizations of Health and Illness: A Test of the Theory of Male Bias.

By

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A Masters Thesis
Submitted to the Faculty of Graduate Studies and Research
through the Department of Psychology
in Partial Fulfillment of the Requirements for
the Degree of Master of Arts at the
University of Windsor

Windsor, Ontario, Canada

2002

Abstract

The theory of male bias states that for various social, political and historical reasons, men and male experiences are used as the standard for the culture (Bem, 1993). The present study tested the theory of male bias by examining the applicability of research from the 1970s which found that health care professionals did exhibit the use of sex bias in conceptualizing clinical functioning (Broverman, Broverman, Clarkson, Rosenkrantz & Vogel, 1970). In an effort to examine the effect of questionnaire methodology, the Sex-Role Stereotype Questionnaire (Broverman, et al., 1970) was presented in both the original forced choice as well as a Likert format. Conceptualizations of illness were also examined. One hundred and twenty-one undergraduate nursing students participated by completing self-report questionnaire packets. Not only were Broverman's et al. (1970) results not replicated when presented in the original forced choice format, but participants exhibited a much wider range of behavioural representations of health. Two explanations in understanding the results of the present study are offered. Concerns about the forced choice methodology originally utilized by Broverman et al. (1970) and the exploration of evolving gender norms are offered as possible explanations for the current results obtained. The present study adds to the inconsistencies about the theory of male bias that already exist in the literature and calls into question the current applicability of Broverman et al.'s (1970) research.

Acknowledgements

Dad, thank you for the kind of unwavering faith that can only be found between a Dad and his "baby girl." Mom, thank you for the gentle and loving reminders to "dance" once in a while. The kind of support and love that the two of you have shown me throughout my endeavours is incredible and overwhelming. Read this piece of work with the knowledge that it *could not* have been completed with you.

Chris, thank you for being such a constant and supportive friend. No sister has ever had a greater brother. I admire you much more than you know.

Charlotte, *hayate*, what a beacon of strength you have been for me during a most difficult period. What a relief to be able to just laugh it all off with such a good friend. Thank you just doesn't seem like enough.....

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Chapter I

Introduction

Context

Whether you subscribe to an evolutionary perspective or a socio-cultural perspective, the role of women in society has, essentially, been subordinate to that of men. Historically, women have played a secondary role and have had to fight for the same rights and privileges awarded quite naturally to men. Although there have been many advancements in the area of gender equity, some argue that they have done little to change women's ultimate role in society (World Health Organization, 1998). According to Bem (1993), there are three prevailing beliefs about men and women in Western society; she names them the lenses of gender. The first belief is that men and women are fundamentally and psychologically different. The second belief is that these differences and the ideology of male dominance are genetically determined and ultimately natural. Finally, the androcentric gender lens is where the male experience is taken as the standard or the norm. Sandra Bem (1993) describes this last tendency as:

> ...the privileging of male experience and the "otherising" of female experience; that is, males and male experience are treated as a neutral standard or norm for the culture or the species as a whole, and females and female experience are treated as a sex-specific deviation from the allegedly universal standard. (p.41)

This tendency to view men as the standard has greatly affected the lives of both men and women (World Health Organization, 1998). Using one sex as the measuring yardstick has led to the development of many stereotypical attributions about the sexes. For instance, our stereotypical attributions suggest that men are biologically inclined to cheat, to be more objective, to be goal oriented and non-nurturing while women are

supposedly mothering, gentle, caring and simple (Blustain, 2000). However, what happens when a person's behaviour or psychological research challenges these stereotypical attributions? Unfortunately, many of the attitudes and beliefs about gender differences are so well ingrained that they guide attributions of and attitudes about the sexes, despite familiar examples and research which may refute the assumptions of inequalities and differences. For example, in 1900, Helen Thompson Woolley examined a very popular gender attribution of the time, sex differences in intellectual capacity, in her dissertation research at the University of Chicago (Pyke, personal communication, March 14, 2000). This first major experimental laboratory study of mental differences between men and women included measures of information associations, emotional reactions, sensory ability and motor skills. Despite the strong convictions of many male researchers, she found very few differences between males and females and the differences that she did observe were insignificant. Pyke (personal communication, March 14, 2000) recounted Woolley's observations:

> The psychological differences of sex seem to be largely due, not to differences of average capacity or to differences of the type of mental activity, but rather to differences in the social influences brought to bear on the developing individual from early infancy to adult years.

Thus, many stereotypical attitudes about men and women continue to exist despite evidence of their inaccuracies.

It has been argued that a connection exists between changing gender roles and gender stereotypes (Bergen & Williams, 1991; Eagly & Steffen, 1984; Hoffman, 1977). Research indicating the changing roles of men and women is abundant, the most notable change occurring in the realm of employment. In 1951, 24.4% of the Canadian female

population was part of the labour force; this number grew to 58.9% in 1999 (Statistics Canada, 1999). Evidence of women opting to work outside the home may also be found by examining university enrolment data. For example, while the Canadian female percentage of total undergraduate full-time enrolment was at 21.7% in 1951, it rose to 55.7% in 1998 (Statistics Canada, 1999). While the changes in women's roles have been more dramatic, the roles of men are also evolving. According to the U.S. Bureau of the Census (1999), men are slowly venturing into previously female-dominated occupations such as nursing and physical therapy (as cited in Auster, 2000) while others are taking on increased domestic and familial duties (Levine & Pittinsky, 1997; Risman & Johnson-Sumerford, 1998).

Have these changing gender roles influenced our ideas about men and women? There is some evidence to suggest that our stereotypical attitudes and attributions are gradually changing. For instance, Loo (1998) examined attitudes toward women's roles in society using the "Attitudes Toward Women Scale" (AWS) and compared the findings from his 1996 sample to a sample from 1976. He found that "attitudes toward women's roles in society have become more liberal since the mid-1970s for both men and women" (p.5). Interestingly, however, he also found a gender gap (a statistical difference in attitudes toward women with women holding more liberal views) measured by subscales 1–Vocational, Educational, and Intellectual Roles (items include "The intellectual leadership of a community should be largely in the hands of men" and "There are many jobs in which men should be given preference over women in being hired or promoted") and 6–Marital Relationships and Obligations (items include "It is insulting to women to have the "obey" clause remain in the marriage service" and "A woman should be as free

as a man to propose marriage"). Loo speculates that this gap may be a reflection of an historically androcentric society. While the status of *some* of our cultural norms and stereotypes appear to be changing, the changes may take time because the gender divisions are not only salient, but reinforced by the culture we live in (Blustain, 2000).

The many culturally constructed inequalities that arise from belonging to one sex or another and the historical subordination of women can create, maintain or make worse certain risk factors that endanger health (World Health Organization, 1998). The health care system, not unlike society, has a history of stereotyping women and men based on longstanding traditional roles and attitudes (Health Canada, 1999). The tendency to perceive men as the norm has had powerful effects ranging from "...the differential treatment and diagnosis of diseases in men and women to the historical underrepresentation of women as participants in research" (Benrud, 1998, p.375). Despite changes to the provision of health care, the historical "othering" of women has had a profound effect on the state of the health care system and on women as users of the system.

Theoretical Background and Review of Related Research

Viewing men as the standard. The theory of male bias states that for various social, political and historical reasons, men and male experiences are used as the standard for the culture (Bem, 1993). While one can find various current examples of support for the theory of male bias (Adesso, Reddy, & Fleming, 1994; Ehrenreich & English, 1978; Leavy & Richey, 1988; Travis, 1988), it is also interesting to investigate the history of the bias. An early indication of the use of the male as the standard can be seen in the domain of philosophy. For instance, Aristotle argued that women were inferior beings and

consequently referred to them as "misbegotten males" (Osborne, 1979). At this time, the origin of the inequalities between the sexes could be found in part in the primacy of Adam's creation. According to Tuana (1993), because Adam was first in time, the material source for the creation of Eve and the one who was created in the divine image, man was superior. While Adam exhibited intellectual activity, Eve was more or less summed up by her bodily reproductive function. In Western society, scientific authority has predominantly replaced religious dogma; regardless, society continues to be influenced by these original beliefs. The theory of evolution was one of the earliest scientific explanations for female inferiority. Charles Darwin argued that females had not climbed as high on the evolutionary ladder as men had; they were lower on the philogenetic scale. Darwin (1967) explained:

> It is generally admitted that with women the powers of intuition, of rapid perception and perhaps of imitation, are more strongly marked than in men; but some, at least, of these faculties are characteristic of the lower races, and therefore of a past and lower state of civilization. The chief distinction in the intellectual powers of the two sexes is shown by man's attaining to a higher eminence, in whatever he takes up, than can women. (p. 873-875)

The idea of women's inferiority continued to persist through the early to mid nineteen hundreds. In Canada, for instance, women have a long history of being excluded from the mainstream of economic, cultural, educational and social life. Status of Women Canada is the federal government agency which promotes gender equality, and the full participation of women in the economic, social, cultural and political life of the country. The agency describes one of the greatest and most fundamental triumphs experienced by Canadian women and culture (Status of Women Canada, 2000). In 1927, five Canadian

women went before the Supreme Court of Canada to ask, "Does the word 'persons' in Section 24 of the British North America Act include *female* persons?" They were told "no." According to the Supreme Court of Canada, women were indeed *not* persons. Following a long political and legal battle, the British North America Act was altered in 1929 to include the female gender and as a result, women are eligible for appointment to the Senate of Canada.

Today the tendency to view men as the standard exhibits itself in fields as wide-ranging as health, business, psychology and even art (Benrud, 1998). For example, while researching characterizations of successful managers, Schein (1973) found that the participants' characterizations were more similar to those of males in general than to characterizations of women. In the medical field, students typically learn about "anatomy and physiology" and then "*female* anatomy and physiology." The male anatomy, though not named as such, is seen as the standard while *female* anatomy is conceived of as some kind of variation on the theme (Lawrence & Bendixen, 1992).

The Canadian health care system. Canada's health care system, recognized by most Canadians as Medicare, is publicly funded (primarily by the provincial, territorial and federal governments) and privately delivered (Health Canada, 2002). In other words, the majority of physicians work independently through private practice. In 1984, the Canada Health Act was passed which incorporated five principles: public administration, comprehensiveness, universality, portability and accessibility (Health Canada, 2002). Beyond its recognized formal definition, more generally, the term *health care system* also encompasses the system's history and development, the training and education of health care providers, the variety of health care providers, as well as users of the system.

Gender bias in the health care system. The Canadian health care system has not been immune to the nearly universal tendency to view men as the standard. Health Canada (1999) identified four types of gender bias that exist in the health care system. While several advances have been made within the health care system, especially with regard to the more frequent use of women in medication trials and our current focus on women and heart disease (e.g. Bartlett, 2001), the effects of our tendency towards male bias may be long lasting and difficult to fully remedy.

For example, according to Health Canada (1999), our tendency to view men as the norm or standard has affected women's health care in terms of its narrowness of focus. Biology and our cultural norms ascribe to women the traditional role of mother and child-bearer. The health care system has reflected this reality through its historical preoccupation with the reproductive system and especially with maternity when it comes to women's health, sometimes neglecting the study of any stereotypically "male" illnesses in women such as cardiovascular disease and cancer. The gender bias has also manifested itself in the reluctance of the health care system to view health as more than an absence of illness. For example, focus group participants from a study by Canadian researchers Taylor and Dower (1997) expressed openly their frustrations with a health care system that focuses on illness and medication, rather than health promotion and prevention. One woman explained, "I think a dream health care system is: I don't have to think twice about going to the doctor-even in the preventive stage" (p.421). The Canadian health care system thus needs to expand its focus and take into account women's various health issues including preventative health.

The second major health gender bias is exclusion (Health Canada, 1999). In many segments of the health care system, women are under-represented as policy makers,

decision-makers and educators. Professions like nursing that are mostly female dominated are less valued while male dominated medical specialities like obstetrics have higher status within the health care system. Women's health issues have also been excluded in terms of funding. In 1994, the Medical Research Council's Advisory Committee on Women's Health Research Issues found that women's health issues received only 5% of the research funds.

Thirdly, women are often dealt with as though they are biologically the same as men (Health Canada, 1999). For example, misdiagnoses of women with heart disease often occur because the expectation is that women will display the same symptoms that men display. One participant from Taylor and Dower's (1997) study explained, "If you don't fit [the doctor's] checklist, they thought you were making it up." Another participant's doctor told her, "You can't possibly have all those symptoms because they cross too many systems" (Taylor & Dower, 1997, p.419). In other words, if the patient's symptoms do not match the doctor's checklist, which is historically based on the male norm, the patient must be mistaken or untrustworthy.

The health care system provides us with various examples of how women have been treated as though they are biologically the same as men (Health Canada, 1999). For example, in 1988, research suggested that beta-adrenergic-antagonist therapy could benefit heart attack victims (male or female) who were of medium to high risk for subsequent attacks. However, the sample was comprised of 13, 385 men– not one woman was involved (Fletcher, 1996). Furthermore, for decades, postmenopausal women were told that they were at an increased risk for heart disease if they had cholesterol levels over 200 (and that they must decrease those levels) (Fletcher, 1996). This recommendation was based on studies utilizing only male participants. Regardless, this ideal cholesterol

cut-off point of 200 or less was extrapolated to postmenopausal women. More recently, research indicated that women with cholesterol levels over 295 showed the same or even lower rates of heart attacks as men with levels of 204. The results obtained from research on predominantly male subjects have historically been applied with little questioning to female patients. Women's health is compromised because they use drugs which may not have ever been tested on women, because the course of a particular disease may not be known in terms of gender differences and because women's experiences of illness and treatment options may not have been explored (World Health Organization, 1998).

Finally, and in contrast, women are often treated differently than men, a bias that typically expresses itself by a lack of respect for women (Health Canada, 1999). For years, women have reported that health care providers are condescending and that they trivialize their complaints. Another woman from Taylor and Dower's (1997) study was told by her doctor, "You use your imagination too much. You do not have any problem" (p.412). Her "problem" was later treated with surgery. This is an example of how women's health issues have often been attributed to emotions or imagination and not to biological causes. Moreover, the biases of the health care system affect not only users of its services but also paid and unpaid caregivers. For example, nurses have to gain the respect and recognition they deserve as valuable members of the health care profession while physicians and doctors have not been forced to prove their worth.

Differential explanations of health and illness. Lisa Benrud (1998) investigated how the tendency to view men as the norm for health would affect undergraduates' explanations for gender differences in illness. It was hypothesized that when females were portrayed as suffering from more (both chronic and acute) non-gender-specific illnesses (i.e. at a *health disadvantage,* Benrud, 1998), the gender difference in illness

would be attributed primarily to relatively uncontrollable, constitutional factors (e.g. biology or emotions). On the other hand, when males were portrayed as suffering from more (both chronic and acute) non-gender-specific illnesses, it was hypothesized that the gender difference would be attributed to relatively controllable and nonconstitutional factors (e.g. behaviours such as smoking or reckless driving). Benrud (1998) found that participants did hold different gender explanations for health depending upon whether women or men were placed at the health disadvantage.

In 1970, Broverman, Vogel, Broverman, Clarkson and Rosenkrantz conducted a now classic and oft-cited study entitled "Sex-Role Stereotypes and Clinical Judgments of Mental Health." They tested clinicians using the forced-choice Sex-Role Stereotype Questionnaire and found that the normal healthy adult male was perceived by both male and female clinicians as having more positive characteristics than the normal healthy adult female. Furthermore, when the person's gender was left unspecified, the normal healthy adult male was seen as virtually identical to the normal healthy adult. Additionally, stereotypically masculine traits were perceived as more socially desirable than were stereotypically feminine traits (Rosenkrantz, Vogel, Bee, Broverman, & Broverman, 1968). For the past 31 years, Broverman et al.'s (1970) long-standing assumption of the theory of male bias has been widely referenced in textbooks and research journals dealing with both physical and mental health as well as gender bias issues but has had very little empirical validation.

Rationale for the Present Study

This study, thus, tested the theory of male bias in two ways: by examining participants' attitudes towards health and their conceptualizations of illness. It built on both Benrud's (1998) and Broverman et al.'s (1970) studies by examining four critical

aspects: (1) whether Benrud's findings would be replicated using a nursing student population, (2) whether, following the theory of male bias, a gender-unspecified health disadvantage condition would elicit similar explanations of illness as the male health disadvantage condition (where *disadvantage condition* means portrayed as suffering from more chronic and acute illnesses), (3) whether, especially in light of their frequent citation, Broverman et al.'s 1970 research results are still applicable 32 years later, and (4) whether questionnaire format (forced choice or Likert) would affect participants' responses to the Sex-Role Stereotype Questionnaire.

While the implications of Benrud's (1998) study *are* significant on their own, it is argued that the results of the present study, using nursing students as participants, will further our understanding of the theory of male bias in the medical field. The reason for choosing nursing students as participants was two-fold. First, if nursing students exhibit the same attribution patterns as undergraduate students and clinicians, the implications for the health care system and its users would potentially be even greater. Thus, nursing student participants may reveal even more interesting results than Benrud's (1998) undergraduate participants because of their future roles as decision-makers and gatekeepers to health care. Secondly, while the medical system itself has had a long history of being male dominated, nursing has been primarily a female dominated area. It was thus important to investigate if Benrud (1998) and Broverman et al.'s (1970) patterns of conceptualizations would exhibit themselves in this population and to speculate how this may affect users of the health care system.

For instance, if women's illnesses are attributed to uncontrollable factors such as biology, there may be more energy spent on treatment than on prevention; women may be lead to feel powerless when it comes to their illness. And if women's illnesses are

attributed to emotions, these illnesses may not be taken seriously and the appropriate treatment and diagnosis may be disregarded. Conversely, if men's illnesses are seen as largely due to controllable factors such as behaviour, prevention may be the main focus. In this situation, men may be seen as much more in control of their illness. Therefore, it is important to further our understanding of these concepts because the outcome affects so many people.

Originally, Broverman et al.'s (1970) questionnaire items forced people to choose between two extremes. For example, participants in Broverman's study were asked to choose which pole, *Very passive* or *Very aggressive*, was more representative of the healthy male, female or adult. It is plausible that during the early 1970s, when people's attitudes towards the sexes were more extreme, this testing method would have been a valid and fair representation of people's beliefs about men and women. However, taking into consideration Loo's (1998) research results about changing attitudes towards women, the fact that attitudes towards men and women's societal roles have changed since the early 1970s (e.g. Kite, 2001; Risman & Johnson-Sumerford, 1998) and the saliency of gender stereotypes, it is just as possible that forcing people to choose between two stereotypical poles would almost guarantee results based on stereotypes. A questionnaire which utilizes simple polarity in response options is too coarse and general as a measurement tool. In other words, forcing participants to choose between *Very passive* and *Very aggressive* as representative of the healthy male is not a specific enough measure and may result in stereotypical results based more on methodology than on authentic attitudes towards men.

Since the results of Broverman et al.'s (1970) research were published, researchers have been replicating the study using various forms of the instrument and

participants. For example, Maslin and Davis (1975) used a comparable instrument and instructions but a different type of sample. They found that while female "counsellors- in-training" did not hold sex-role stereotypes, their male colleagues did. On the other hand, Aslin (1977) used a comparable sample, but a different instrument. She investigated conceptualizations of health for adults, females, wives and mothers. Using male and female psychotherapists and feminist therapists as participants, she found that a single standard of health was maintained for all categories by all the female therapists. However, the male therapists' conceptualizations of health for mothers and females differed from that of the female therapists. Despite frequent replication and citation of the Broverman et al. (1970) study, much uncertainty still exists about the validity of the theory of male bias and sex-role stereotyping. In fact, in 1979 Franks argued that:

> a Broverman type of study in the 1980's will perhaps show no polarity in thinking among mental health workers and both the mentally healthy male and the mentally healthy female will be considered well adjusted if they have a broad repertoire of healthy male stereotyped as well as healthy female stereotyped behavior, regardless of gender assignment. (p. 473)

In an effort to have a current reassessment of Broverman et al.'s (1970) theory of male bias while establishing participants' beliefs (and not only stereotypes) about men and women, participants of the present study responded to both the original forced choice as well as a Likert format Sex-Role Stereotype Questionnaire to investigate if, when given more response options, Broverman et al.'s (1970) results would be replicated.

Hypotheses

The present study tested the hypothesis that explanations of illness and judgments of health would differ as a function of the sex of the person being judged. The following

hypotheses are based on Benrud (1998) and Broverman et al.'s (1970) research. If the evidence of male bias found in these studies is still applicable today, similar results should be found in the present study.

Conceptualizations of illness.

(1) If the theory of male bias is correct, one would expect that the female disadvantage condition (females portrayed as suffering from more chronic and acute non-gender-specific illnesses) would elicit explanations of illness that emphasize commonly held stereotypes about women and their inherent differentiation from men (e.g. biology and emotions).

(2) If the theory of male bias is correct, one would expect that the male disadvantage condition (males portrayed as suffering from more chronic and acute non-gender-specific illnesses) would elicit explanations of illness that emphasize not factors that make men different from women, but those that are relatively controllable (e.g. behaviours).

(3) If the theory of male bias is correct, one would expect that the adult disadvantage condition (adults portrayed as suffering from more chronic and acute non-gender-specific illnesses) would elicit explanations of illness that were similar to those elicited by the male condition.

Conceptualizations of health (forced choice format).

(4) If the theory of male bias is correct, one would expect that the Broverman items, when in the dichotomous form, would elicit responses that are more representative of a stereotypical view of health than presented in Likert format.

(5) It was hypothesized that previously established norms of social desirability (Rosenkrantz et al., 1968) would be related to conceptualizations of mental health.

(6) The health scores were computed based on the assumption that the pole that was marked by the majority of participants as healthy for an adult should be indicative of the standard for health (Broverman et al., 1970). If the theory of male bias is correct, one would expect that masculinity health scores would be greater than the femininity health scores on the male-valued items.

(7) If the theory of male bias is correct, one would expect that femininity health scores would be greater than the masculinity health scores on the female-valued items.

(8) If the theory of male bias is correct, one would expect that conceptualizations of health for adults and men would be similar while conceptualizations of health for women would differ significantly from those of the adults.

Conceptualizations of health (Likert format).

(9) It was hypothesized that Broverman's items would elicit, when given the Likert option, responses that were more representative of a balanced view of healthy normality (with scores averaging 4) than a more extreme view of polar opposites (with scores closer to the extremes of 1 or 7).

(10) It was also hypothesized, however, that certain items representing more strongly held and salient stereotypes may show more extreme response patterns.

Chapter II

Method

Participants

Participants were nursing students recruited from the University of Windsor's School of Nursing. The four-year nursing program at this university prepares practitioners to collaborate with clients and members of a health care team to facilitate the achievement of optimal levels of health. The scope of the program includes teaching scientifically-based practice using theory, clinical skills and research findings. The School fosters personal and professional development and ethical accountability.

Participation was entirely voluntary and students did not receive bonus points or remuneration for participation. Participants were recruited through Faculty of Nursing classrooms. Nursing professors were contacted on an individual basis, told the purpose of the research and asked if they would be willing to allow the researcher to speak to their students during class time. Once in the classroom, the researcher described the research and asked interested participants to remain seated. Willing participants then read and signed a consent form (Appendix A) that explained the purpose of the study, the voluntary nature of their participation and ensured them of the confidentiality of their responses.

In total, 111 women and 10 men completed the questionnaire packet. The mean age of the participants was 21.97 years ($SD = 3.65$), and ranged from 18 years to 40 years. 17.4 % of the participants were first year students, 35.5% were second year students, 18.2% were third year students, 24% were fourth year students while 4.1% were fifth year and over.

Measures

Demographic information. At the top of each questionnaire (see top portion of Appendix B), participants were asked to provide demographic information including their sex, age, year of study and ethnic background.

Spontaneous Attribution Measure. The Spontaneous Attribution Measure (see Appendix B) began with the heading, "Recent research has found that the prevalence rates of both chronic and acute conditions have increased significantly more for women than for men" under which is placed two statements, (1) Many females have a higher incidence rate of acute conditions than males even when gender specific conditions such as disorders of menstruation and pregnancy are excluded (e.g. vomiting). (2) Many females also have more chronic conditions than males when gender specific conditions are excluded (e.g. chronic constipation). In fact, females had substantially higher prevalence rates than males for 71% of the non-gender-specific conditions listed in the National Health Interview Survey. Following these descriptions were 16 examples of non-gender-specific acute and chronic conditions (e.g. arthritis, chronic sinusitis). These examples were used to ensure that participants had a uniform understanding of the conditions; it should also be clear that the illnesses were not due to gender-specific conditions. Benrud (1998) originally chose these 16 acute and chronic conditions because they stem from a wide range of bodily systems (i.e. respiratory, cardiovascular, digestive).

The description for the male disadvantage condition was identical to the female disadvantage condition except that the gender differences were presented as disadvantaging to men; the same list of 16 health conditions followed the description. Finally, in an effort to add a neutral condition and to further investigate Broverman et

al.'s (1970) theory of male bias, a third adult condition was added. The adult disadvantage condition began with the heading, "Recent research has found that the prevalence rates of both chronic and acute conditions have significantly increased for both men and women." The same list of 16 conditions followed.

Instructions. Participants each received a copy of the Spontaneous Attribution Measure which included one of three instructional sets: disadvantaging to women, disadvantaging to men or disadvantaging to adults. Participants were randomly assigned to instructional set groups. Questionnaires from each condition were interspersed with one another until one random pile was obtained. Then, participant questionnaire packets were distributed from this pile. After participants read the information provided, they responded to the Spontaneous Attribution Measure in order to assess causal attributions for the gender difference in acute and chronic conditions. The measure assessed participants' self-generated attributions for the gender differences. They were asked "In your own words, please give your opinion on the reasons why the prevalence rates of both chronic and acute conditions have significantly increased for (women, men, both women and men)." Participants were asked to provide as many reasons for the gender differences in illness as they could come up with (up to a maximum of 6).

Sex-Role Stereotype Questionnaire. This study also utilized the Sex-Role Stereotype Questionnaire first developed by Rosenkrantz et al. (1968) and modified by Broverman et al. (1970). The original form consisted of 122 bipolar items describing a particular behaviour or characteristic. Rosenkrantz et al. (1968) found an item to be stereotypically masculine or feminine when 70% or greater agreement occurred as to which pole better characterized masculine or feminine behaviour. This percentage was obtained for 41 of the 122 items. The questionnaire was further reduced to the current

number of 38 by Broverman et al. (1970). Seven of the 122 items appeared to be reflecting adolescent characteristics surrounding sex (reflecting the use of college age students as research participants) and were therefore replaced with seven more general items. Three of the discarded items were stereotypically masculine or feminine, thus resulting in the final number of 38. The 38 item Sex Role Stereotype Questionnaire was presented in both a forced choice (Appendix C) and Likert format (Appendix D). An example of an item from both the forced choice as well as Likert format follows.

(1) Very dependent Very independent

(2) Very dependent Very independent
1 2 3 4 5 6 7

Instructions. Participants each received two formats of the questionnaire which included one of three instructional sets: health of women, health of men, or health of adults. Participants were randomly assigned to instructional set groups. Questionnaires from each condition were interspersed with one another until one random pile was obtained. Then, participant questionnaire packets were distributed from this pile. The forced choice format of the 38-item questionnaire was accompanied with one of three sets of instructions, "Think of normal, adult (women, men, adults) and then indicate which item corresponds most to that of a mature, healthy, socially competent adult (female, male, adult)."

The Likert format used the same 38 items with one of three sets of instructions, "Think of normal, adult (women, men, adults) and then indicate which number corresponds most to that of a mature, healthy, socially competent adult (female, male, adult)." A 7-point scale separated the two poles. The order of the two versions was altered randomly across participants in an effort to eliminate possible order effects.

Independent and Dependent Variables

The independent variables were the three health and illness conditions (female, male and adult). The dependent variables were the 3 measures (Spontaneous Attribution Measure, Sex-Role Stereotype Questionnaire-Forced Choice format, Sex-Role Stereotype Questionnaire-Likert format).

Procedure

The students were tested in their classrooms at the School of Nursing during a 20-minute period. Students were asked to participate on an anonymous, confidential and voluntary basis. They were reminded that they could withdraw from participation at any time without penalty. Participants then read and signed a consent form. After completing the consent form, the signed copy was removed from the questionnaire packet and a copy was left for the student. Upon completion and return of the questionnaire packet, participants were given a debriefing form (Appendix E) which gave a brief description of the theory of male bias, the rationale behind the current research as well as contact information for those who were interested in the final results.

Chapter III

Results

Descriptive Statistics

All data were analyzed using the SPSS 10 statistical software package. After the data had been inspected and cleaned, descriptive statistics were computed for the demographic variables. One hundred and twenty-one participants were equally distributed among all three conditions with 33.9% ($n = 41$) of students in the female condition, 32.2% ($n = 39$) of students in the male condition and 33.9% ($n = 41$)of students in the adult condition. To determine the internal consistency of the two Sex-Role Stereotype Questionnaires, Cronbach's alpha coefficients were calculated. Coefficient alpha for the Sex-Role Stereotype Questionnaire–Forced Choice Format was .7610; coefficient alpha for the Sex-Role Stereotype Questionnaire–Likert Format was .843.

Conceptualizations of Illness

Scoring. After the questionnaires were obtained, the explanations for the gender differences in illness were read and classified by the primary researcher. The six categories established by Benrud (1998) ("Biology," "Behaviour," "Emotions," "Role Expectations," "Care from Health Professionals" and "Fate") were, however, not sufficient for the current data set. Seven categories were thus established and included "Biology," "Behaviour," "Emotions," "Role Expectations," "Care from Health Professionals," "Environment" and "Education." Examples for each category are provided in Table 1. Finally, a research assistant who was unfamiliar with the purpose of the study also read and classified the causal attributions. Prior to classification, the

Table 1

Examples of Explanations Provided for the Spontaneous Attribution Measure by Category

Biology
"Men only have one X and one Y chromosome whereas women have two X chromosomes which helps protect them against genetic predispositions for certain illnesses."

"Heredity."

Behaviour
"Women tend to have healthier diets and they exercise more."

"Men engage in more risky behaviour than women do."

Emotions
"Women are more sensitive and more emotional."

"Women have more psychological problems and are more sensitive."

Role Expectations
"Women are more stressed because women are working more while still taking the primary responsibility to care for children and home."

"Men work longer hours and are more likely to work in repetitive production lines."

Care from Health Professionals
"Research is done primarily on men so traditional treatments or prevention strategies may not apply to women."

"Health care field only now just starting to realize that women suffer from disease as well as men and similar ones too."

Environment
"Rise in pollution."

"Greater environmental hazards has let to many chronic disorders such as headaches, sinus problems, allergies, etc."

Education
"Women are more opt to learning about their health through magazine and television programs. "

"Lack of education."

research assistant was trained in coding responses. Initially, agreement was obtained on 96% of the attributions. For the attributions where disagreement between raters occurred, the researcher and research assistant discussed the observations until the difference was reconciled and 100% agreement was obtained.

Explanations for illness. A three (gender condition) by seven (explanations) contingency table analysis was conducted to evaluate whether explanations for the gender difference in the conceptualizations of illness were affected by whether women, men or adults were placed at a health disadvantage. Gender condition and explanations were found to be significantly related X^2 (12, $N = 483$) = 50.745, $p = 000$. Follow-up pairwise comparisons were conducted to evaluate the difference among the gender conditions. Holm's sequential Bonferroni method was used to control for Type I error at the .05 level across all three comparisons. Table 2 shows the three chi-square results. A post-hoc examination indicated that there were significant differences (at the $p = .05$ level) between the observed and expected frequencies in 4 of the 14 cells from the female versus male comparison and in 4 of the 14 cells from the female versus adult comparison. Specifically, participants in the female disadvantage condition listed "Behaviour" as an explanation for the gender difference less often than expected and "Role expectations" as an explanation for the gender difference more often than expected. Participants in the male disadvantage condition listed "Behaviour" as an explanation for the gender difference more often than expected and "Role expectations" as an explanation for the gender difference less often than expected. Participants in the adult disadvantage condition exhibited a similar response pattern to participants in the male disadvantage condition.

Table 2

Results for the Chi Square and Pairwise Comparisons Between Condition and Explanations Using Holm's Sequential Bonferroni Method

Comparison	chi-square	p-value	Required p-value for significance	Significance
female vs. male	34.159	.000	.0167	*
female vs. adult	33.129	.000	.025	*
male vs. adult	9.300	.157	.05	NS

Note. An asterisk (*) indicates significance.

Conceptualizations of Health- Forced Choice Format

Scoring. Following the scoring criteria of Broverman et al. (1970) two types of scores were developed: *agreement* scores and *health* scores. These scores both were developed by counting the number of participants within each set of instructions, that marked each pole of each questionnaire item as more representative of a healthy person. In order to account for the few participants who may have left an item blank, the proportion (percentage) of participants marking a particular pole was computed (and not raw frequency scores).

Agreement scores were developed by computing the proportion of participants within each instructional set that marked a particular pole as representative of a healthy person for each item (after Broverman et al., 1970). Therefore, each of the 38 questionnaire items had three agreement scores based on the questionnaire instructions: female condition agreement scores (based on participants who received the female instructions), male condition agreement scores (based on participants who received the male instructions) and adult condition agreement scores (based on participants who received the adult instructions).

The health scores were computed based on the theory of male bias and the assumption that the pole that was marked by the majority of participants as healthy for an adult should be indicative of the standard for health (Broverman et al., 1970). In other words, the proportion of participants within the female and male conditions that chose that pole which was marked by the majority of participants in the adult condition as more representative of a healthy person was utilized as the health score. Therefore, each of the 38 questionnaire items had two health scores based on the questionnaire instructions: female condition health scores (based on participants who received the female

instructions) and male condition health scores (based on participants who received the male instructions).

Agreement mean scores. Table 3 shows the means and standard deviations for the female, male and adult condition agreement scores from both the current as well as Broverman et al. (1970) samples. A one-sample *t* test was conducted on the agreement mean scores to evaluate whether the means were significantly different from the 50% agreement that one would expect on the basis of chance with a forced choice methodology. All three agreement means were significantly different from 50%. The female agreement mean of 77.55% (SD = 15.73) was significantly different from 50%, t (37) = 10.795, p = .000. The male agreement mean of 72.58% (SD = 13.98) was significantly different from 50%, t (37) = 9.953, p = .000. The adult agreement mean of 71.18% (SD = 12.83) was significantly different from 50%, t (37) = 10.179, p = .000. In other words, participants seem to agree as to which behaviours constitute a healthy female, male and adult.

Broverman et al.'s (1970) participants categorized the Sex-Role Questionnaire items into those more valued in females and those more valued in males. Table 4 shows how the 38 items of the questionnaire break down into male and female valued items. Participants of the present study chose the masculine pole as more representative of the healthy adult male for all 27 male valued items, and chose the feminine pole as more representative of the healthy adult female for all 11 female valued items. However, this response pattern was not found for the opposing gender. For instance, the feminine pole was chosen as more representative of the healthy female for only 8 of the 27 male valued items while the masculine pole was chosen as more representative of the healthy male for 7 of the 11 female valued items. Following the theory of male bias, the adult condition

Table 3

Ranges, Means, Standard Deviations, and One Sample t-test results for Agreement Mean Scores

Agreement mean	Range	*M*	*SD*	*t*	*p*
Female	50-100	77.55	15.73	10.795	<.000
Male	51-97	72.58	13.98	9.953	<.000
Adult	53-95	71.18	12.83	10.179	<.000

Means and Standard Deviations from Broverman et al.'s (1970) Agreement Scores

Agreement score	*M*	*SD*	Deviation from chance	
			Z	*P*
Female	.763	.164	2.68	<.005
Male	.831	.122	3.15	<.001
Adult	.866	.116	3.73	<.001

Table 4

Agreement and Health Scores for the Male and Female-Valued Items of the Sex-Role Stereotype Questionnaire for the Present Study

Feminine Pole	Masculine Pole	FA	MA	FH	MH	AH
	Male valued items					
Not at all aggressive	Very aggressive	51 [1]	59 [2]	51	41	60 [1]
Not at all independent	Very independent	95 [2]	94 [2]	95	94	95 [2]
Very emotional	Not at all emotional	88 [1]	70 [2]	13	70	53 [2]
Does not hide emotions at all	Almost always hides emotions	78 [1]	76 [2]	78	24	53 [1]
Very subjective	Very objective	50	76 [2]	50	76	58 [2]
Very easily influenced	Not at all easily influenced	73 [2]	68 [2]	73	68	75 [2]
Very submissive	Very dominant	70 [2]	97 [2]	70	97	75 [2]
Dislikes math and science very much	Likes math and science very much	69 [2]	84 [2]	69	84	65 [2]
Very excitable in a minor crisis	Not at all excitable in a minor crisis	56 [2]	67 [2]	56	67	58 [2]
Very passive	Very active	90 [2]	86 [2]	90	86	77 [2]
Not at all competitive	Very competitive	69 [2]	86 [2]	69	86	73 [2]
Very illogical	Very logical	88 [2]	81 [2]	88	81	90 [2]
Very home oriented	Very worldly	68 [1]	57 [2]	33	57	53 [2]
Not at all skilled in business	Very skilled in business	83 [2]	86 [2]	83	86	80 [2]
Very sneaky	Very direct	90 [2]	70 [2]	90	70	80 [2]
Does not know the way of the world	Knows the way of the world	93 [2]	81 [2]	93	81	88 [2]
Feelings easily hurt	Feelings not easily hurt	58 [1]	73 [2]	43	73	63 [2]
Not at all adventurous	Very adventurous	85 [2]	94 [2]	85	94	78 [2]
Has difficulty making decisions	Can make decisions easily	85 [2]	69 [2]	85	69	63 [2]
Cries very easily	Never cries	63 [1]	89 [2]	38	89	80 [2]
Almost never acts as a leader	Almost always acts as a leader	95 [2]	95 [2]	95	94	85 [2]
Not at all self-confident	Very self-confident	92 [2]	95 [2]	92	95	90 [2]
Very uncomfortable about being aggressive	Not at all uncomfortable about being aggressive	56 [1]	70 [2]	56	30	53 [1]
Not at all ambitious	Very ambitious	92 [2]	89 [2]	92	89	88 [2]
Unable to separate feelings from ideas	Easily able to separate feelings from ideas	77 [2]	73 [2]	77	73	73 [2]
Very dependent	Not at all dependent	56 [2]	59 [2]	56	59	60 [2]
Very conceited about appearance	Never conceited about appearance	51 [1]	62 [2]	51	62	58 [2]
	Female valued items					
Very talkative	Not at all talkative	95 [1]	51 [1]	95	51	83 [1]
Very tactful	Very blunt	87 [1]	54 [1]	87	54	73 [1]
Very gentle	Very rough	95 [1]	51 [2]	95	49	78 [1]
Very aware of feelings of others	Not at all aware of feelings of others	100 [1]	51 [2]	100	49	75 [1]
Very religious	Not at all religious	61 [1]	69 [2]	40	69	53 [2]
Very interested in own appearance	Not at all interested in own appearance	90 [1]	68 [1]	90	68	90 [1]
Very neat in habits	Very sloppy in habits	93 [1]	68 [2]	93	32	80 [1]
Very quiet	Very loud	60 [1]	68 [2]	40	68	58 [2]
Very strong need for security	Very little need for security	63 [1]	54 [2]	63	54	58 [1]
Enjoys art and literature very much	Does not enjoy art and literature at all	90 [1]	59 [2]	90	41	73 [1]
Easily expresses tender feelings	Does not express tender feelings at all	92 [1]	59 [2]	92	41	60 [1]

Note. FA = female condition agreement score; MA = male condition agreement score; FH = female condition health score; MH = male condition health score, AH = adult condition health (agreement) score. [1] = majority vote for the feminine pole; [2] = majority vote for the masculine pole.

participants should show a response pattern similar if not the same as the male condition. The adult condition participants did show a similar response pattern to the male condition participants with the masculine pole being chosen as more representative of the healthy adult for 24 of the 27 male valued items. Similarly, the masculine pole was chosen as representative of the healthy adult for only 2 of the 11 female valued items. Table 5 shows the response patterns separated by male and female valued items. These response patterns indicate that the masculine pole of the male valued items seems to be more representative not only of the healthy male and adult, *but of the healthy female as well.* Moreover, the feminine pole of the female valued items appears to be more representative of not only the healthy female, but of the healthy adult as well.

Social desirability and judgements of health. In 1968, college students were utilized to determine which poles of the Sex-Role Stereotype Questionnaire were considered more socially desirable (Rosenkrantz et al., 1968). For 27 items, the male pole was seen as more socially desirable while for 11 items, the female pole was seen as more desirable. In order to test the relationship between social desirability and conceptualizations of health, Broverman et al. (1970) compared the previously established socially desirable poles with the poles selected as most healthy for an adult by their sample of clinicians. The chi-square test result of this relationship was in fact significant at $p < .001$ with 34 of the 38 socially desirable poles being selected by participants. The social desirability and conceptualizations of health hypothesis was also examined in the present study. Table 6 shows that 33 of 38 socially desirable poles were selected by nursing students as healthy for adults X^2 $(1, N = 38) = 41.26, p = .000$. The

Table 5

Response Patterns for the Male and Female Valued Items of the Sex-Role Stereotype Questionnaire

Masculine Pole Chosen as More Representative of Healthy for Male Valued Items

Female Condition	19/27	70.37%
Male Condition	27/27	100%
Adult Condition	24/27	88.89%

Feminine Pole Chosen as More Representative of Healthy for Female Valued Items

Female Condition	11/11	100%
Male Condition	4/11	36.36%
Adult Condition	9/11	81.82%

Table 6

Chi-Square Frequency Analysis of Social Desirability and Pole Chosen as More Representative of the Healthy Adult

Item	Pole elected by majority of participants as healthy for an adult
Socially desirable pole	33
Socially undesirable pole	5

Note. $X^2 = 41.26$, $p < .000$

hypothesis that previously established socially desirable poles would be related to conceptualizations of health thus received some support.

Health scores and male and female valued items. Broverman et al. (1970) tested the hypothesis, based on social desirability, that male health scores would tend to be greater than female health scores on the male valued items while female health scores would tend to be greater than male health scores on the female valued items (health scores being the proportion of participants within the female and male conditions that chose that pole which was marked by the majority of participants in the adult condition as more representative of a healthy person). This hypothesis was tested in the present study using a two-way contingency table. Table 7 shows the chi square results. The chi square statistic was found to be nonsignificant X^2 (1, $N = 38$) = 3.635, $p = .057$. In other words, while 9 of the 11 female valued items did indeed have female health scores that exceeded those of the male health scores, only 14 of the 27 male valued items had male health scores which exceeded those of the female health scores.

Conceptualizations of the healthy adult versus the healthy male and female. It was hypothesized, using the theory of male bias, that conceptualizations of the healthy adult versus the healthy male would not differ significantly, but that conceptualizations of the healthy female would differ from those of the adult. To test this hypothesis, paired samples *t* tests between the adult condition agreement scores and the male and female condition health scores were performed. The results are shown in Table 8. As predicted, the adult and male conceptualizations of health did not differ ($t = 1.238$, $p = .223$). However, conceptualizations of the healthy female also did not differ significantly from those of the healthy adult ($t = -.524$, $p = .604$).

Table 7

Chi-Square Frequency Analysis of Male and Female Valued Items of the Sex-Role Stereotype Questionnaire and High Agreement Scores

Item	Male Agreement Score is Highest
Male Valued Item	14
Female Valued Item	2

Note. $X^2 = 3.635, p = .057$

Table 8

Means, Standard Deviations, and Paired Samples t-test Results for Health Scores by Condition

Health score	*M*	*SD*	*t*	*p*
Female	72.53	22.39		
			-.524	.604
Adult	71.18	12.83		
			1.238	.223
Male	67.63	19.89		

Conceptualizations of Health- Likert Format

In order to investigate the effect of condition (health of women, health of men, health of adults) on scores of the Likert format questionnaire, 38 one-way ANOVAs were conducted. The results are shown in Table 9. Using the Bonferroni method to control for Type I error across multiple analyses, each ANOVA was tested at the .001 level (.05/38). Using this criterion, 10 of the 38 ANOVAs were significant. Post hoc comparisons using the Dunnett's C test were conducted to evaluate pairwise differences among the means of each significant ANOVA. The results of these tests are reported in Table 10. As expected, all but one item (*not at all skilled in business*) exhibited the expected pattern of significantly lower mean scores for the female condition (mean scores leaning towards the feminine pole) and higher mean scores for the male condition (mean scores leaning towards the male pole). Following the theory of male bias, one would expect the male and adult condition means to be similar and nonsignificant. However, contrary to what the theory describes, only two of the ten significant ANOVAs (*very aware of feelings of others* and *easily expresses tender feelings*) exhibited non-significant results in comparing the male and adult condition means. The male and adult condition means of the other eight significant ANOVAs did in fact differ significantly from one another. In fact, 5 of the 10 significant ANOVAs exhibited the exact opposite pattern of responses that one would expect following the theory of male bias with the female and adult conditions means exhibiting nonsignificant differences.

The overall item means are reported in Table 11. Only 1 of the 38 items had a mean score of less than 3 on the Likert scale while only 7 of the 38 items had mean

scores that exceed 5 on the Likert scale. In other words and as predicted, when given more response options, participants' conceptualizations of health were much less stereotypical and extreme and much more within the intermediate range compared to participants who completed the forced choice Sex-Role Stereotype Questionnaire.

Finally, point bi-serial correlations were computed to test the relationship between scores on the forced choice Sex-Role Stereotype Questionnaire and the Likert Sex-Role Stereotype Questionnaire. The results are reported in Table 12. Despite the more average response patterns that were reported in Table 11, all but one of the correlations were significant at the $p < .01$ level.

Table 9

Analyses of Variance for Likert Format Responses and Health Conditions

Source	*df*	*F*	*p*
Item 1	2	.848	.431
Item2	2	5.787	.004 *
Item3	2	6.516	.002 *
Item4	2	5.458	.005 *
Item 5	2	15.954	.000 **
Item 6	2	4.648	.011 *
Item 7	2	20.976	.000 **
Item 8	2	17.789	.000 **
Item 9	2	5.288	.006 *
Item 10	2	2.192	.116
Item 11	2	.292	.747
Item 12	2	14.262	.000 **
Item 13	2	10.885	.000 **
Item 14	2	5.482	.005 *
Item 15	2	2.617	.077
Item 16	2	8.680	.000 **
Item 17	2	4.950	.009 *
Item 18	2	3.233	.043 *
Item 19	2	1.295	.278
Item 20	2	3.581	.031 *

Item 21	2	14.711	.000 **
Item 22	2	5.681	.004 *
Item 23	2	3.354	.038 *
Item 24	2	5.659	.005 *
Item 25	2	1.344	.265
Item 26	2	3.780	.026 *
Item 27	2	2.025	.137
Item 28	2	.071	.932
Item 29	2	25.045	.000 **
Item 30	2	5.698	.004 *
Item 31	2	3.087	.049
Item 32	2	.942	.393
Item 33	2	12.881	.000 **
Item 34	2	.813	.446
Item 35	2	4.376	.015 *
Item 36	2	17.268	.000 **
Item 37	2	1.104	.335
Item 38	2	.167	.847

Note: An asterisk (*) indicates significance at the $p < .05$ level. Two asterisks (**) indicate significance at the $p < .001$ level.

Table 10

Post Hoc Comparisons of Significant ANOVAs using the Bonferroni Method

Item	Condition	*M*	*SD*	Female	Male
5	Female	2.80	1.52		
	Male	4.59	1.46	*	
	Adult	3.78	1.24	*	*
7	Female	3.20	1.47		
	Male	5.15	1.18	*	
	Adult	4.25	1.35	*	*
8	Female	2.05	1.20		
	Male	4.05	1.64	*	
	Adult	3.51	1.75	*	NS
12	Female	4.33	1.31		
	Male	5.41	.82	*	
	Adult	4.27	1.03	NS	*
13	Female	4.60	1.57		
	Male	5.41	1.02	*	
	Adult	4.05	1.28	NS	*
16	Female	5.03	1.29		
	Male	6.05	.92	*	
	Adult	5.22	1.24	NS	*
21	Female	4.95	1.36		
	Male	5.21	1.08	NS	
	Adult	4.46	1.32	NS	*
29	Female	3.53	1.43		
	Male	5.56	1.02	*	
	Adult	4.51	1.34	*	*
33	Female	3.35	1.58		
	Male	4.95	1.62	*	
	Adult	3.49	1.45	NS	*
36	Female	2.33	1.27		
	Male	4.21	1.59	*	
	Adult	3.95	1.75	*	NS

Note: NS indicates non-significant differences between pairs of means, while an asterisk (*) indicates significance at the $p < .001$ level using the Dunnett's C procedure.

Table 11

Overall Sex-Role Stereotype Questionnaire–Likert Format Item Means

Item	N	Minimum	Maximum	*M*	*SD*
Item 1	120	1	7	3.99	1.49
Item 2	120	1	7	3.54	1.54
Item 3	120	2	7	5.31	1.19
Item 4	120	1	7	3.72	1.55
Item 5	120	1	7	3.72	1.58
Item 6	119	1	7	3.15	1.30
Item 7	119	1	7	4.19	1.55
Item 8	120	1	7	3.20	1.75
Item 9	120	1	7	4.20	1.63
Item 10	119	1	7	4.08	1.48
Item 11	120	1	7	4.39	1.45
Item 12	120	2	7	4.66	1.18
Item 13	120	1	7	4.68	1.42
Item 14	119	1	7	3.82	1.64
Item 15	120	1	7	4.93	1.58
Item 16	120	2	7	5.42	1.23
Item 17	120	2	7	5.34	1.32
Item 18	120	1	7	2.83	1.54
Item 19	120	1	7	3.73	1.68
Item 20	120	1	7	4.87	1.29
Item 21	120	1	7	3.46	1.79
Item 22	120	1	7	4.85	1.49
Item 23	120	1	7	5.27	1.33
Item 24	120	1	7	4.23	1.63
Item 25	120	1	7	4.25	1.19
Item 26	120	1	7	4.98	1.15
Item 27	120	1	7	4.94	1.55
Item 28	120	1	7	3.68	1.69
Item 29	120	1	7	4.52	1.52
Item 30	120	2	7	5.36	1.05
Item 31	120	2	7	5.33	1.34
Item 32	120	1	7	4.19	1.56
Item 33	120	1	7	3.92	1.70
Item 34	120	2	7	5.59	1.12
Item 35	120	1	7	4.93	1.46
Item 36	120	1	7	3.49	1.75
Item 37	120	1	7	4.18	1.83
Item 38	120	1	7	4.03	1.67

Scale mean = 4.335

Table 12

Point Bi-Serial Correlations between Sex-Role Stereotype Forced Choice and Likert Responses

	Like1	Like2	Like3	Like4	Like5	Like6	Like7	Like8	Like9	Like10	Like11	Like12
Forced1	.617**											
Forced2		.161										
Forced3			.313**									
Forced4				.428**								
Forced5					.363**							
Forced6						.363**						
Forced7							.491**					
Forced8								.519**				
Forced9									.418**			
Forced10										.550**		
Forced11											.456**	
Forced12												.380**

	Like13	Like14	Like15	Like16	Like17	Like18	Like19	Like20	Like21	Like22	Like23	Like24	Like25
Forced13	.612**												
Forced14		.588**											
Forced15			.441**										
Forced16				.335**									
Forced17					.375**								
Forced18						.499**							
Forced19							.600**						
Forced20								.334**					
Forced21									.581**				
Forced22										.542**			
Forced23											.451**		
Forced24												.513**	
Forced25													.319**

	Like26	Like27	Like28	Like29	Like30	Like31	Like32	Like33	Like34	Like35	Like36	Like37	Like38
Forced26	.612**												
Forced27		.360**											
Forced28			.479**										
Forced29				.549**									
Forced30					.404**								
Forced31						.202*							
Forced32							.467**						
Forced33								.530**					
Forced34									.316**				
Forced35										.413**			
Forced36											.567**		
Forced37												.570**	
Forced38													.370**

Note: One asterisk (*) indicates significance at the $p < .05$ level; two asterisks (**) indicate significance at the $p < .01$ level.

Chapter IV

Discussion

The primary purpose of this study was to test the theory of male bias by examining participants' conceptualizations of illness and their attitudes towards health. Beyond this, this study called into question the current applicability and meaningfulness of Broverman et al.'s (1970) research.

Conceptualizations of Illness

The first three hypotheses were partially supported. Participants did in fact generate different explanations for illness depending on whether women, men or adults were placed at a health disadvantage. Contrary to Benrud's (1998) findings, participants in the female disadvantage condition did not list "Biology" or "Emotions" as the primary explanation for illness but listed "Role expectations" as an explanation for the gender difference more often than expected. Similarly to Benrud's (1998) research, participants in the male disadvantage condition did list "Behaviour" as an explanation for the gender difference more often than expected. Finally, participants in the adult disadvantage condition also listed "Behaviour" as an explanation for the gender difference more often than expected. The difference in response patterns between Benrud's participants and the current participants may be due to the nature of the samples. While Benrud utilized an undergraduate population, this study extended our understanding of health care providers' explanations for illness by utilizing nursing students. The use of nursing students, who theoretically would have a greater understanding of the effects that biological differences would have on the suffering of illness, could explain the modest use of "Biology" as an explanation for illness.

Thus, the suffering of illness in women was attributed more to their evolving and growing role expectations than to any other explanation. The explanation of "Role expectations" is difficult to fully interpret since it is unclear if participants see the changes in role expectations as uncontrollable or controllable. If an illness is perceived as stemming from uncontrollable factors, the focus may be on treatment with little to no focus on prevention. In the present study, the suffering of illness in males and adults was seen as primarily due to their own behaviour. Consequently, men and adults were seen as being much more responsible for their own illnesses. If an illness is perceived as stemming from controllable factors, the focus may be on prevention with little to no focus placed on treatment. Individuals who are falsely led to believe that they are either far more or less responsible for their illness than is actually realistic may potentially experience negative consequences and health implications.

Conceptualizations of Health

The fourth hypothesis, that when presented in dichotomous form, Broverman's items would elicit a stereotypical response pattern was partially supported. While the masculine pole was chosen as more representative of the healthy male for the male valued items 100% of the time, the female valued pole was not always chosen as more representative of the healthy female. In fact, the *masculine* pole was chosen as more representative of the healthy female for 19 of the 27 male valued items. These results indicate strongly and clearly that the previously established male valued items (Rosenkrantz, et al., 1968) are no longer only seen as exclusively representative of the healthy male but as representative of the healthy female as well. This significant violation of the historical female norm is critical to our understanding of the current applicability of Broverman et al.'s 1970 research results.

While the feminine pole was chosen as more representative of the healthy female for the female valued items 100% of the time, the male valued pole was not always chosen as more representative of the healthy male. The feminine pole was chosen as more representative of the healthy male for three of the female valued items. In other words, while the violation of the male norm was not as great, some attributions that were previously established (Rosenkrantz, et al., 1968) as female valued are currently being chosen as also representative of the healthy male.

Following the theory of male bias, and based on Broverman et al.'s (1970) results, it was expected that participants in the adult condition would elicit a response pattern that was similar to that of the response pattern of participants in the male condition. As expected, participants in the adult condition chose the masculine pole as more representative of the healthy adult for 24 of the 27 male valued items but only 2 of the 11 female valued items. When a similar result was initially obtained with Broverman et al.'s (1970) research, it was highly controversial and meaningful because the adult and male conditions, being similar, differed significantly from that of the female condition. The similarities between the male and adult conditions found in the present study are not nearly as consequential because of the gender norm violations that were found in the current female condition. Participants in the female condition choosing the *masculine* pole as more representative of the healthy female for 19 of the 27 male valued items shows a clear violation of the previously established gender norms.

Broverman et al.'s (1970) results showed a much clearer distinction between healthy sex typed behaviours for men and women. Furthermore, the data suggested a very negative assessment of women in that the healthy woman differed from the healthy man by being more submissive, less independent, more excitable in minor crises, more

emotional and more conceited about their appearance (Broverman et al., 1970). The current results are remarkably different. Not only was a significant number of the more positive traits chosen as representative of healthy for *both* men and women but the violation of previously established sex typed traits is evident for both women and men.

The violation of and changes in gender norms can also be inferred by examining the agreement means. The extent of agreement over what constitutes healthy men, women and adults, appears to have diminished over the years from the highest agreement mean score of 86.6% in 1970 (Broverman, et al., 1970) to the highest agreement mean score of only 77.5% in 2002. The diminishing agreement means may be an indication of changing gender norms and less rigid gender role delineations. Perhaps an effect of utilizing an overwhelmingly female population, the greatest agreement score was obtained for what constitutes the healthy female. Comparatively, Broverman et al.'s (1970) agreement results were most *uncertain* for what constituted the healthy female.

These results demonstrate and support previous literature which suggests that while the attitudes towards and gender norms attributed to women are continuing to evolve, the evolution of the male gender norm has been slower (Levine & Pittinsky, 1997; Loo, 1998; Risman & Johnson-Sumerford, 1998; Statistics Canada, 1999; U.S. Bureau of the Census, 1999 as cited in Auster, 2000). This study's results extend our knowledge of current attributions about men and women and demonstrate that the declarations made about clinicians' judgements of mental health in 1970 were based on a gendered environment that may no longer exist in its original form as it did in 1970.

As found by Broverman et al. (1970), using criteria established by Rosenkrantz et al. (1968), previously established norms of social desirability were related to concepts of

mental health in the present study. Thirty-three of the 38 previously established socially desirable poles were selected as representative of healthy for adults. However, these results need to be interpreted with caution. The same methodological theory underlying the need to give participants more response options for the items of the Sex-Role Stereotype Questionnaire can be applied here. Firstly, the social desirability of the poles was selected by participants in 1968. The possibility that opinions about what characterizations are considered socially desirable have evolved and/or changed in the last 34 years is great and already seems supported by the current agreement means data. However, stereotypes are salient, particularly those that have had over 30 years to become part of the social psyche. Consequently, when participants in the year 2002 are given a dichotomous item and are forced to choose the pole that represents the more healthy adult, the likelihood that that participant will choose the previously established socially desirable pole is great. One can never know for certain if the participants who established the socially desirable poles in 1968 would have selected such extreme responses had more response options been given. Thus, it is possible that these significant results are more a function of Rosenkrantz et al.'s (1968) forced choice methodology than participants' current beliefs about socially desirable behaviours.

It is important to note the content of the five socially undesirable poles that were chosen as healthy for an adult. *Not at all aggressive*, *Does not hide emotions at all*, *Very religious*, *Very quiet*, and *Very uncomfortable about being aggressive* were all previously established as socially undesirable for adults yet were chosen by participants of the present study as indicative of the healthy adult. Presently, it is difficult to understand how these five poles would have ever been chosen a socially undesirable. Interestingly, all five poles are feminine and therefore indicative of the violation of the feminine gender

role. Broverman et al.'s (1970) results showed a very clear disapproval of these feminine attributions being representative of healthy for the male or the adult. The current results help to strengthen the theory that what is considered healthy behaviour may have evolved since the time of Broverman et al.'s (1970) research.

The proportion of participants within the female and male conditions that chose that pole which was marked by the majority of participants in the adult condition as more representative of a healthy person was utilized as the health score. The results for the sixth and seventh hypotheses, that masculinity health scores would be greater than the femininity health scores on the male-valued items and that femininity healthy scores would be greater than the masculinity health scores on the female-valued items were not statistically significant. While 9 of the 11 female valued items did indeed have female health scores that exceeded those of the male health scores, only 14 of the 27 male valued items had male health scores which exceeded those of the female health scores. In other words, 9 of the 11 female valued items were seen as more healthy for women than for men but only 14 of the 27 male valued items were seen as more healthy for men than for women. These nonsignificant results suggest again that a much stronger degree of similarity exists between what is considered healthy behaviour for a man and a woman than was previously thought.

The present results indicate that conceptualizations of health for women, men and adults do not differ significantly. The theory behind calculating and analyzing the health scores was based on a "standard of health" theory which suggests that what was selected as healthy for an adult (gender unspecified) should also be chosen as healthy for a male or a female (Broverman et al., 1970). As expected, the conceptualizations of health for adults and males did not differ significantly. *However, the conceptualizations of health*

for adults and females also did not differ. Broverman et al.'s (1970) results allowed them to declare that a double standard of health existed in that the general standard of health was really only applied to men and that women were seen as significantly less healthy by reference to the general standard. The current results suggest that a much more general standard of health may actually exist and therefore, cast doubt on the current viability of Broverman et al.'s theory of male bias.

The "theory" behind adding a Likert format of the Sex-Role Stereotype Questionnaire was based primarily on methodological concerns. Would Broverman et al. (1970) have found more balanced results had they replaced the forced choice questionnaire with a Likert format questionnaire? This speculation is debatable in that previous researchers using a Likert form of the questionnaire have found some degree of sex-role stereotyping (Aslin, 1975; Delk & Ryan, 1975). Despite the inconsistencies in the literature, the overall scale mean of the Broverman items when given in the Likert format was M= 4.335. Consequently, when given more response options, participants exhibited a much more equitable and balanced view of what behaviours are considered healthy for a man and a woman compared to the extreme views of health that were obtained by the forced choice methodology.

Certain items representing more strongly held and salient stereotypes showed more extreme response patterns. Seven of the Broverman items exhibited more extreme response patterns. *Not at all independent-Very independent*, *Not at all competitive-Very competitive*, *Very illogical-Very logical*, *Does not know the way of the world-Knows the way of the world*, *Almost never acts as a leader-Almost always acts as a leader*, *Not at all self-confident-Very self-confident*, and *Not at all ambitious-Very ambitious* all exhibited mean response patterns of over 5 on the Likert scale (scores closer to the masculine pole).

One item, *Very interested in own appearance-Not at all interested in own appearance* exhibited a mean response pattern of under 3 on the Likert scale (score closer to the feminine pole). These results were further supported with the point bi-serial correlations. All but one item indicated a significant relationship between the pole (masculine or feminine) chosen as more representative of healthy and the Likert mean score obtained as more representative of healthy. These results seem to suggest and reinforce the idea that while our attitudes about what is considered healthy behaviour for men and women are changing, some stereotypes are more difficult to overcome because they may be more strongly reinforced within the culture (Blustain, 2000).

Interestingly, one of the strengths of this study could also be interpreted as a weakness. While the use of nursing students was important to our understanding of the theory of male bias in our future health care providers, it may restrict the generalizability of the current results. The use of nursing student participants further inhibited generalizability because the population was predominantly female. Thus, one could argue that the present study tested the theory of male bias in women only. Would the overwhelmingly more balanced and non-stereotypical results found in the present study have been obtained with male nursing students? Further investigation using male nursing students is needed in order to further disentangle the theory of male bias concept.

Chapter V

Conclusion

Participants did generate different explanations for illness in men and women. It would be easy to argue that the explanations generated for one sex affect their health more negatively than those generated for the other sex. However, the health of both men and women is compromised if health care providers are associating certain explanations for illness with a certain sex. As previously discussed, different explanations for illness could lead to different avenues for treatment. Health care providers must exhibit a delicate balance between being aware of the biological differences related to men and women and treating each patient as an individual and not only a gender.

Two explanations in understanding the results of the Broverman et al. (1970) replication were offered. Firstly, we cannot ignore the methodological implications. Had Broverman et al. (1970) used a continuous instrument, would they have obtained results similar to those found in the present study with the Likert instrument? While there is evidence to support sex-role stereotyping *despite* the use of Likert or continuous instruments (e.g. Aslin, 1975, Maslin & Davis, 1975) it is most likely that the forced choice/Likert methodological explanation is valid but works in conjunction with the evolving gender norms explanation. The results of the present study could be interpreted as indicative of changes in attitudes towards men and women. Not only were Broverman's et al. (1970) results not replicated when presented in the original forced choice format, but participants exhibited a much wider range of behavioural representations of health.

In other words, it is erroneous to continue to reference Broverman et al. (1970) as "proof" that a sex bias in conceptualizations of health exists. The results of this study

are critical to our awareness and understanding of the possible dangers of sex-role stereotyping in judgments of health. It is irresponsible of researchers to continue to cite research from 32 years ago and ignore both the methodological and conceptual issues that were raised in this and other studies (Philips & Gilroy, 1985; Widiger & Settle, 1987; Whiltley, 1979). The present study adds to the inconsistencies about the theory of male bias that already exist in the literature and calls into question the current applicability of Broverman et al.'s (1970) research.

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Appendix A

Research Consent Form

Orientations Toward Adjustment and Health Issues

You are asked to participate in a research study conducted by Chantal Thorn, Dr. Stewart Page, Dr. Lafreniere and Dr. Carty from the departments of Psychology and Nursing at the University of Windsor. If you have any questions or concerns about the research, please feel free to contact Chantal Thorn at (510) 253-3000, #2256.

I am a master's degree candidate in the Applied Social Psychology program at the University of Windsor. As part of my program requirements, I have designed and am currently conducting research on conceptualizations of illness and health.

You will, in this study, be asked to complete a brief questionnaire concerning your personal conceptualizations for certain acute and chronic illnesses as well as your orientations toward health. You will also be asked for some demographic information (gender, age, etc.). Your participation will require approximately 20 minutes of your time. There are no known risks of any sort associated with your participation in this research and you will not receive payment for participation.

All records of participation and data will be kept strictly confidential and completely anonymous. The results from this study will be reported in a written research thesis and an oral defence of my thesis. Information about the project will not be made public in any way that identifies individual participants.

Participation is completely voluntary. It may be discontinued at any time for any reason without explanation and without penalty. I will be present to answer any questions during your time of participation.

Any concerns about your participation experience in this research may be reported to the University of Windsor Research Ethics Board at (519) 253-3000, #3916.

Research findings will be made available to those interested by October, 2002.

"I have read the above form, understand the information read, understand that I can ask questions or withdraw at any time. I consent to participate in today's research study and have been given a copy of this form."

_____

Participant's Name

_____ _____

Participant's Signature Date

Appendix B

Spontaneous Attribution Measure

Please provide us with some demographic information before completing the questionnaire.

Sex: **Male** **Age:**_____
Female

Year of study: **First** **Ethnic Background:**_____
Second
Third
Fourth
Fifth and over

Recent research has found that the prevalence rates for certain conditions, both chronic and acute, have significantly increased more for women than for men.

(1) Many females have a higher incidence rate of **acute** (continuing for a short time) conditions than males even when gender specific conditions such as disorders of menstruation and pregnancy are excluded (i.e. vomiting).

(2) Many females also have more **chronic** (continuing a long time) conditions than males when gender specific conditions are excluded (i.e. chronic constipation). In fact, females had substantially higher prevalence rates than males for 71% of the non-gender-specific conditions listed in the most recent National Health Interview Survey.

Some of the acute and chronic conditions for which the prevalence rates have significantly increased for women but not for men are:

intestinal virus	acute bronchitis
chronic sinusitis	tachycardia or rapid heart
arthritis	migraine headache
indigestion	vomiting
nausea	bladder disorders
spastic colon	trouble with bunions
bone or cartilage disorders	frequent constipation
thyroid disorders	pneumonia

In your own words, please give your opinion on the reasons why the prevalence rates of both chronic and acute conditions have significantly increased for women and not for men. Please list as many reasons as you can think of.

When you are done listing your reasons, rank order them from most to least important (1 being the most important).

Finally, assign a percentage from 1% to 100% to **each** of your reasons so that together, they total **100%**.

REASON	RANK ORDER	PERCENTAGE
1.		
2.		
3.		
4.		
5.		
6.		

Appendix C

Stereotype Questionnaire (Forced Choice Format)

Now, think of normal, adult women and then indicate which item, **if you were forced to choose**, corresponds most to that of a mature, healthy, socially competent adult woman. Judgements are difficult to make. Please circle the first thought that comes to mind.

1. Not at all aggressive	Very aggressive
2. Very talkative	Not at all talkative
3. Not at all independent	Very independent
4. Very tactful	Very blunt
5. Very emotional	Not at all emotional
6. Very gentle	Very rough
7. Does not hide emotions at all	Almost always hides emotions
8. Very aware of feelings of others	Not at all aware of feelings of others
9. Very subjective	Very objective
10. Very religious	Not at all religious
11. Very easily influenced	Not at all easily influenced
12. Very submissive	Very dominant
13. Dislikes math and science very much	Likes math and science very much

14. Very excitable in a minor crisis	Not at all excitable in a minor crisis
15. Very passive	Very active
16. Not at all competitive	Very competitive
17. Very illogical	Very logical
18. Very interested in own appearance	Not at all interested in own appearance
19. Very home oriented	Very wordly
20. Not at all skilled in business	Very skilled in business
21. Very neat in habits	Very sloppy in habits
22. Very sneaky	Very direct
23. Does not know the way of the world	Knows the way of the world
24. Feelings easily hurt	Feelings not easily hurt
25. Very quiet	Very loud
26. Not at all adventurous	Very adventurous
27. Has difficulty making decisions	Can make decisions easily
28. Very strong need for security	Very little need for security
29. Cries very easily	Never cries

30. Almost never acts as a leader	Almost always acts as a leader
31. Not at all self-confident	Very self-confident
32. Very uncomfortable about being aggressive	Not at all uncomfortable about being aggressive
33. Enjoys art and literature very much	Does not enjoy art and literature at all
34. Not at all ambitious	Very ambitious
35. Unable to separate feelings from ideas	Easily able to separate feelings from ideas
36. Easily expresses tender feelings	Does not express tender feelings at all
37. Very dependent	Not at all dependent
38. Very conceited about appearance	Never conceited about appearance

Appendix D

Stereotype Questionnaire (Likert Format)

Think of normal, adult women and then indicate on the scale, which number corresponds most to that of a mature, healthy, socially competent adult female. Please, do not use the middle point unless it absolutely represents your personal feelings about adult women. Judgements are difficult to make. Please circle the first thought that comes to mind.

1	2	3	4	5	6	7
Not at all aggressive						Very aggressive
Very talkative						Not at all talkative
Not at all independent						Very independent
Very tactful						Very blunt
Very emotional						Not at all emotional
Very gentle						Very rough
Does not hide emotions at all						Almost always hides emotions
Very aware of feelings of others						Not at all aware of feelings of others
Very subjective						Very objective
Very religious						Not at all religious

1	2	3	4	5	6	7
Very easily influenced						Not at all easily influenced
Very submissive						Very dominant
Dislikes math and science very much						Likes math and science very much
Very excitable in a minor crisis						Not at all excitable in a minor crisis
Very passive						Very active
Not at all competitive						Very competitive
Very illogical						Very logical
Very interested in own appearance						Not at all interested in own appearance
Very home oriented						Very worldly
Not at all skilled in business						Very skilled in business
Very neat in habits						Very sloppy in habits

1	2	3	4	5	6	7
Very sneaky						Very direct
Does not know the way of the world						Knows the way of the world
Feelings easily hurt						Feelings not easily hurt
Very quiet						Very loud
Not at all adventurous						Very adventurous
Has difficulty making decisions						Can make decisions easily
Very strong need for security						Very little need for security
Cries very easily						Never cries
Almost never acts as a leader						Almost always acts as a leader
Not at all self-confident						Very self-confident
Very uncomfortable about being aggressive						Not at all uncomfortable about being aggressive

1	2	3	4	5	6	7
Enjoys art and literature very much						Does not enjoy art and literature at all
1	2	3	4	5	6	7
Not at all ambitious						Very ambitious
1	2	3	4	5	6	7
Unable to separate feelings from ideas						Easily able to separate feelings from ideas
1	2	3	4	5	6	7
Easily expresses tender feelings						Does not express tender feelings at all
1	2	3	4	5	6	7
Very dependent						Not at all dependent
1	2	3	4	5	6	7
Very conceited about appearance						Never conceited about appearance

Appendix E

Debriefing Form

My name is Chantal Thorn and I am currently a 2nd year Applied Social Psychology graduate student. In order to fulfill my program requirements, I have designed and am conducting research on the theory of male bias and its association with conceptualizations of health and illness. My study tests the theory of male bias two ways: by testing participants' attitudes towards health and their conceptualizations of illness.

Previous research has shown using an undergraduate population that when females were placed at a health disadvantage (i.e. suffering from **more** chronic and acute non-gender-specific illnesses), the gender differences in illness were attributed primarily to relatively uncontrollable, constitutional factors (i.e. biology, emotions) but to relatively controllable and nonconstitutional factors (i.e. behaviours) when males were placed at the health disadvantage. I wanted to investigate these findings using a Nursing student population in order to explore any conceptual differences. A "gender unspecified" condition was also added to further test the theory of male bias.

Also, in the early 1970's research results showed that the normal healthy adult male was perceived as having more positive characteristics than the normal healthy adult female by both male and female clinicians. Furthermore, when gender was left unspecified, the normal healthy adult male was seen as virtually identical to the normal healthy adult. The original questionnaire items forced people to chose between two extremes. In order to have a current reassessment of the idea of male bias while establishing participants' true beliefs (and **not** only stereotypes) about men and women, you thus responded to both the original forced choice as well as a Likert format questionnaire in order to investigate if, when given more response options, the earlier results would be replicated.

The results of this inquiry are important because I believe the possible implications for the health care system and users of the health care system are great. Please contact me at 519-253-3000, #2256 to request the results of my research or if you have any questions. Research findings will be made available to those interested by October, 2002.

Thank you again for your participation.

Chantal Thorn

VITA AUCTORIS

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