

SEXUAL ATTRACTIVENESS, SEXUAL SATISFACTION AND PSYCHOLOGICAL  
DISTRESS IN LIUZHOU, CHINA

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## **ABSTRACT**

**Qianlai Luo: Sexual attractiveness, sexual satisfaction and psychological distress  
in Liuzhou, China  
(Under the direction of Victor J. Schoenbach)**

We hypothesized that sexual satisfaction and psychological distress are both related to self-rated sexual attractiveness, but in different ways: on the one hand, greater sexual satisfaction is associated with greater sexual attractiveness; on the other hand, higher psychological distress is associated with basing one's sexual attractiveness primarily on body image-oriented features ("face" and "body type"). We analyzed cross-sectional household survey data from Liuzhou city in southern China with a series of regression analyses. We found: 1. Self-rated sexual attractiveness was associated more strongly with women's emotional sexual satisfaction (ESS) (prevalence ratio [PR] 1.34, 95% confidence interval [CI]: 0.93-1.93) and especially physical sexual satisfaction (PSS) (PR 1.81, 95% CI: 1.11-2.94) than with men's ESS (PR 0.93 95% CI: 0.64-1.35) and PSS (PR 1.21, 95% CI: 0.86-1.70). For men, the associations of partner's attractiveness with ESS (PR 2.22, 95% CI: 1.85-2.67) and with PSS (PR 2.30, 95% CI: 1.70-3.09) were both stronger than the corresponding associations for women (PR 0.96, 95% CI: 0.57-1.61 for ESS and 1.33, 95% CI: 0.67-2.63 for PSS). Similarly, the associations of the feeling that one's partner takes enough care of one with ESS (PR 3.69, 95% CI: 1.77-7.70) and with PSS (PR 2.37, 95% CI: 1.13-4.95) were stronger for men than the corresponding associations for women (PR 1.59, 95% CI: 0.79-3.20 for ESS, and PR 1.44, 95% CI: 0.74-2.80 for PSS). 2. Compared to women who rated themselves as sexually attractive with their most attractive aspect a non-body-

image oriented feature: (1) women who self-rated attractive but ranked “face” or “body type” as their most attractive feature had a 0.91(95% CI: 0.00-1.82) point higher psychological distress score (PDS); (2) women who self-rated unattractive but ranked a body-image aspect as their most attractive feature had a 0.79 (95% CI: 0.21-1.37) point higher PDS; and (3) women who considered themselves “not attractive in any aspect” had a 0.88 (95% CI: 0.10-1.66) point higher PDS. Our study results highlighted the health impact of self-rated sexual attractiveness. Awareness of how perceptions of one’s sexual attractiveness relate to sexual wellbeing and psychological health will present additional opportunities for improving quality of life in China.

To my father, my mother, and my aunt.

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## TABLE OF CONTENTS

LIST OF TABLES .....	xi
LIST OF FIGURES .....	xii
LIST OF ABBREVIATIONS .....	xiii
CHAPTER 1 INTRODUCTION .....	1
REFERENCES .....	3
CHAPTER 2 LITERATURE REVIEW .....	4
2.1 Sexual Health, sexual satisfaction and public health .....	4
2.2 Sexual attractiveness .....	6
2.3 Psychological distress .....	7
2.4 The double role of sexual attractiveness in sexual well-being and in mental health .....	8
2.5 Sexual attractiveness and its relationship to sexual satisfaction .....	9
2.6 Self-rated sexual attractiveness and its relationship to psychological distress .....	9
2.7 Society, sexuality and sexual health in China .....	10
2.8 Self-rated sexual attractiveness, sexual satisfaction and psychological distress in China ..	12
REFERENCES .....	13
CHAPTER 3 SPECIFIC AIMS, HYPOTHESES, AND SIGNIFICANCE .....	20
3.1 Specific Aims .....	20
3.2 Hypotheses .....	21



3.3 Significance .....	21
REFERENCES .....	23
CHAPTER 4 STUDY DESIGN & METHOD .....	24
4.1 Study Setting .....	24
4.2 Study Population .....	24
4.3 Measures.....	25
4.4 Statistical Analysis .....	27
REFERENCES .....	31
CHAPTER 5 AIM 1.....	33
INTRODUCTION.....	33
METHOD .....	35
RESULTS.....	38
DISCUSSION .....	40
CONCLUSIONS.....	43
REFERENCES.....	48
CHAPTER 6 AIM 2.....	52
INTRODUCTION.....	52
METHOD .....	54
RESULTS.....	58
DISCUSSION .....	60
REFERENCES.....	67
CHAPTER 7 DISCUSSION.....	71
Aim 1 Sexual Attractiveness and Sexual Satisfaction.....	71

Aim 2 Attractive Aspect and Psychological Distress.....	72
Limitations .....	72
Implications .....	73
Future Directions for Research.....	75
REFERENCES .....	77

## LIST OF TABLES

Table 5.1 Descriptive Statistics for Urban Chinese Men and Women Study Participants Aged 18-61 Years Who were Married or Had a Steady Sexual Partner in the Past 6 Months, in Liuzhou City, Guangxi Province, China, 2008.....	44
Table 5.2 Bivariate Analyses of Sexual Satisfaction for Urban Chinese Men and Women Study Participants Aged 18-61 Years Who Were Married or Had a Steady Sexual Partner in the Past 6 Months in Liuzhou City, Guangxi Province, China, 2008.....	45
Table 5.3 Multivariable Analyses of Sexual Satisfaction for Urban Chinese Men and Women Study Participants Aged 18-61 Years Who Were Married or Had a Steady Sexual Partner in the Past 6 Months in Liuzhou City, Guangxi Province, China, 2008.....	46
Table 5.4 Results of Associations between Sexual Attractiveness, Partner's Care and Sexual Satisfaction in Multivariable Analyses for Urban Chinese Men and Women Study Participants Aged 18-61 Years Who Were Married or Had a Steady Sexual Partner in the Past 6 Months in Liuzhou City, Guangxi province, China, 2008.....	47
Table 6.1 Descriptive Statistics for Urban Chinese Men and Women Study Participants Aged 18-61 Years in Liuzhou City, Guangxi Province, China, 2008.....	65
Table 6.2 Distribution of Psychological Distress Score by Attractiveness and Attractive Aspects for Urban Chinese Men and Women Study Participants Aged 18-61 Years in Liuzhou City, Guangxi province, China, 2008 .....	66
Table 6.3 Multivariable Analyses of Psychological Distress for Urban Chinese Men and Women Study Participants Aged 18-61 Years in Liuzhou City, Guangxi province, China, 2008.....	67

## LIST OF FIGURES

Figure 6.1 Distribution of self-rated 4-item Zung scale scores among women by Self-reported Attractive Features and Attractive Aspects, Liuzhou City, Guangxi province, China.....	64
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## **LIST OF ABBREVIATIONS**

ACASI	Audio Computer-Assisted Self Interview
BMI	Body Mass Index
CHFLS	Chinese Health and Family Life Survey
CI	Confidence Interval
ESS	Emotional Sexual Satisfaction
PSS	Physical Sexual Satisfaction
PR	Prevalence Ratio
PDS	Psychological Distress Scale

## **CHAPTER 1 INTRODUCTION**

A movement toward “sexual health” has taken place in the field of public health in recent decades. The movement is characterized by a sustained effort toward more positive approaches to sexuality and sexual relationships, and toward the rights and ability to express one’s sexuality free from risk of disease, unwanted pregnancy, coercion, and violence<sup>1, 2</sup>. This movement is evidenced by proliferation of discourses on sexual rights, including rights to sexual pleasure, and by pleasure-centered sexual health promotion in public health campaign<sup>3, 4</sup>. Despite this trend, strikingly little public health research has focused on sexual well-being outcomes<sup>5</sup>.

Sexuality is deeply woven into human existence. The correlates and sequelae of sexual attractiveness have been of interest to sociologists, psychologists, evolutionary biologists, and cultural anthropologists, and have been a central focus of marketing campaigns in our modern society. Sexual attractiveness is often conceptualized in two primary ways. In the first, sexual attractiveness is a set of physical characteristics that influences how people are evaluated by others. These characteristics influence how people who possess them are treated by others. A considerable body of research concerns the assessment of sexual attractiveness characteristics of men and women from different cultural and social contexts, and how those characteristics affect men’s and women’s social experiences<sup>6</sup>. In the second conceptualization, sexual attractiveness is part of an individual’s self-concept, as illustrated in the literature on body-image disturbances such as depression, eating disorders, and other forms of psychological (mal)-adjustment<sup>7-9</sup>.

As the body of research grows, many questions – such as what set of qualities are labeled as sexually “attractive”, the relative importance men and women place on them, and in what way rating of sexual attractiveness could affect sexual well-being and mental health – remain largely unexplored in the literature<sup>10, 11</sup>. This dissertation uses data from a survey conducted in an urban population in southern China to explore ways that sexual attractiveness, a woman’s conceptualization of her attractiveness, and the perception of one’s sexual partner may be related to both sexual satisfaction and psychological distress, as well as how these relationships may differ between men and women. By tapping into the construct of sexual attractiveness, this study raises awareness of how assessments of one’s sexual attractiveness relate to sexual wellbeing and mental health and thus sheds light on strategies to improve quality of life for men and women.

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## **CHAPTER 2 LITERATURE REVIEW**

### **2.1 Sexual Health, sexual satisfaction and public health**

#### *2.1.1 Sexual health*

For most of the 20<sup>th</sup> century, studies on human sexuality were relegated to the realm of biomedical sciences, when reproductive health and population control were the focus of research<sup>1</sup>. When sexual health first appeared in a World Health Organization (WHO) document, in 1975, its treatment introduced a new concept of sexuality based on acknowledging the positive nature of non-reproductive sexual activity<sup>2</sup>. In that document, sexual health was defined as: “the integration of somatic, emotional, intellectual, and social aspects of sexual being, in ways that are positively enriching and that enhance personality, communication and love. ...” The definition and understanding of sexual health has evolved since then and now encompasses mental health, communication, responsibility, and a positive and respectful approach to sexual relationships<sup>1, 3, 4</sup>. In addition to changing over time, the meaning of sexual health also varies depending on the national, political, and cultural context<sup>5</sup>.

#### *2.1.2 Sexual satisfaction and its public health importance*

In view of the increasing recognition that sexuality in contemporary society serves major recreation and communication functions, and of the need for a life course approach which also includes the sexual health needs of people outside the reproductive age range, public health research and practice must adapt and frame sexual health in a broader perspective, and routinely

incorporate non-reproductive aspects of sexuality, such as sexual violence, pleasure, and satisfaction<sup>6</sup>.

Sexual satisfaction has been defined as the affective response arising from one's evaluation of his or her sexual relationships<sup>7</sup>. Research on sexual satisfaction has grown very quickly in the sociology, economics, and more recently, public health literatures. Sexual satisfaction is important to public health for several reasons. First, sexual satisfaction as, by definition, a key component of sexual health, is important as a health outcome in its own right<sup>8</sup>. Second, goals relating to sexual satisfaction shape both risk-taking and adoption of risk-reduction practices, such as use of condoms and effective contraceptives<sup>9, 10</sup>. Third, a deficit in sexual satisfaction is a strong motivation for initiating extra-marital relationships and other concurrent sexual partnerships, thereby increasing population dissemination of sexually transmitted infections<sup>11</sup>. Fourth, satisfaction with one's sexual life indicates the absence of coercion and sexual violence. Last, sexual satisfaction is important to personal and relationship happiness, which promotes physical and mental health<sup>12, 13</sup>.

Women tend to report a level of sexual satisfaction equal to or slightly higher than that reported by men<sup>14-16</sup>. In China, however, women tend to report lower sexual satisfaction<sup>17</sup>. Recent critical work has argued, though, that women may hold lower expectations for sexual satisfaction and therefore report may have a greater deficit in sexual satisfaction than they report<sup>14</sup>. Similarly, there may also be cultural influences that affect women's reporting of sexual well-being.

## 2.2 Sexual attractiveness

Attractiveness is the power to evoke interest. Repeatedly, researchers have found high agreement of inter-rater assessment of sexual attractiveness<sup>18, 19</sup>. However, questions such as what set of properties are labeled as sexually “attractive”, the ranking of sexual attractiveness, and the social production of sexual attractiveness<sup>20</sup> are largely unexplored in the literature.

Previously, most sociological theorists relied on market metaphors to explain the logic of sexual actions, such as in the marriage “market,” where men and women negotiate their sexual relationship with various resources to be bargained<sup>21</sup>. However, the market perspective has not proved useful for generating research ideas and facilitating discussions, because in the market perspective all desires are “unfathomable, idiosyncratic, exogenous yet totally convertible”<sup>20</sup>. Recent developments in social theories of sexual desirability center on the question of the social organization of sexual desiring. These developments may be able to remedy major theoretical inadequacies of market theories used previously, facilitating investigation of empirical and historical questions that were previously difficult to study. (For a fuller treatment of the topic of sexual field and sexual stratification theories, see the article by John Martin *et al.* <sup>20</sup>).

### 2.2.1 Sexual attractiveness as sexual capital

The recent developments in social theories on sexual desirability and sexual actions rely on the concept of the sexual field, with an associated concept of sexual capital (based on Pierre Bourdieu’s idea of fields and concept of capital)<sup>20, 22-24</sup>. A “sexual field” is a social setting in which individuals seek intimate partners and compete for sexual status. “Sexual capital” refers to a value attached to sexual desirability and sexual attractiveness. One can attempt to determine the position of sexual capital on a general dimension. In addition, a closer examination of what

particular persons find attractive indicates that distribution of sexual capital has qualitative variations<sup>25</sup>. For example, Bourdieu pointed out there can be two states of capital, as objectified in institutions (the field) and as incorporated in the body. The full externalization of sexual capital is akin to social capital<sup>26</sup>; the full internalization of sexual capital is entirely a matter of the body, its “bearings” and “active conditions”<sup>20</sup>.

### *2.2.2 Difference between men’s and women’s assessment of sexual attractiveness*

Men and women differ in their assessment of and criteria for sexual attractiveness<sup>19, 27-29</sup>. Evolutionary psychology maintains that while men’s assessment of women’s sexual attractiveness is determined more by observable, physical attributes, women’s assessment of male sexual attractiveness is mostly influenced by (1) perceived ability of the potential partner, such as his social status, ambition and potential; (2) the partner’s potential interest in them<sup>28, 30</sup>. Socio-cultural studies consider these differences as deriving from the interaction between the physical specialization of the sexes, and the economic and social structural aspects of societies<sup>29</sup>. The socio-cultural approach has been criticized, however, by feminist and gender studies<sup>31</sup>. In light of these theoretical frameworks on gender differences, it is important to conduct separate and comparative analyses on how sexual attractiveness is related to sexual and mental health of men and women.

## **2.3 Psychological distress**

Mental disorders are leading causes of disability worldwide<sup>32</sup>. Psychological distress is defined as *a state of emotional suffering characterized by symptoms of depression and anxiety* sometimes accompanied by somatic symptoms<sup>33</sup>. Psychological distress is widely used as an indicator of the mental health of the population in public health and in epidemiological studies<sup>33</sup>.

Prevalence of psychological distress ranges between 5% and 30% in the general population<sup>34-36</sup> and can be higher in subpopulations such as immigrants and refugees<sup>37, 38</sup>. There are widespread gender differences and variation over the lifespan in prevalence of psychological distress<sup>33, 39</sup>.

Epidemiological explanations for psychological distress stem from essentially two models: the stress-distress model and the role-identity model<sup>33</sup>. The stress-distress model posits that stressful events and life conditions compromise physical and mental health, and the inability to cope effectively will result in negative health impacts. The role-identity model states that lack of valued social roles deprives individuals of social identity, putting people at greater risk for psychological distress<sup>20, 33, 40-42</sup>.

## **2.4 The double role of sexual attractiveness in sexual well-being and in mental health**

Theories on sexual capital suggest that more sexual capital may be associated with more social and economic benefit<sup>23</sup>. Sexological theory holds that a man's experience is dominated by seeking sexual pleasure, while a woman's is dominated by a sense of being desired and a sense of emotional intimacy, both of which are made possible by her sense of being in control<sup>43</sup>. These theories lead to our hypothesis that: (1) more sexual capital is associated with greater sexual satisfaction; (2) the strength and nature of the association differ between men and women. Specifically, women's sexual attractiveness may play a more important role in both men's and women's sexual satisfaction.

Although the literature often equates sexual attractiveness with physical attractiveness<sup>17, 44, 45</sup>, sexual attractiveness is a broader concept<sup>46</sup>. In addition to physical attractiveness, socially valued characteristics such as intelligence, charm, humor, and athletic ability all contribute to

evaluation of sexual attractiveness<sup>47-49</sup>. Sexual attractiveness plays an important role in women's decision-making. For example, it has been cited as one of the major reasons why women desire to conform to "the thin ideal"<sup>50</sup>.

Objectification theory posits that girls and women are typically acculturated to internalize an observer's perspective as a primary view of their physical selves, which leads to constant body monitoring, and makes them more vulnerable to an array of mental health problems<sup>51</sup>.

## **2.5 Sexual attractiveness and its relationship to sexual satisfaction**

Several studies have noted an association between rating oneself as more attractive and greater sexual satisfaction<sup>52-55</sup>. These studies tend to use women in clinical populations<sup>56-58</sup>. For example, studies examining women's body image and sexual satisfaction following breast augmentation indicated a significant increase in perceived levels of body image and sexual satisfaction<sup>53</sup>. A qualitative study found breast cancer patients who have undergone surgical procedures that resulted in changes in self-perceived sexual attractiveness perceived an increase in the quality of life after TRAM flap breast reconstruction<sup>52</sup>. A general population study among midlife Canadian women found that the more they perceived themselves as attractive, the more likely they were to experience an increase in sexual activities and sexual enjoyment<sup>55</sup>. Additional general populations studies of this association have been recommended<sup>52</sup>.

## **2.6 Self-rated sexual attractiveness and its relationship to psychological distress**

The attention to and evaluation of an individual's own physical attractiveness and overall physical appearance is referred to as "body image" in the public health literature<sup>59,60</sup>. There is a general consensus that pressures to conform to particular body size and shape ideals are more

pronounced for women than for men<sup>60</sup>. Poor body image has been found to be associated with depression and/or psychological distress in non-clinical populations (especially females and adolescent populations)<sup>61-63</sup> as well as in clinical populations such as women who underwent mastectomy, and obese populations<sup>52, 64, 65</sup>.

Previous research has hypothesized that the association between physical attractiveness and psychological distress may reflect differences in individual understanding of what constitutes sexual attractiveness<sup>66</sup>, and suggested that physical attractiveness should be studied along with other socially valued characteristics rather than in isolation<sup>46</sup>. In the proposed study, we hypothesize that women who cite body-image oriented features as the primary bases of their sexual attractiveness are more likely to have psychological distress than women who regard their sexual attractiveness as deriving from their other features. There appear to be no published studies that test this hypothesis. We also looked at this association among men for comparison.

## **2.7 Society, sexuality and sexual health in China**

Sexuality vary greatly across historical and cultural contexts<sup>67, 68</sup>. China holds one fifth of the world population, with significant cultural and historical variations. Traditionally, issues concerning marriage and sexual conduct in China were governed by a patrilineal system of inheritance and power<sup>69</sup>. In the late nineteenth and early twentieth centuries social reforms in China identified free-choice monogamous marriage as an indispensable step to reach sexual equality. During the Maoist era, the Chinese Communist Party (CCP), following its egalitarian political paradigm, set sexual equity as a fundamental political goal. After the founding of People's Republic of China in 1949, CCP instituted policies to promote sexual equity in political representation and ensure women's rights and welfare; carried out programs to eradicate

prostitution, abolish foot-binding, and concubinage; and enabled women to play a greater role in the growing labor force. From the 1950s until the late 1970s, gender differences were officially downplayed, and sexual relationships were highly politicized.

In 1978, China initiated market reforms, opened itself more to the rest of the world, and moved toward a market-based economy. During this period, China underwent major social and structural changes, such as the collapse of the work units system, the gradual and selective privatization of state-owned enterprises, and the growth of a rural-based migrant labor force. Three decades later, China has achieved significant economic growth but also faces a myriad of problems, such as widening income gaps between rich and poor, urban and rural, coastal and inland regions; environmental pollution; and natural resource depletion. In this context, changes have been observed in social mores, including in people's attitudes toward love, sexuality, marriage, family, and relationships. Pre-marital sex (national prevalence: 32.9% in 2000 to 43.5% in 2006), divorce, extra-marital relationships (national prevalence: 13.2% in 2000 to 19.1% in 2006), mistress-keeping, prostitution and sexually transmitted infections have all risen<sup>70-72</sup>.

The collapse of the former regimen of social control exercised via work units and neighborhood policing hastened the changes in sexuality in China, changes termed a "sexual revolution" by some sociologists<sup>70</sup>. These sociologists concluded that the success of the revolution can be seen in a separation between public and private spheres. Specifically, the sexual revolution is characterized by a more public display of sexually-explicit content in the media and greater privacy of sexual life for individuals. The most meaningful and important component of the sexual revolution in China is seen among couples, who now enjoy more frequent and more diversified sexual practices<sup>73</sup>.



However, economic reform has been accompanied by a cost in mental health. In both urban and rural China, psychological distress has been linked to socio-economic status<sup>36, 74, 75</sup>. A study in rural China found 33% of the population had mild psychological distress. This prevalence is similar to estimates found in other studies of rural populations around the world<sup>76-78</sup>.

In the past three decades, China has joined the worldwide diffusion of “the thin ideal”, with a negative health impact on women<sup>79</sup>. In the meantime, overweight and obesity in all age groups in China have been steadily increasing<sup>80-85</sup>. If to be attractive is to be thin, but overweight and obesity are increasing, then the increasing pressure and difficulty to be regarded as attractive may exert a negative impact on psychological health.

## **2.8 Self-rated sexual attractiveness, sexual satisfaction and psychological distress in China**

There have been a number of studies concerning sexual satisfaction in China<sup>86-90</sup>, although none had sexual attractiveness or sexual capital as a primary focus. One study of a nationally representative Chinese urban sample of 930 women and 893 men aged 20-45 who were married or had a steady sexual partner found that women who perceive themselves as unattractive and who want to lose weight report more psychological distress<sup>79</sup>. However, no study we are aware of has explored how different aspects of the construct of sexual attractiveness can be related to psychological distress in the Chinese population.

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## **CHAPTER 3 SPECIFIC AIMS, HYPOTHESES, AND SIGNIFICANCE**

### **3.1 Specific Aims**

Sexual satisfaction is an important aspect of sexual health and thus of overall health. Several studies have noted an association between rating oneself or one's partner as more attractive and greater sexual satisfaction<sup>1-3</sup>. Most of these studies involve women in clinical populations<sup>4-6</sup>. Literature on this topic is lacking in China, a country that holds one-fifth of the world's population and which has undergone a sexual revolution in recent decades<sup>7</sup>.

Many socially desirable characteristics can contribute to sexual attractiveness, such as physical attractiveness, pleasant personality, and athletic ability. Previous studies found an association between sexual attractiveness and psychological health, but such studies almost exclusively focused on physical appearance when measuring sexual attractiveness. The existing literature's relative neglect of aspects of sexual attractiveness other than physical attractiveness reflects both a lack of theoretical development and possibly a limitation of available data.

In this dissertation, I propose to use data from a cross-sectional survey conducted in an urban community in southern China to fill in the two gaps described above. Specifically, I aim to investigate:

1. Evaluate the association between self-rated attractiveness, partner's attractiveness and self-reported sexual satisfaction among men and women in the general population.

2. Assess whether ranking a body-image oriented aspect as one's most attractive feature is associated with higher psychological distress in women.

### **3.2 Hypotheses**

We hypothesize that: (1) Rating oneself or one's partner as more attractive is associated with greater sexual satisfaction; the association between self-rated attractiveness and sexual satisfaction is stronger in women compared to the association in men. (2) Women who rank body-image-oriented features as their most attractive aspect have higher psychological distress.

### **3.3 Significance**

By tapping into the construct of sexual attractiveness, this study raises awareness of how assessments of one's sexual attractiveness relate to sexual wellbeing and mental health, and in doing so, sheds light on strategies to improve quality of life for men and women.

Many qualities identified as contributing to sexual attractiveness begin to be shaped long before the initiation of sexual intercourse. Being able to invest in these qualities early in life may add to one's sexual attractiveness and be beneficial for subsequent sexual well-being.

Although more sexual attractiveness may increase sexual satisfaction for women, if the body-image oriented features are the primary basis for her sexual attractiveness, the objectification of the female body may negatively impact mental health.

Life events can shape or change people's self and body image. Being a victim of sexual violence often leads to a devalued self image<sup>8</sup>. Clinical populations such as cancer patients, diabetes patients, and HIV/AIDS patients often experience a deteriorating self-image due to physical changes and social stigma associated with these diseases<sup>9</sup>. If self-rated attractiveness is

associated with mental and sexual health, the study results will support intervention programs that encourage practitioners, such as social workers, nurses, psychotherapists, to learn about the relevant variables and create tools that allow them to effectively address self-rated attractiveness and its physical and mental impacts. For example, (1) social support programs targeting these populations should help people assess their status in favorable and positive ways<sup>10</sup>; (2) access to psychosocial support that maintains a healthy body image will be beneficial to the patients' recovery from or living with clinical conditions.

More broadly, the findings could provide evidence to inform education programs and media campaigns that aimed at promoting positive sexuality and mental health, particularly among young girls and women.

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## **CHAPTER 4 STUDY DESIGN & METHOD**

### **4.1 Study Setting**

Liuzhou is a major industrial city in China, a transportation hub for southern China, and a major tourist center. The city has several industrial and “high-tech” development zones, and also includes six surrounding rural counties. The survey was conducted in Liuzhou’s four urban districts, which have a total population of approximately 1.4 million, about 300,000 of whom are migrants. Liuzhou, which has been hard-hit by the HIV epidemic, was selected as a demonstration site for a collaborative NIH R24 research and training grant to the University of North Carolina at Chapel Hill, Renmin University in Beijing, and the National Center for STD Control in Nanjing, China.

### **4.2 Study Population**

We conducted a secondary data analysis using survey data collected in urban Liuzhou in June and July 2008. The sampling design and survey were adapted from the 2006 Chinese Health and Family Life Survey (CHFLS), a nationally representative survey of Chinese adults that focused on sexual partnerships, behaviors, and attitudes. Eight urban neighborhoods (jiedao) in Liuzhou were randomly selected as the primary sampling units; three residence committees (juweihui) in each of the eight neighborhoods were randomly selected as the secondary sampling units, for a total of 24 residence committees. The primary and secondary sampling units were selected with probability proportional to size. The study randomly selected households using the

household registration lists in each residence committee. Then, individual respondents (n = 1209) who appeared on the residence committee list as permanent residents or as migrants registered as temporary residents, and who were between 18 and 61 years old, were invited to participate. An audio computer assisted self interview (ACASI) survey was completed by 852 respondents (70.5 % response rate). The survey was administered at a private venue to preserve the confidentiality of the respondents. The Renmin University of China Institutional Review Board approved the Liuzhou study. The present analyses were approved by the UNC Chapel Hill Institutional Review Board.

### **4.3 Measures**

#### *4.3.1 AIM 1*

##### *Primary outcomes*

The primary outcomes were self-reported physical and emotional sexual satisfaction. In the survey, participants were asked about sexual satisfaction in their current partnership of at least 6 months duration. The questions were: “Does having sex with your current partner make you feel physically satisfied?” and “Does having sex with your current partner make you feel emotionally satisfied?”

##### *Primary exposure*

The primary exposure measure was self-rated sexual attractiveness. The question was: “Compared with people of the same age, how attractive are you in the eyes of the opposite sex?” Participants’ self-rated attractiveness was coded as a dichotomous variable: 1 (“very much” or “somewhat”) or 0 (“not much” or “not at all”). Few respondents answered “very much” or “not at all”.

### *Other exposure variables*

Respondents were also asked about their partner's sexual attractiveness and about whether they received enough care from their partner in daily life. The question was: "Compared with people of the same age, how attractive is your partner in the eyes of the opposite sex?" Partner's attractiveness was coded as a dichotomous variable: 1 ("very much" or "somewhat") or 0 ("not much" or "not at all"). Few respondents answered "very much" or "not at all". Participants were also asked to rate how well they feel cared for by their current spouse / sexual partner. The question was: "Does your partner take good and sufficient care of you in daily life?" The response is coded as 1 "enough" and 0 "Not enough / very insufficient / none." Sixty-six percent of male and 54% of female respondents reported "enough" care from his/her spouse/partner.

#### *4.3.2 AIM 2*

### *Primary outcome*

The primary outcome was psychological distress. A four-item short form of Zung's Self-rating Depression Scale (SDS) was used to measure psychological distress. The full SDS has been validated in China<sup>1</sup>. Each item asks about a condition over the last 3 months. The four items used for the present study were: (a) "In the past 3 month, did you sleep well or poorly at night?" (b) "...did you often feel depressed or bored?" (c) "...did you feel fatigued for reasons unknown to you?" (d) "...have you felt more irritable than usual?" The three-point response scale to the first item ranged from "usually slept well" to "always slept poorly". The remaining three items had response choices of "often", "sometimes" or "never". Although this four-item subscale has not been validated by itself, it was also used in the 2006 CHFLS survey<sup>2</sup>. In our study,

Cronbach's alpha for the four item scale was 0.66. As in the 2006 CHFLS, we constructed a psychological distress variable by summing the four items, with the last three items reverse-coded, to obtain a score with higher values denoting higher levels of psychological distress.

#### *Primary exposure*

Participants were asked "In your opinion, which aspect of yourself is most attractive in the eyes of similarly aged members of the opposite sex? (Only one selection allowed)". The choices were: "face", "body type", "deportment", "personality", "none of the above – my attractiveness is in other aspects", "none of the above – I am not attractive". Body-image oriented features were "face" and "body type".

#### *4.3.3 Covariates for both aims*

Personal attributes such as age and health; relationship factors such as relationship status, length of relationships; and cultural influences, such as cultural belief about age and masculinity/femininity, value of sexual self-expression<sup>3, 4</sup> have been known to affect sexual satisfaction<sup>5, 6</sup>. The overall effect of age on sexual satisfaction is not clear<sup>7</sup>. Among women, there seems to be a pronounced decline in sexual satisfaction starting in late midlife (roughly ages 50-65)<sup>8</sup>. Socio-economic factors seem to not make a difference, based on a review of western literature<sup>6</sup>. However, Chinese national survey results found significant differences in sexual satisfaction in relation to education, income, and urban/rural status<sup>9</sup>.

A similar set of variables was also included in the model for psychological distress.

## **4.4 Statistical Analysis**

Males and females differ profoundly in biology, physiology, and many aspects of



Sexuality<sup>10</sup>. These differences warrant looking at associations among men and women separately. All analyses were controlled for clustering and weighted to be representative of the age and gender distribution of Liuzhou. To ensure proper coding of variables, in addition to previous literature, we evaluated the distributions of outcomes, exposures, and covariates, tested linearity assumptions of bivariate associations between exposure and outcome, between covariates and outcomes, and adjust our coding and analyses accordingly. The analyses were performed using STATAIC 12 (STATA Inc.).

#### *4.4.1 AIM 1*

First, we calculated descriptive statistics of the sample by sex. In the survey, questions regarding physical as well as emotional sexual satisfaction were asked only of respondents who were married or had a steady sexual partner for the past 6 months. These 655 (270 male, 385 female) respondents constitute the study population for analyses for aim 1. We considered two approaches to the analysis of the outcomes of physical and emotional sexual satisfaction. Since physical and emotional sexual satisfaction are arguably highly-related aspects of the same construct and were highly correlated with one another ( $\rho=0.73$  in our data,  $\rho=0.85$  in the U.S. National Health and Social Life Survey (NHSLs))<sup>8, 11</sup>, a logical approach is analyze the sum of the two items as a scale, as other researchers have done<sup>11</sup>. However, at least one study has found different correlates for physical and emotional sexual satisfaction<sup>12</sup>. Also, interpretation of the individual items is more straightforward than of their sum. We therefore decided to analyze these two dimensions of sexual satisfaction as dependent variables in separate models.

Then, drawing on theories, relevant literature, and our hypotheses, we conducted a series of regression analyses to identify explanatory models, controlling for key variables such as age,

education, income, and partner's care.

We assessed effect measure modification and confounding. Partner's care in daily life was found to modify the association between self-rated sexual attractiveness and sexual satisfaction. We also checked whether partner's care in daily life modified the association between partner's attractiveness and sexual satisfaction and found that it did not. We used Poisson regression or log-binomial models to obtain prevalence ratios for common outcomes<sup>13, 14</sup>. Backwards elimination was used to reduce the models. An *a priori* alpha level of 0.05 was used for selection of variables for the final model. Model fit was assessed.

#### 4.4.2 AIM 2

The study population for analyses for aim 2 had 852 respondents initially, and 850 (497 women) after exclusion of respondents with missing values for most attractive aspect. We calculated descriptive statistics, by sex. We then used linear regression analysis to identify the explanatory model, controlling for key variables such as age, income, BMI, self-rated health, and urban vs. rural household registration status.

We assessed effect measure modification and confounding. In order to assess whether the relation of psychological distress to regarding one's body-image oriented features as one's most attractive aspect may differ according to one's self-rated sexual attractiveness, we combined the responses to the questions on sexual attractiveness and attractive aspects to create a 5-level nominal variable: (1) attractive, personality / deportment / other aspect is my most attractive feature(91 male, 132 female), (2) attractive, face/body type is my most attractive feature(29 male, 33 female), (3) I am not attractive, but personality/ deportment / other aspect is my most

attractive feature(148 male, 197 female), (4) I am not attractive, but face/body type is my most attractive feature(30 male, 49 female), (5) not attractive in any aspect(55 male, 84 female). Level 1 was the reference group. We used linear regression with backwards elimination. We also assessed model fitness by examining plots of residuals.

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## **CHAPTER 5 AIM 1**

### **Sexual Attractiveness and Sexual Satisfaction: - Evidence from a Chinese Urban Community Household Survey**

#### **INTRODUCTION**

Sexual satisfaction has been defined as the affective response arising from one's evaluation of his or her sexual relationships<sup>1</sup>. Sexual satisfaction is important to public health for several reasons<sup>2</sup>. First, sexual satisfaction is by definition an important aspect of sexual health and is important as a health outcome in its own right<sup>3</sup>. Second, goals relating to sexual satisfaction shape both risk-taking and adoption of risk-reduction practices, such as use of condoms and effective contraceptives<sup>4, 5</sup>. Third, a deficit in sexual satisfaction is a strong motivation for initiating extra-marital relationships and other concurrent sexual relationships, which increases population dissemination of sexually transmitted infections<sup>6</sup>. Fourth, satisfaction with one's sexual life indicates the absence of coercion and sexual violence. Lastly, sexual satisfaction is important to personal and relationship happiness, which promotes physical and mental health<sup>7, 8</sup>.

Attractiveness is the power to evoke interest. Sexual attractiveness is associated with high agreement of inter-rater assessment<sup>9, 10</sup>, but men and women differ in their assessment of and criteria for sexual attractiveness<sup>11, 12</sup>. Higher levels of attractiveness may be associated with more social and economic reward<sup>13</sup>.

People with a high sense of self-attractiveness or higher partner attractiveness often report greater sexual satisfaction<sup>14-16</sup>, although this relationship has been studied primarily in women in clinical populations<sup>17-19</sup>. For example, women who underwent breast augmentation reported improved body image and sexual satisfaction<sup>16</sup>. In a qualitative study, breast cancer patients who had undergone surgical procedures that resulted in changes in self-perceived sexual attractiveness perceived an increase in the quality of life after TRAM flap breast reconstruction<sup>15</sup>. Among midlife Canadian women, self-perceived attractiveness was associated with sexual activities and sexual enjoyment<sup>20</sup>. In the US, wives' perceptions of their sexual attractiveness was associated with husbands and wives' marital satisfaction, aside from BMI and other variables<sup>21</sup>.

China holds nearly one-fifth of the world population, with significant cultural and historical variation. Traditionally, issues concerning marriage and sexual conduct in China were governed by a patri-lineal system of inheritance and power<sup>22</sup>. Since 1978, China initiated market reform and underwent major social and structural changes, such as the collapse of the work units system, the gradual and selective privatization of state-owned enterprises, and the growth of a rural-based migrant labor force.

The collapse of the former regimen of social control exercised via work units and neighborhood policing hastened the changes in sexuality in China, changes termed as a “sexual revolution” by some sociologists<sup>23</sup>. The success of the revolution can be seen in a separation between public and private spheres, characterized by a more public display of sexual content and greater privacy of sexual life for individuals. The most meaningful and important component of the sexual revolution, they contend, is seen among couples, who now enjoy more frequent and more diversified sexual practices<sup>24</sup>.

There have been a number of studies concerning sexual life satisfaction in China<sup>25-30</sup>, although none had sexual attractiveness as a primary focus. We examined the relationship between sexual attractiveness and sexual satisfaction by analyzing data from a 2008 household survey in Liuzhou city in southern China. The survey used the Chinese Health and Family Life Survey (CHFLS) questionnaire and was conducted by researchers from Renmin University in Beijing, the National Center for STD Control in Nanjing, China, and the University of North Carolina at Chapel Hill. We investigated (1) whether regarding oneself and/or one's partner as more sexually attractive is associated with greater sexual satisfaction, and (2) whether this association is modified by gender and by feeling that one's partner takes good care of one in daily life.

## **METHOD**

### **Study Setting**

Liuzhou is a major industrial city in China and has several manufacturing bases and high-tech development zones. Liuzhou also serves as a transportation hub for southern China and is a major tourist center. Liuzhou city has four urban districts and six surrounding rural counties, many of whose residents have migrated to the urban districts. The survey was conducted in Liuzhou's four urban districts. The total population in the four urban districts is approximately 1.4 million, about 300,000 of whom are migrants. Compared to the national statistics, Liuzhou city has higher prevalences of STI and HIV<sup>31</sup>.

### **Study Population**

The Liuzhou survey was conducted in urban Liuzhou in June and July 2008. Eight urban neighborhoods (jiedao) in Liuzhou were randomly selected as the primary sampling units, with random selection of three residence committees (juweihui) in each of the eight neighborhoods as



the secondary sampling units, for a total of 24 residence committees. The primary and secondary sampling units were selected with probability proportional to size. The study then randomly selected households using the household registration lists in each residence committee. Adults ( $n = 1209$ ) who appeared on the residence committee list as permanent residents or as migrants registered as temporary residents, and who were at least 18 years old, were invited to participate. An audio computer assisted self interview (ACASI) survey was completed by 852 respondents (70.5 % response rate) ages 18–61 years. In the survey, questions regarding physical as well as emotional sexual satisfaction were asked only of respondents who were married or had a steady sexual partner in the past 6 months; these respondents comprise the study population for analyses reported here. The survey was administered at a private venue to preserve the confidentiality of the respondents. The Renmin University of China IRB approved the original study; the University of North Carolina at Chapel Hill IRB approved the present secondary data analysis.

## **Measures**

*Sexual Satisfaction.* In the survey, participants were asked about their sexual satisfaction with their current partner. The questions were: “Does having sex with your current partner make you feel physically satisfied?” and “Does having sex with your current partner make you feel emotionally satisfied?” The choices for both questions were: “very much”, “somewhat”, “not much”, “not at all”. The correlation between the physical sexual satisfaction (PSS) and emotional sexual satisfaction (ESS) in the original coding was 0.73. For the primary analyses we dichotomized the sexual satisfaction variables into: completely satisfied (response “very much”) versus not completely satisfied (responses “somewhat” or “not much” or “not at all”).

*Respondent’s attractiveness.* Participants were asked “Are you attractive to similarly aged members of the opposite sex?” The choices for the question were: “very much”,

“somewhat”, “not much”, “not at all”, which we collapsed into: attractive (responses “very much” or “somewhat”) versus not attractive (responses “not much” or “not at all”).

*Partner’s attractiveness.* Participants were also asked to rate the attractiveness of their current spouse / sexual partner, with the question: “Is your partner attractive to similarly aged members of the opposite sex?” The choices for the question were: “very much”, “somewhat”, “not much”, “not at all”, which we collapsed into: attractive (responses “very much” or “somewhat”) versus not attractive (responses “not much” or “not at all”).

*Partner’s care.* Participants were also asked to rate how well they feel cared for by their current spouse / sexual partner. The question asks: “Does your partner take good and sufficient care of you in daily life?” The choices for the question were: “enough”, “not enough”, “very insufficient”, “none”, which we collapsed into: enough (response “enough”) versus not enough (any of the other responses).

#### *Covariates*

*Income.* Participants were asked about monthly income. “Over the past 12 months, approximately how much was your personal income per month?” Responses were dichotomized at the median.

*Education.* Education was categorized into three groups: less than high school, high school graduate, and beyond high-school.

*Age.* Age was categorized into quartiles (table 5.1) and dichotomized at the third quartile for regression analyses.

#### **Data Analysis**

Because of the many differences in male and female sexuality and the belief that physical traits and socioeconomic status carry different weight and meaning for men and women<sup>32-35</sup>,

analyses were conducted separately for men and women.

Drawing on theories, relevant literature, and our hypotheses, we ran a series of regression analyses to identify an explanatory model, adjusting for key variables: age, income, education. Adjustment for partnership age difference, a factor that has been identified as a significant predictor for sexual satisfaction in a study in Hong Kong<sup>36</sup>, had minimal effect. All analyses adjusted for clustering and were weighted to the age and gender distribution of Liuzhou. The analyses were performed using Stata IC 12 (Stata Inc.).

## RESULTS

### Descriptive and Bivariable Analyses

There were 655 respondents who were married or had a steady sexual partner in the past 6 months. After weighting, there were 52% males, and average age was 38.9 years (Table 5.1). Over one-third (36.3%) of the weighted sample had less than a high school education, 41.0% had completed high school, and 22.7% had continued their studies beyond high school.

Men were somewhat more likely than women to respond that they were “very satisfied” for physical sexual satisfaction (25.6% of male respondents, 17.2% female respondents) and for emotional sexual satisfaction (25.8% of males, 21.2% females). Similar percentages of men (37%) and women (34%) rated themselves as “very attractive” and considered their partners to be (46.3% of men, 48.7% of women). Men (66.0%) were more likely than women (53.9%) to say that their partner takes enough care of them in daily life.

*Sexual attractiveness.* Respondent’s sexual attractiveness was associated with sexual satisfaction for men and women, somewhat more strongly for women [prevalence ratios (PR) with 95% confidence intervals (CI): PSS-men 1.62 (95% CI: 1.29, 2.03), ESS-men 1.22 (1.00, 1.48), PSS-women 2.10 (1.22, 3.62), ESS-women 1.43 (0.89, 2.28)] (Table 5.2). Partner’s sexual

attractiveness, by contrast, was strongly associated with sexual satisfaction in men; the association with women's emotional sexual satisfaction was close to the null [PR (with 95%CI): PSS-men 2.29 (1.66, 3.16), ESS-men 2.02 (1.71, 2.40); PSS-women 1.57 (1.02, 2.42), ESS-women 1.05 (0.67, 1.65)].

*Partner's care.* Partner's care (the respondent perceived that his or her partner took enough care of the respondent) in daily life was associated with greater physical and emotional sexual satisfaction predominantly among men [PSS 2.56 (1.27, 5.17); ESS 3.94 (1.88, 8.25)]. The association between self-rated attractiveness and sexual satisfaction varied by partner's care in daily life. For both men and women, having enough partners' care in daily life weakened the association between self-rated attractiveness and sexual satisfaction. Although it was quite strong for men who felt their partner did not provide sufficient care, the prevalence ratio estimates were very imprecise.

### **Multivariable Analyses**

After adjustment for age, income, and education (Table 5.3), we found interesting gender differences in the association of sexual satisfaction with partner's attractiveness, self-rated attractiveness, and respondent's perception of whether they receive enough care from partner: Self-rated sexual attractiveness was significantly associated only with physical sexual satisfaction among women [PR 1.81 (95% CI: 1.11, 2.94)].

Partner's sexual attractiveness was significantly associated with both physical and emotional satisfaction in men [PSS 2.30 (1.70, 3.09); ESS 2.22 (1.85, 2.67)]. The corresponding associations were much weaker among women [PSS 1.33 (0.67, 2.63); ESS 0.96 (0.57, 1.61)].

Having enough partner's care in daily life was associated with greater physical and emotional sexual satisfaction for both men and women, but more strongly for men [PSS 2.37

(1.13, 4.95), ESS 3.69 (1.77, 7.70)] than for women [PSS 1.44 (0.74, 2.80), ESS 1.59 (0.79, 3.20)].

As in the bivariable analyses, the association of sexual satisfaction and sexual attractiveness differed by partner's care in daily life (Table 5.4). Among men who think their partner does not take enough care of them in daily life, men who self-rated as attractive were more likely to report greater physical as well as emotional sexual satisfaction compared to those who self-rated as not attractive [PSS 2.62 (0.50, 13.62), ESS 4.10 (0.89, 18.87)]. This effect of self-rated attractiveness on sexual satisfaction was not seen among men who reported that their partner's care in daily life was enough [PSS 1.03 (0.66, 1.62), 0.76 (0.56, 1.05)].

This difference by partner's care in daily life was less prominent among women. Among women who reported that their partner does not take enough care of them in daily life, women who self-rated as attractive reported greater physical as well as emotional sexual satisfaction compared to those who self-rated as not attractive [PSS 2.40 (0.91, 6.28), ESS 1.48 (0.79, 2.77)]. This association of self-rated attractiveness with sexual satisfaction was weaker among women who reported that their partner's care in daily life was enough [PSS 1.54 (0.76, 3.15), ESS 1.27 (0.79, 2.04)].

The association of sexual satisfaction with partner's attractiveness did not vary with partner's care in daily life (data not shown).

## **DISCUSSION**

We set out to explore the association of sexual satisfaction with respondents' perception of their own and their partner's sexual attractiveness. Anticipating gender differences in the associations, we analyzed men and women separately. Sexual attractiveness of self and partner were each positively associated with sexual satisfaction, with gender differences, consistent with

our hypotheses. A common theme was that women's sexual attractiveness was important for both men's and women's sexual satisfaction: men who considered their partner "attractive" had significantly more physical as well as emotional sexual satisfaction); women who considered themselves as sexually attractive had greater physical sexual satisfaction. By contrast, men's sexual attractiveness was less important for men (i.e., self-rated attractiveness) and for women (as partner's sexual attractiveness).

Our results for associations of sexual satisfaction with respondents' sexual attractiveness, partner's attractiveness, age, and education are by and large consistent with results reported in the 2000 Chinese Health and Family Life Survey (CHFLS), which found sexual satisfaction to be associated with participant's attractiveness (for women), partner's attractiveness (for men), and partner's care (referred to perceived partner's affection) (for both women and men)<sup>37</sup>.

However, we observed that the association of sexual satisfaction with respondents' sexual attractiveness varied substantially according to the respondent's perception of the partner's care in daily life. For both men and women, the prevalence ratios when partner's care was "enough" were all shifted toward the null values relative to the corresponding prevalence ratios when partner's care was "not enough". In other words, the importance of respondents' sexual attractiveness for having physical as well as emotional sexual satisfaction was seen primarily in respondents who regarded their partner as insufficiently considerate and caring in daily life. The impact of partner's care status was stronger among men, which may reflect gender roles in this Chinese community.

A major limitation of this study lies in the measurement of the key constructs. Attractiveness, physical and emotional sexual satisfaction, partner's care in daily life are all self-reported, subjective in nature, and vulnerable to influences such as social desirability. However,

the constructs are inherently subjective, so they can be assessed only through self-report. Nevertheless more sophisticated ways to assess these concepts may be possible. In addition, since this study was based on cross-sectional data, the direction of causality, should it be present, cannot be determined. For example, physical and emotional sexual satisfaction could affect one's assessment of one's own and his/her partner's sexual attractiveness. Lastly, we did not have data on several factors that are known to influence the outcome, such as sexual dysfunction and contraceptive methods used by the couple<sup>38-41</sup>, and therefore cannot adjust for them in our analysis.

Self-rated sexual attractiveness is a part of self-concept, which develops over one's life course and varies with age and birth cohort<sup>42</sup>. Overall health, athletic ability, an engaging personality, musical ability, and many other qualities identified as contributing to sexual attractiveness<sup>43-45</sup> begin their development early in life. Nurturing the development of these qualities may benefit sexual wellbeing as well. In addition, life events can shape or change people's self-rated sexual attractiveness. For example, being a victim of sexual violence often leads to a devalued self-image<sup>46</sup>; clinical populations such as cancer patients, diabetes patients, and HIV/AIDS patients often experience a deteriorating self-image due to physical changes and social stigma associated with these diseases<sup>47</sup>. Our finding that sexual attractiveness has less importance for sexual well-being if one regards his or her partner's care in daily life as sufficient raises the possibility that relationship counseling could offset the impact of deteriorating self-image.

Lastly, given the prominence of sexual attractiveness in advertising campaigns<sup>48-50</sup>, which also strengthen male/female stereotypes<sup>51</sup>, educational and counseling approaches to encourage a

more equal sharing of household responsibilities between men and women may help in promoting both mental and physical aspects of sexual health.

## **CONCLUSIONS**

Physical and emotional sexual satisfaction are associated with greater sexual attractiveness and feeling cared for by one's partner. Broadening the concept of what is sexually attractive and improving communication of expectations for relationships may help Chinese women and men gain greater fulfillment from their expanded sexual freedom.



**Table 5.1** Descriptive Statistics for Urban Chinese Men and Women Aged 18-61 Years Who were Married or Had a Steady Sexual Partner in the Past 12 Months in Liuzhou City, Guangxi Province, China, 2008

	Male (N=270)		Female (N=385)		Total (N=655)	
	No.	%*	No.	%*	No.	%*
<b>Age Mean (SD)</b>	39.3 (10.6)		38.5 (9.4)		38.9 (10.1)	
<b>Age group (y)</b>						
18-32	72	32.0	82	30.9	154	31.5
33-40	71	25.3	117	29.2	188	27.2
41-48	54	18.1	108	23.2	162	20.6
49-61	73	24.5	78	16.8	151	20.8
<b>Education</b>						
Less than high school	103	36.8	141	35.8	244	36.3
High school graduate	105	39.6	169	42.4	274	41.0
Beyond high school	62	23.6	75	21.8	137	22.7
<b>Monthly Income (CHY)</b>						
<890 RMB/m	95	33.5	215	52.8	310	42.8
>890 RMB/m	175	66.5	170	47.2	345	57.2
<b>Sexual Satisfaction: Physically very satisfied</b>						
Yes ("very much")	69	25.6	66	17.2	135	21.6
No (somewhat/ not much/ not at all)	201	74.4	319	82.6	520	78.4
<b>Sexual Satisfaction: Emotionally very satisfied</b>						
Yes ("very much")	70	25.8	79	21.2	149	23.6
No (somewhat/ not much/not at all)	200	74.2	306	78.8	506	76.4
<b>Self-rated sexual attractiveness<sup>2</sup></b>						
Attractive (very much/somewhat)	98	37.0	126	34.0	224	35.6
Not attractive (not much/not at all)	172	63.0	257	66.0	429	64.4
<b>Partner's sexual attractiveness<sup>1</sup></b>						
Attractive (very much/somewhat)	117	46.3	187	48.7	304	47.5
Not attractive (not much/not at all)	145	53.7	189	51.3	334	52.5
<b>Partner takes enough care of you</b>						
Yes (enough)	183	66.0	218	53.9	401	60.2
No (not enough/very insufficient/none)	87	34.0	167	46.1	254	39.8
<b>Self-rated sexual attractiveness</b>						
Not attractive, PC No	60	22.2	118	31.5	178	26.7
Attractive, PC Yes	112	40.8	139	34.5	251	37.8
Not attractive, PC No	27	10.3	48	13.3	75	11.7
Attractive, PC Yes	71	26.8	78	20.7	149	23.9

\* Weighted to the age-and-sex distribution of Liuzhou City (year 2006). For age, the mean and standard deviation are shown.

Note. 1. Missing data for 8 observations among men, missing 9 observations among women. 2. Missing data for 2 observations among women. 3. PC=Partner's care in daily life.

**Table 5.2** Bivariable Analyses of Sexual Satisfaction for Urban Chinese Men and Women Aged 18-61 Years Who Were Married or Had a Steady Sexual Partner in the Past 6 Months in Liuzhou City, Guangxi Province, China, 2008

Variable	Men (N=262)		Women (n=375)	
	Physically satisfied PR (95% CI)	Emotionally satisfied PR (95% CI)	Physically satisfied PR (95% CI)	Emotionally satisfied PR (95% CI)
<b>Age groups (y)</b>				
> 48 years	1.04 (0.56, 1.94)	1.10 (0.70, 1.73)	0.49 (0.22,1.06)	0.52 (0.24, 1.10)
<b>Income</b>				
Upper half	0.66 (0.37, 1.18)	0.59 (0.35, 1.00)	1.59 (0.85, 2.96)	1.39 (0.86, 2.26)
<b>Education (Ref. &lt; high school )</b>				
High school graduate	0.98 (0.69, 1.39)	0.78 (0.52, 1.16)	0.80 (0.42, 1.53)	0.67 (0.43, 1.03)
Beyond high school	0.68 (0.32, 1.44)	0.46 (0.19, 1.12)	0.74 (0.32, 1.86)	0.75 (0.39, 1.46)
<b>Self-rated attractiveness</b>				
Attractive	<b>1.62 (1.29, 2.03)**</b>	<b>1.22 (1.00 1.48)</b>	<b>2.10 (1.22, 3.62)*</b>	1.43 (0.89, 2.28)
<b>Partner's sexual attractiveness</b>				
Attractive	<b>2.29 (1.66, 3.16)***</b>	<b>2.02 (1.71, 2.40)***</b>	<b>1.57 (1.02, 2.42)*</b>	1.05 (0.67, 1.65)
<b>Partner's care in daily life</b>				
Enough	<b>2.56 (1.27, 5.17)*</b>	<b>3.94 (1.88, 8.25)**</b>	1.50 (0.77, 2.92)	1.60 (0.81, 3.14)
<b>Self-rated attractiveness stratified by PC</b>				
PC=0, Attractive	2.93 (0.50, 17.13)	4.45 (0.82, 24.13)	<b>2.78 (1.18, 6.53)*</b>	1.58 (0.89, 2.80)
PC=1, Attractive	1.36 (0.89, 2.08)	0.97 (0.75, 1.25)	1.72 (0.76, 3.89)	1.29 (0.71, 2.35)

*Note.* 1. PR=Prevalence Ratio; CI=Confidence interval; PC=Partner's care in daily life, PC=1 when response to the question "Does your partner takes good care of you in daily life?" is "enough", PC=0 when response is otherwise. 2. Poisson or log-binomial regression models. 3. Values are adjusted for sampling strata, primary sampling units and population weights. 4. "\*" = P<.05, "\*\*\*" = P<.01, "\*\*\*\*" = P<.001

**Table 5.3** Multivariable Analyses of Sexual Satisfaction for Urban Chinese Men and Women Aged 18-61 Years Who Were Married or Had a Steady Sexual Partner in the Past 6 Months in Liuzhou City, Guangxi Province, China, 2008

Variable	Men (N=262)		Women (n=375)	
	Physically satisfied PR (95% CI)	Emotionally satisfied PR (95% CI)	Physically satisfied PR (95% CI)	Emotionally satisfied PR (95% CI)
<b>Age groups (y)</b>				
> 48 years	1.07 (0.60, 1.90)	0.99 (0.60, 1.66)	0.44 (0.19,1.03)	0.47 (0.20, 1.08)
<b>Income</b>				
Upper half	0.71 (0.46, 1.12)	<b>0.69 (0.50, 0.97)*</b>	1.60 (0.87, 2.95)	1.50 (0.93, 2.43)
<b>Education (Ref. &lt; high school )</b>				
High school graduate	1.04 (0.82, 1.33)	0.88 (0.60, 1.30)	0.69 (0.36, 1.32)	<b>0.62 (0.41, 0.96)*</b>
Beyond high school	0.70 (0.33, 1.51)	0.52 (0.24, 1.15)	0.47 (0.20, 1.12)	0.54 (0.25, 1.15)
<b>Self-rated sexual attractiveness</b>				
Attractive	1.21 (0.86, 1.70)	0.93 (0.64, 1.35)	<b>1.81 (1.11, 2.94)*</b>	1.34 (0.93, 1.93)
<b>Partner's sexual attractiveness</b>				
Attractive	<b>2.30 (1.70, 3.09)***</b>	<b>2.22 (1.85, 2.67)***</b>	1.33 (0.67, 2.63)	0.96 (0.57, 1.61)
<b>Partner takes care of you</b>				
Enough	<b>2.37 (1.13, 4.95)*</b>	<b>3.69 (1.77, 7.70)**</b>	1.44 (0.74, 2.80)	1.59 (0.79, 3.20)

Note. 1. PR=Prevalence Ratio; CI=Confidence interval; PC=Partner's care in daily life, PC=1 when response to the question "Does your partner takes good care of you in daily life?" is "enough", PC=0 when response is otherwise. 2. Poisson or log-binomial regression models. 3. Values are adjusted for sampling strata, primary sampling units and population weights. 4. "\*" = P<.05, "\*\*\*" = P<.01, "\*\*\*\*" = P<.001

**Table 5.4** Association of Sexual Attractiveness and Partner's Care with Sexual Satisfaction in Multivariable Analyses for Urban Chinese Men and Women Aged 18-61 Years Who Were Married or Had a Steady Sexual Partner in the Past 6 Months in Liuzhou City, Guangxi province, China, 2008

Variable	Men (N=262)		Women (n=375)	
	Physically satisfied PR (95% CI)	Emotionally satisfied PR (95% CI)	Physically Satisfied PR (95% CI)	Emotionally satisfied PR (95% CI)
<b>Self-rated sexual attractiveness</b>				
<b>Attractive, PC=0</b>	2.62 (0.50, 13.62)	4.10 (0.89, 18.87)	2.40 (0.91, 6.28)	1.48 (0.79, 2.77)
<b>Attractive, PC=1</b>	1.03 (0.66, 1.62)	0.76 (0.56, 1.05)	1.54 (0.76, 3.15)	1.27 (0.79, 2.04)
<b>Partner's sexual attractiveness</b>				
<b>Attractive</b>	<b>2.32 (1.75, 3.09)***</b>	<b>2.25 (1.86, 2.71)***</b>	1.33 (0.69, 2.57)	0.96 (0.57, 1.62)

*Note.* 1. Covariates in the model were age, education and income. 2. PR=Prevalence Ratio; CI=Confidence interval; PC=Partner's care in daily life, PC=1 when response to the question "Does your partner takes good care of you in daily life?" is "enough", PC=0 when response is otherwise. 3. Poisson or log-binomial regression models. 4. Values are adjusted for sampling strata, primary sampling units and population weights. 5. "\*" =  $P < .05$ , "\*\*" =  $P < .01$ , "\*\*\*" =  $P < .001$

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## CHAPTER 6 AIM 2

### **Self-rated Sexual Attractiveness and Psychological Distress: Evidence from a Chinese Urban Community Household Survey**

#### **INTRODUCTION**

Attention to and evaluation of an individual's own *physical attractiveness* and overall physical appearance is referred to as "body image" in the public health literature<sup>1,2</sup>. Numerous studies have associated poor body image with depression and/or psychological distress in non-clinical populations (especially females and adolescent populations)<sup>3-5</sup> as well as in clinical populations, such as women who underwent mastectomy, and obese populations<sup>6-8</sup>.

Sexual attractiveness has been cited as a major reason why women desire to conform to an ideal body image, such as the "thin ideal"<sup>9</sup>. The literature often equates sexual attractiveness with physical attractiveness<sup>10-12</sup>, but sexual attractiveness is a broader concept<sup>13</sup>. In addition to physical attractiveness, socially valued characteristics such as intelligence, charm, humor, and athletic ability all contribute to evaluation of sexual attractiveness<sup>14-16</sup>. However, questions such as the ranking and the prevalence of sexually "attractive" attributes reported by men and women, and how these attributes relate to mental health are largely unexplored in the literature.

According to objectification theory, women are more likely than men to suffer negative mental and physical health impacts due to internalizing an observer's perspective through being treated as body valued predominantly for its consumption by others<sup>17</sup>. We expect women who

have a more objectified self-image to report their most attractive feature to be body-image oriented, and therefore, we expect women who report their most attractive feature as body-image oriented to be more prone to psychological distress. The present study taps into the construct of “sexual attractiveness” to examine whether women who cite their body-image oriented features as the primary bases of their sexual attractiveness report more psychological distress than women who regard their sexual attractiveness as deriving from their other features.

### **China: Reform-Era and Changes in Social Mores, Mental Health**

China is a patrilineal country traditionally. In the late nineteenth and early twentieth centuries, social reforms in China identified free-choice monogamous marriage as an indispensable step to reach sexual equality. In 1978, China initiated market reform, opened itself more to the rest of the world, and moved toward a market-based economy<sup>18</sup>. During this period, China underwent major social and structural changes, such as the collapse of the work units system, the gradual and selective privatization of state-owned enterprises, and the growth of a rural-based migrant labor force. Three decades later, China has achieved significant economic growth. In the meantime, China also faces a myriad of problems, such as widening income gaps between rich and poor, urban and rural, and coastal and inland regions; environmental pollution; and natural resource depletion.

In this context, changes have been observed in social mores, including in people’s attitudes toward love, sexuality, marriage, family, and relationships. Pre-marital sex (national prevalence: 32.9% in 2000 to 43.5% in 2006), divorce, extra-marital relationships (national prevalence: 13.2% in 2000 to 19.1% in 2006), mistress-keeping, prostitution and sexually transmitted infections have all become more common<sup>19-21</sup>.

## **China: Body Image and Mental Health among Women**

Social and economic transitions have been accompanied by a cost in mental health in urban and rural China<sup>22-24</sup>. In the past three decades, China's overweight and obesity in all age groups have steadily increased<sup>25-30</sup>. Simultaneously, China has experienced the worldwide diffusion of “the thin ideal”, with a negative mental health impact on women<sup>31</sup>. In urban China, women in steady relationships including marriage who perceived themselves as unattractive and wanted to lose weight reported more psychological distress<sup>31</sup>. But the impact of different aspects of sexual attractiveness on psychological distress has not been explored in the Chinese population.

In 2008, researchers conducted a household survey in Liuzhou city, located in southern China, using the Chinese Health and Family Life Survey (CHFLS) questionnaire. We used data from the Liuzhou survey to test the hypothesis that: women who rank body-image-oriented features as their most attractive feature are more likely to have higher psychological distress compared to women who rank other features as their most attractive feature.

## **METHOD**

### **Study Setting**

Liuzhou is a major industrial city in China and has several industrial and high-tech development zones. Liuzhou also serves as a transportation hub for southern China and is a major tourist center. While the survey was conducted in Liuzhou's four urban districts, the city also includes six surrounding rural counties. The total urban population is approximately 1.4 million, about 300,000 of whom are migrants. Liuzhou city has higher prevalence of STIs and HIV than Chinese national averages<sup>32</sup>.

## Study Population

We conducted a secondary data analysis using survey data collected in urban Liuzhou in June and July 2008. The sampling design and survey were adapted from the 2006 Chinese Health and Family Life Survey (CHFLS), a nationally representative survey of Chinese adults focused on sexual partnerships, behaviors, and attitudes<sup>33</sup>. The primary and secondary sampling units were selected with probability proportional to size. Eight urban neighborhoods (街道 jiedao) in Liuzhou were randomly selected as the primary sampling unit, followed by random selection of three residence committees (居委会 juweihui) in each of the eight neighborhoods as the secondary sampling unit, amounting to 24 residence committees. In the study, households were randomly selected using the household registration lists in each residence committee. Then, adults between age 18 and 61 years old ( $n = 1209$ ) who appeared on the residence committee list as permanent residents or as migrants registered as temporary residents were invited to participate. An audio computer assisted self interview (ACASI) survey was completed by respondents (70.5 % response rate). The survey was administered at a private venue to preserve the confidentiality of the respondents. The Renmin University of China IRB approved the Liuzhou study; the University of North Carolina at Chapel Hill IRB approved the present secondary data analysis.

## Measures

*Psychological Distress.* We measured psychological distress with a four-item scale previously used in the CHFLS<sup>31</sup>. The scale is a short form of the Zung Self-rating Depression Scale (SDS). The full (20-item) SDS has been validated in China among 268 patients with chronic medical diseases<sup>34</sup>, where it was found to have good construct validity and internal consistency (Cronbach's  $\alpha=0.82$ ); a cut-point of 55 had sensitivity of 66.7% and specificity

of 90.0% in detecting depression based on DSM-IV criteria. The four items used for the present study asked about a condition over the last 3 months: (a) “In the past 3 months, did you sleep well or poorly at night?” (b) “...did you often feel depressed or bored?” (c) “...did you feel fatigued for reasons unknown to you?” (d) “...have you felt more irritable than usual?” The three-point response scale to the first item ranged from “usually slept well” to “always slept poorly”. The remaining three items had response choices of “often”, “sometimes” or “never”. The psychological distress variable was constructed by summing the four items, with the last three items reverse-coded, to obtain a score with higher values denoting higher levels of psychological distress. This psychological distress scale (PDS) score ranged from 4 to 12, with higher values indicating greater distress.

*Attractiveness and Most Attractive Aspect.* Participants were asked “Are you attractive to similarly aged members of the opposite sex?” and “In your opinion, which aspect of yourself is most attractive to similarly aged members of the opposite sex? (Only one selection allowed)”. The choices for the former question were: “very much”, “somewhat”, “not much”, “not at all”, which we collapsed into: attractive (responses “very much” or “somewhat”) versus not attractive (responses “not much” or “not at all”). The choices for the latter question were: “face”, “body type”, “deportment”, “personality”, “none of the above – my attractiveness is in other aspects”, “none of the above – I am not attractive (Only one selection allowed)”. Body-image oriented features were “face” and “body type”. Thus, the answers to the attractive aspect question were collapsed into three categories: (1) face or body type, (2) personality, deportment, or “other aspects”, and (3) “not attractive in any aspect”. We then combined the responses to these two questions and created the following five groups: (1) attractive, personality/deportment/other aspect is my most attractive feature, (2) attractive, face/body type is my most attractive feature,

(3) I am not attractive, but personality/deportment/other aspect is my most attractive feature, (4) I am not attractive, but face/body type is my most attractive feature, (5) not attractive in any aspect.

Group 1 was the reference group for comparisons.

### **Covariates**

*Income.* Participants were asked about monthly income. “Over the past 12 months, approximately how much was your personal income per month?” Responses were categorized into income quartiles (Table 6.1) and dichotomized at the median for regression analysis.

*Education.* Education was categorized in three groups: less than high school, high school graduate, and beyond high-school.

*Age.* Age was analyzed within quartiles.

*Body Mass Index (BMI).* BMI was calculated as  $\text{weight}/\text{height}^2$  from information reported by respondents. BMI was coded according to a BMI classification system that has been tailored to Asian populations<sup>25</sup>. BMI in the range (24-28) was classified as overweight; a BMI of 28 or above was classified as obese.

*Household registration status.* A comprehensive literature review found that Chinese migrant workers tend to have higher levels of psychological distress<sup>35</sup>. In the questionnaire, respondents were asked whether their current permanent household registration was urban or rural. Since this study was conducted in an urban setting, a rural household registration indicates the respondent was a rural-urban migrant and was listed as “temporary resident” by the district’s residential committee.

### **Data Analysis**

Because of the many differences in male and female sexuality and the belief that physical traits and socioeconomic status carry different weight and meaning to men and women<sup>36-39</sup>, analyses were conducted separately for men and women.

Drawing on theories, relevant literature, and our hypothesis, we fit a series of linear regression models to identify the explanatory model, adjusting for key variables such as age, income, education, BMI and migration status. All analyses adjusted for clustering and were weighted to the age and gender distribution of Liuzhou. All percentages, means, and other parameters were estimated using appropriate weights. The analyses were performed using Stata IC 12 (Stata Inc.).

## **RESULTS**

### **Descriptive and Bivariable Analyses**

The population sample (n=852) included similar proportions of men (52%) and women (48%); the average age was 38.4 years (Table 6.1). About one in five (20.7%) held a rural permanent household registration, which implied that they were rural-to-urban migrants. Over one-third (37.6%) had less than a high school education, 38.9% had completed high school, and 23.5% had continued their studies beyond high school. A relatively small percentage (6.6%) was obese.

For attractiveness, about one-third of respondents rated themselves as “very” or “somewhat” attractive. For most attractive aspect, 16.6% of respondents reported a body-image oriented feature (“face” or “body type”), 68.2% reported a non-body image oriented feature (“personality”, “deportment”, or “other aspects”), and 15.3% reported that they were “not attractive”. All of these percentages were similar for men and women. For the 5 categories that combined attractiveness and attractive aspects, 26.2% men and 28.2% women rated themselves as attractive and rated a non-body-image oriented aspect as their most attractive feature. Similarly percentages of men (14.7%) and women (15.9%) rated themselves as not attractive in any aspect.

The mean score on the PDS was 6.7. Women's mean PDS score was 0.4 point higher than that of men (Table 6.2).

*Attractive aspects – bivariable analyses.* Compared to the referent (women who considered themselves to be attractive, with their most attractive aspect a non-body-image oriented feature, e.g., personality / deportment / other aspect), PDS score distributions for the other attractiveness aspect categories were slightly shifted to the right (Figure 6.1). Women who considered themselves attractive but ranked either “face” or “body type” as their most attractive feature had a 0.87 (95% confidence interval [CI]: -0.15, 1.88) and women who considered themselves “not attractive” had a 0.59 (95% CI: 0.21, 0.96) point higher PDS score (all increases are compared to the referent). Among women who considered themselves “not attractive”, the smallest PDS score point increase (0.45, 95% CI: 0.02, 0.88) was found for the subgroup who ranked a non-body-image oriented feature as their most attractive aspect. The other two subgroups – women who considered face/body type as their most attractive aspect (0.79, 95% CI: 0.18, 1.40) and women who considered themselves not attractive in any aspect (0.79, 95% CI: 0.06, 1.52) – had higher PDS scores than the referent (Table 6.3).

Obesity was associated with 0.36 point increase in PDS score among women and a 0.19 point *decrease* in PDS score among men.

### **Multivariable Analyses**

After adjustment for obesity, age, education, income, and household registration status, compared to the referent (women who considered themselves attractive and their most attractive aspect to be something other than a body image-oriented feature), women who rated themselves as attractive but ranked either “face” or “body type” as their most attractive feature had a 0.91 (95% CI: 0.00, 1.82) point higher PDS score. Women who considered themselves “not attractive”



had a 0.42 (-0.10, 0.94) higher PDS score if they ranked a non-“body-image”-oriented aspect as their most attractive feature, a 0.79 (95% CI: 0.21, 1.37) point higher PDS score if they ranked “face” or “body type” as their most attractive feature, and a 0.88 (95% CI: 0.10, 1.66) point higher PDS score if they considered themselves “not attractive in any aspect”. Obesity among women was associated with more psychological distress (0.64, 95% CI: 0.10, 1.19).

For men, there were only suggestions that ranking a body-image oriented feature as their most attractive aspect was associated with psychological distress. Compared to the referent (men who considered themselves attractive and their most attractive aspect to be something other than a body-oriented feature), men who self-rated as attractive, but ranked either “face” or “body type” as their most attractive feature had a 0.16 (95% CI: -0.75, 1.07) point higher PDS score. Men who considered themselves “not attractive”, but ranked a body image-oriented aspect as their most attractive feature had a 0.75 (95% CI: -0.39, 1.89) point higher PDS score. Men who considered themselves “not attractive in any aspect” had a 0.46 (95% CI: -0.32, 1.25) point higher PDS score. Although education was associated with psychological distress, the pattern was confusing: compared to men who had less than high school education, men who completed high school had 0.54 (95%CI: 0.35, 0.73) point higher PDS score, and men who continued education beyond high school had a 0.37 (95%CI: 0.03, 0.72) *lower* PDS score.

## **DISCUSSION**

We set out to explore the association between psychological distress and considering a body-oriented feature as one’s most attractive feature. We anticipated gender differences in the association. We observed that compared with Chinese women who ranked non-body-image oriented features as their most attractive feature, Chinese women who ranked “face” or “body type” as their most attractive feature — whether or not they considered themselves attractive —

reported more psychological distress. For Chinese men, these associations were weaker or absent. Obesity was associated with more psychological distress among women, but not among men.

Our findings complement and qualify previous findings about the relationship between attractiveness of one's body features and psychological health<sup>31, 40</sup>. The CHFLS found that women who perceived themselves unattractive had a 0.44 point higher mean PDS score ( $t=2.98$ ) and women who wanted to lose weight had a 0.56 point higher score ( $t=4.62$ )<sup>31</sup>. Men who considered themselves unattractive did not have higher PDS scores (0.00,  $t=0.00$ ). The CHFLS study, however, did not have data on self-reported attractive aspects.

By using these additional data, we found that even if a woman considers herself to be attractive, if she regards body image-oriented features ("face" or "body type") as the primary basis of her sexual attractiveness, she is still more prone to psychological distress. We have two possible explanations for this observation. First, for adult women, as they age, body- image-oriented features such as "face" and "body type" are increasingly difficult to maintain<sup>41-43</sup>, which becomes a significant source of stress for women who want to remain attractive but regard their attractiveness as arising mainly from physical appearance. Second, the fact that the respondents did not select a less superficial feature to be her most attractive feature (e.g., personality) may indicate overall lack of confidence arising from other aspects of self-identity, which is conducive to psychological distress as well<sup>44</sup>.

The major limitation of this study is in measurement. Our measures of attractiveness and attractive aspects are self-reported, highly subjective, and highly vulnerable to influences such as social desirability. We are not able to gauge the possible level of reporting bias for these measures in the absence of studies examining this question in China. However, sexual attractiveness is an inherently subjective construct. The variable attractive aspect comprises

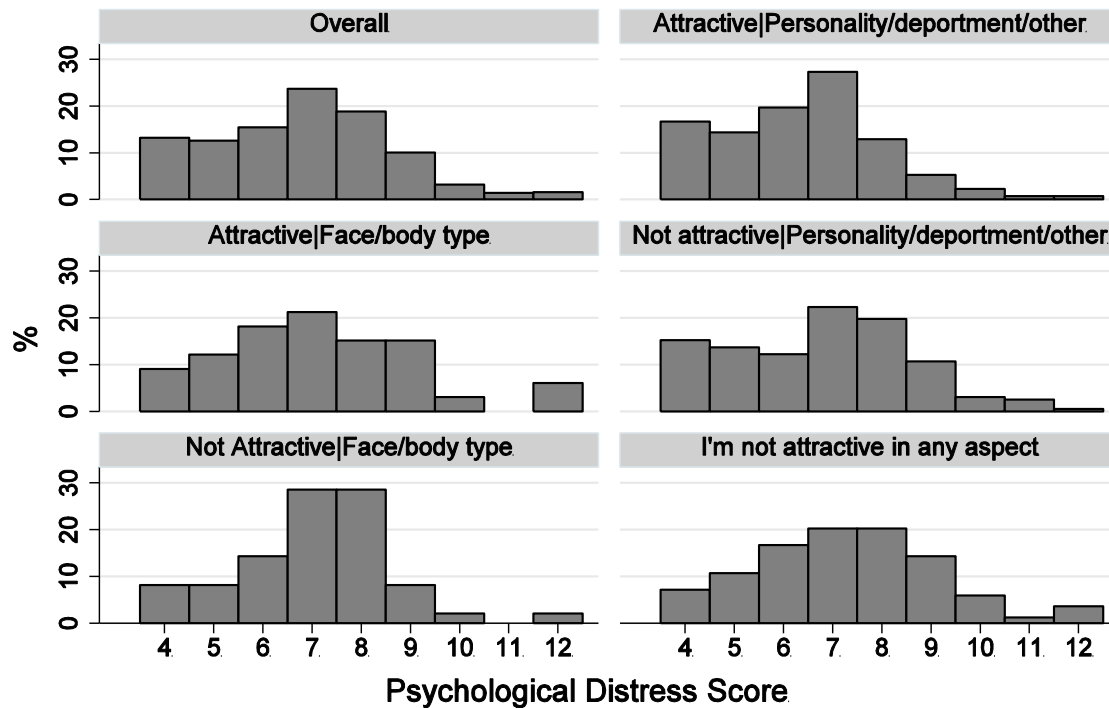
explicit components, which may reduce the disadvantages in performance from which subjective measures often suffer<sup>45</sup>. Our outcome of interest, psychological distress, was measured using only 4 items from the Zung depression scale. Nevertheless, the 4 items capture distinctive and important manifestations of psychological distress and demonstrated reasonable reliability in our study (Cronbach alpha =0.66). These four items were also used in the national study in China<sup>31</sup>, and the full Zung depression scale has been validated among a Chinese sample<sup>34</sup>. The measure of economic status was limited to personal monthly income, which besides possible reporting inaccuracy does not account for assets nor for income of other household members. Lastly, our study was based on cross-sectional data, and the direction of causality, should it be present, cannot be determined. For example, psychological distress could impair self-esteem, reduce perceived attractiveness, and diminish one's appraisal of one's personality.

## **Implications**

By probing the construct of sexual attractiveness, this study raises awareness of how assessments of one's sexual attractiveness relate to mental / physical health, and in doing so, suggests possibilities for improving quality of life for women. For example, the study results support intervention programs that encourage practitioners, such as social workers, nurses, psychotherapists, to be more aware of how personal conceptualizations of sexual attractiveness may influence psychological distress, and to develop psychotherapeutic approaches to improve self-concept with respect to perceived sexual attractiveness. In addition, the study results have implications for education campaigns helping children (especially girls) develop healthy concepts of attractiveness and self-worth, perhaps in schools.

**Figure 6.1** Distributions of self-rated 4-item Zung scale scores among women by Self-reported Attractiveness and Attractive Aspects, Liuzhou City, Guangxi province, China

**Figure 1 - Psychological Distress Score Distribution Among Women**  
N=499



Note. Graphs by Combinations of Self-rated Sexual Attractiveness and Attractive Aspects

**Table 6.1** Descriptive Statistics for Urban Chinese Men and Women Aged 18-61 Years in Liuzhou City, Guangxi Province, China, 2008

	Men (N=353)		Women (N=499)		Total (N=852)	
	No.	%*	No.	%*	No.	%*
Age (mean, SD)	38.7 (12.9)		38.0 (9.6)		38.4 (11.1)	
Age group (y)						
18-32	105	35.4	119	34.3	224	34.8
33-40	82	22.4	130	24.6	212	23.5
41-48	68	17.3	139	22.9	207	20.0
49-61	98	24.9	111	18.3	209	21.7
Household registration						
Urban	280	78.3	416	80.3	696	79.3
Rural	73	21.7	83	19.7	156	20.7
Education						
Less than high school	145	39.5	186	35.5	331	37.6
High school graduate	132	38.3	205	39.5	337	38.9
Beyond high school	176	22.2	108	24.9	184	23.5
Monthly income quartiles (CNY) <sup>Ω</sup>						
0-550 mean (SD)	248.8 (199.1)		260.2 (211.7)		255.7 (206.3)	
550-890 mean (SD)	707.5 (90.5)		704.1 (91.3)		705.7 (90.7)	
890 -1500 mean (SD)	1066.7 (125.6)		1019.8 (93.6)		1045.9 (114.6)	
>1500 mean (SD)	3505.1 (5293.6)		2664.0 (2810.2)		3201.7 (4565.6)	
BMI						
Obese (BMI≥28)	30	8.5	26	4.5	56	6.6
Not obese (BMI<28)	323	91.5	473	95.5	796	93.4
Respondent's sexual attractiveness <sup>‡</sup>						
Not much / not at all	227	64.0	326	64.4	553	64.2
Very much / somewhat	125	36.0	170	35.6	295	35.8
Most attractive aspect / feature <sup>†</sup>						
Personality / deportment / other	239	68.5	331	67.8	570	68.2
Face / body type	59	16.7	82	16.4	141	16.6
Not attractive	55	14.7	84	15.8	139	15.3
Attractiveness and Aspects combined						
Attractive, Personality/deportment/other	91	26.2	132	28.2	223	27.2
Attractive, Face / body type	29	8.4	33	6.5	62	7.5
Not attractive, Personality/deportment/other	148	42.3	197	39.5	345	41.0
Not attractive, Face / body type	30	8.4	49	9.8	79	9.1
Not attractive, not in any aspect	55	14.7	84	15.9	139	15.3

Notes: \* Weighted to the age-and-sex distribution of Liuzhou City (year 2006).

Ω CNY is Chinese Currency, Exchange rate between CHY and USD in year 2008 was 6.8 CNY per USD.

SD = standard deviation

‡ Missing data for 1 observation among women.

† Missing data for 2 observations among women.

**Table 6.2** Mean Psychological Distress Score by Attractiveness and Attractive Aspects for Urban Chinese Men and Women Aged 18-61 Years in Liuzhou City, Guangxi province, China, 2008

Variable	Men (n=353)		Women (n=497)		Total	
	Mean	95% CI	Mean	95% CI	Mean	95% CI
Entire Sample	6.51	(6.24, 6.78)	6.88	(6.58, 7.17)	6.69	(6.50, 6.87)
Attractiveness and attractive aspect						
Attractive, personality/deportment/other aspect is my most attractive feature	6.22	(5.66, 6.78)	6.44	(6.03, 6.84)	6.33	(6.00, 6.65)
Attractive, face/body type is my most attractive feature	6.41	(5.67, 7.16)	7.30	(6.53, 8.07)	6.78	(6.24, 7.33)
Not attractive, but personality / deportment / other aspect is my most attractive feature	6.58	(6.14, 7.02)	6.89	(6.55, 7.23)	6.72	(6.40, 7.04)
Not attractive, but face/body type is my most attractive feature	7.11	(6.28, 7.94)	7.22	(6.40, 8.04)	7.17	(6.53, 7.81)
Not attractive in any aspect	6.52	(6.14, 6.91)	7.23	(6.59, 7.87)	6.87	(6.50, 7.24)

*Notes.* Weighted to the age-and-sex distribution of Liuzhou City (year 2006). CI = confidence interval

**Table 6.3** Bivariable and Multivariable Analyses of Psychological Distress for Urban Chinese Men and Women Aged 18-61 Years in Liuzhou City, Guangxi province, China, 2008

Characteristics	Men (n=353)		Women (n=497)	
	Unadjusted $\beta$ (95% CI)	Adjusted $\beta$ (95% CI)	Unadjusted $\beta$ (95% CI)	Adjusted $\beta$ (95% CI)
Attractiveness and attractive aspect				
Attractive, personality/deportment/other aspect is my most attractive feature (Ref.)	0.00	0.00	0.00	0.00
Attractive, face/body type is my most attractive feature	0.19 (-0.79, 1.18)	0.16 (-0.75, 1.07)	0.87 (-0.15, 1.88)	0.91 (0.00, 1.82) *
Not attractive, but personality / deportment / other aspect is my most attractive feature	0.36 (-0.18, 0.91)	0.32 (-0.19, 0.83)	0.45 (0.02, 0.88) *	0.42 (-0.10, 0.94)
Not attractive, but face/body type is my most attractive feature	0.89 (-0.17, 1.85)	0.75 (-0.39, 1.89)	0.79 (0.18, 1.40) *	0.79 (0.21, 1.37) *
Not attractive in any aspect	0.30 (-0.44, 1.05)	0.46 (-0.32, 1.25)	0.79 (0.06, 1.52) *	0.88 (0.10, 1.66) *
Body-mass Index (Ref. BMI<28)				
BMI $\geq$ 28	-0.19 (-0.78, 0.41)	-0.14 (-0.68, 0.40)	0.36 (-0.49, 1.21)	0.64 (0.10, 1.19) *
Age (Ref. youngest age quartile, 18-32) (y)				
33-40	0.26 (-0.17, 0.69)	0.26 (-0.19, 0.72)	-0.42 (-0.88, 0.04)	-0.36 (-0.85, 0.13)
41-48	-0.37 (-1.05, 0.31)	-0.48 (-1.16, 0.21)	-0.42 (-0.84, 0.01)	-0.45 (-1.00, 0.10)
49-61	-0.30 (-0.65, 0.05)	-0.38 (-0.88, 0.12)	-0.68 (-1.33, -0.03)*	-0.64 (-1.31, 0.03)
Education (Ref. less than high school )				
High school graduate	0.66 (0.40, 0.91) *	0.54 (0.35, 0.73) **	0.08 (-0.50, 0.66)	0.26 (-0.40, 0.93)
Beyond high school	-0.26(-0.56, 0.04)	-0.37(-0.72, -0.03) *	0.26 (-0.18, 0.71)	0.47 (-0.13, 1.06)
Income (Ref. lower half)				
Upper half	0.02 (-0.29, 0.34)	0.00 (-0.41, 0.41)	-0.20 (-0.65, 0.25)	-0.24 (-0.85, 0.38)
Household Registration (Ref. urban)				
Rural	-0.14 (-0.46, 0.18)	-0.26 (-0.65, 0.14)	0.36 (-0.02, 0.74)	0.32 (-0.33, 0.98)

Notes. 1. Ordinary least squares regression models. 2. Values are adjusted for sampling strata, primary sampling units and population weights. 3. CI: Confidence Interval. 4. “\*”= P<.05, “\*\*”= P<.01

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## **CHAPTER 7 DISCUSSION**

The goal of this dissertation was to assess the relationship of sexual attractiveness with both sexual satisfaction and psychological distress. We approached sexual attractiveness both quantitatively (“Are you attractive to similarly aged members of the opposite sex?”, “Is your partner attractive to similarly aged members of the opposite sex?” ) and qualitatively (“In your opinion, which aspect of yourself is most attractive to similarly aged members of the opposite sex ?”).

### **Aim 1 Sexual Attractiveness and Sexual Satisfaction**

Our study identified positive associations of sexual satisfaction with sexual attractiveness and with the feeling that one’s partner takes enough care of one, though the associations were different for men and women. For men, the associations of partner’s attractiveness with emotional sexual satisfaction and with physical sexual satisfaction were both stronger than the corresponding associations for women, for which the prevalence ratios had confidence intervals that included the null value. Similarly, the associations of the feeling that one’s partner takes enough care of one with ESS and with PSS were stronger than the corresponding associations for women, which also had confidence intervals that included the null value. By contrast, self-rated sexual attractiveness was associated more strongly with women’s ESS and especially PSS than with men’s ESS and PSS. Only the prevalence ratio for women’s

physical sexual satisfaction had a confidence interval that excluded the null value. Self-rated sexual attractiveness seemed to be important for sexual satisfaction only for men who felt that they did not receive enough care from their partner, though both prevalence ratio estimates were imprecise.

## **Aim 2 Attractive Aspect and Psychological Distress**

Our study also found that, compared to women who rated themselves as sexually attractive with their most attractive aspect a non-body-image oriented feature: (1) women who rated themselves as attractive but ranked “face” or “body type” as their most attractive feature had a 0.91 point higher psychological distress score (PDS); (2) women who rated themselves as unattractive but ranked a non-body image aspect as their most attractive feature had a 0.79 point higher PDS; and (3) women who considered themselves “not attractive in any aspect” had a 0.88 point higher PDS. In summary, rating a body-image oriented feature as their most attractive feature, whether one considers oneself attractive or not, was associated with greater psychological distress among women. Equating sexual attractiveness with physical attributes may promote psychological distress.

## **Limitations**

The major and most important limitation for this work may be the measures used in the analyses. Self-reported measures, such as attractiveness aspects and sexual satisfaction, are subject to reporting error, especially social desirability bias. The construct of sexual attractiveness is inherently subjective. There is no objective measure of sexual attractiveness against which to evaluate the respondent’s rating. Since self-evaluation is likely to be influenced

by psychological distress, it is quite plausible that a woman who is distressed may be more likely to regard herself as unattractive. The measure of income was personal monthly income; data on household income, as well as on economic assets, may be more informative but were not available. Secondly, since this study is based on cross-sectional data, the direction of causality, should it be present, cannot be determined. Also, the proportion of men is much lower in this sample than in the Liuzhou population (41% men in the sample of urbanites in Liuzhou, age 18-61 years old; 52% men in the total population in Liuzhou<sup>1</sup>), but the response rate difference between men and women is not available. Lastly, Liuzhou city respondents report more active social and sexual behaviors than their national counterparts<sup>2</sup>, so generalizability of our findings will need to be evaluated.

## **Implications**

For aim 1, we found that for women and especially men to experience greater sexual well-being, feeling cared for in daily life was more important than self-rated sexual attractiveness in daily life. This observation raised the question of what does “being taken care of by a partner in daily life” entail? The global gender gap report ranked China 69<sup>th</sup> out of 136 countries in 2013, based on gender differences in such indicators as health, educational attainment, economic participation, and political empowerment<sup>3</sup>. China’s female labor-force participation rate has hovered around 75% in the past decade<sup>3,4</sup>, much higher than the global average of 52%<sup>5</sup>, and is the highest among the BRICS (Brazil 65%, Russia Federation 68%, India 30%, China 75% and South Africa 47%) countries<sup>3</sup>. (China’s men’s labor-force participation rate is 85%.) In addition to women’s significant participation in the workforce, women continue to bear most of the responsibilities at home: in China, women on average are spending 1.57 times more time than

men in unpaid work, mainly domestic work<sup>5</sup>.

With the competing demands of time and attention from work, family, and other aspects in life, to be able to achieve greater sexual well-being, men and women need to re-evaluate, re-assess, and effectively communicate about what it means to be “cared for” and their expectations of each other, and to come to agreement on practicably achievable goals.

Second, our results invite further discussions of the concept of “sexual attractiveness” and the issues in measuring it. In aim 1, we found the female partner’s sexual attractiveness was significantly associated with men’s emotional and physical sexual satisfaction, as well as with women’s physical sexual satisfaction. In aim 2, we found that compared with women who ranked a non-body-image oriented feature as their most attractive feature, women who ranked “face” or “body type” as their most attractive feature had significantly more psychological distress. Findings from aim 1 and aim 2 underscored the double role of sexual attractiveness: on the one hand, being more attractive is associated with greater sexual satisfaction (positive health impact); on the other hand, among women, self-rated sexual attractiveness that derives mainly from body-image oriented features is still associated with greater psychological distress (negative impact), even if a woman considers herself to be attractive. This observation illustrates how the same construct (sexual attractiveness) can have qualitative as well as quantitative dimensions, with both positive and negative health effects, and calls for careful treatment of the inherent complexity of constructs by researchers. In our modern world where sexual attractiveness is a major component of advertising campaigns<sup>6-8</sup> and where people, since a young age, are exposed to an environment that more often than not strengthens male/female stereotypes<sup>9</sup>, the pursuit of attractiveness should be looked at judiciously, with consideration of

both positive and negative potential effects, especially the negative impact of basing one's sexual attractiveness primarily on body image-oriented features.

Lastly, this dissertation underscores the sexual wellbeing gradients across age groups, education level, income level, gender, urban/rural status. For example, women's sexual satisfaction sharply declined after age 48 years for both emotional and physical sexual satisfaction. Men's sexual satisfaction, however, did not decline after age 48. People with more education, especially women, generally reported being less sexually satisfied. Higher income was associated with less sexual satisfaction among men but more sexual satisfaction among women. Because of the above-mentioned limitations in sample size, cross-sectional nature, and external validity, we are not able to capture the sexual stratification over time on a larger scale, but with China's increasing disparities in resources allocation between rich and poor, between regions, and between urban and rural<sup>10, 11</sup>, these gradients raise concerns of how these growing economic disparities may be producing corresponding disparities in sexual well-being.

### **Future Directions for Research**

Sexual wellbeing indicators are yet to become a part of routinely collected and monitored sexual health data in China. With the global movement toward a positive and more inclusive approach to "sexual health" underway, China can participate in this movement through collecting data that actively incorporate sexual well-being indicators. In particular, this line of research can document the sexual-being gradients across different age, income, sex groups, between urban and rural, and between different regions and ethnic groups, over time. Secondly, efforts should be made to incorporate the component of sexual wellbeing in routine health and education programs, such as programs targeting sexual and physical health among older women,



programs that address migrant health, or school curricula on sexual health education. Thirdly, the aforementioned research and data collection efforts need to be supported / supplemented by more sociology, psychology and culture studies that research social norms, gender roles, and other social and cultural factors in the China context. Such studies are currently very limited but necessary for more insightful evaluation of the sexual health data.

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