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The role of sexual self-schema in a diathesis–stress model of sexual dysfunction

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Abstract

Sexual self-schemas are cognitive generalizations regarding sexual aspects of the self that represent a core component of one's sexuality. We contend that individual differences in the sexual self-view represent an important cognitive diathesis for predicting sexual difficulty or dysfunction. We illustrate the role of sexual self-schemas on sexual behavior and responsiveness in healthy female and male samples. Next, we describe how diathesis–stress models of psychopathology have been applied to the sexual arena, and discuss the critical features of clinically useful diathesis variables. Drawing from these criteria, we examine the diathetic properties of sexual self-schemas. Finally, we discuss an empirical test of the proposed diathesis–stress interaction, reviewing the role of women's sexual self-views on sexual morbidity following diagnosis and treatment for gynecologic cancer.

Keywords

Diathesis-stress model; Sexual dysfunction; Sexual functioning; Sexual self-schema

Sexual difficulties are both widespread and clinically significant. Recent epidemiological research by Laumann, Gagnon, Michael, and Michaels (1994) obtained telling 1-year prevalence rates across a variety of specific sexual difficulties. Among women, 33% reported lack of sexual desire, 19% had difficulty with lubrication, and 24% were unable to reach orgasm. The male statistics were also significant. Commonly reported difficulties among men included climaxing too early (29%), sexual performance anxiety (17%), and low sexual desire (16%). Whereas 10% of all men surveyed reported significant erectile difficulties, prevalence rates increased with age–with more than 20% of men over age 50 reporting erectile problems. Hence, the sexual dysfunctions are perhaps one of the most common yet underreported of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV; American Psychiatric Association, 1994) diagnoses.

Many have commented on the relative dearth of comprehensive and testable models regarding the etiology and course of the sexual dysfunctions (e.g., see R R. Abramson, 1992). The exceptions, such as Barlow's (1986) theoretical model, often focus on the explication of male disorders. Yet, research indicates that female sexual dysfunction is wide- spread and may not fit neatly into existing androcentric conceptualizations. Moreover, there is concern that existing

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theoretical models, though conceptually heuristic, have had limited impact on the prevention or treatment of sexual dysfunction in the community or clinic (e.g., see Bancroft, 1997; Weiderman, 1998).

The current conceptual framework takes a cognitive approach to sexuality. Previously, we proposed the notion of individual differences in women's (Andersen & Cyranowski, 1994) and men's (Andersen, Cyranowski, & Espindle, 1999) view of themselves as sexual persons–or their *sexual self-schemas*. This approach to sexual assessment has been shown to predict sexual behavior and responsiveness. More- over, recent research indicates that this cognitive assessment tool may be used to predict sexual difficulty or dysfunction in certain at-risk populations (Andersen, Woods, & Copeland, 1997).

Sexual self-schemas represent basic or core beliefs about sexual aspects of oneself. As such, they guide sexually relevant information processing (Cyranowski & Andersen, in press) and future sexual behavior. When positive, sexual self- views may facilitate sexual responding. When sexual self- views are extremely negative, conflicted, or weak, however, they may represent a significant vulnerability factor, or *diathesis*, for the occurrence of subsequent sexual distress, difficulty, or dysfunction.

Using this cognitive, individual-difference approach to sexuality, we discuss sexual self-schema as a core psychological component of one's sexuality. We illustrate this phenomena with data from healthy adult female and male samples. We then provide an overview of the important elements of diathesis–stress models of psychopathology, and how these models have been applied to the realm of sexual dysfunction. Next, we enumerate the important qualities of clinically useful and statistically powerful diathesis variables, and how the sexual self-schema construct meets each of these criterion. We posit that when one's sexual self-view has aspects that are negative or weak, it can function as a diathesis for the subsequent development of sexual difficulty or dysfunction. Finally, we offer that stressful events—such as certain health stressors—may interact with sexual self-schema to create deficits in sexual functioning, and present an example of this diathesis–stress interaction from our work with gynecological cancer patients.

Sexual Self-Schema: An Overview

The Sexual Self-Schema Concept

Sexual self-view is an individual-difference variable that received little attention within the field of sexuality research (Simon & Gagnon, 1987; Whalen & Roth, 1987) until the work of Andersen and Cyranowski (1994). Following Markus' (1977) research on self-schematic cognitive processing and the idea that one's self-view may have multiple dimensions (Carver & Scheier, 1982; Epstein, 1980), Andersen and Cyranowski (1994) offered the concept of *sexual* self-schema as an aspect of one's self-view that is specific to one's sexuality. Sexual self-schemas have been defined as "cognitive generalizations about sexual aspects of oneself that are derived from past experience, manifest in current experience, influential in the processing of sexually relevant social information, and guide sexual behavior" (Andersen & Cyranowski, 1994, p. 1079).

The sexual self-schema construct has been operationalized for both women and men using trait-adjective ratings on the Sexual Self-Schema Scales (Andersen & Cyranowski, 1994; Andersen et al., 1999). This classic approach identified the trait adjectives most associated with a semantic representation of a "sexual woman" (as held by females), and that of a "sexual man" (as reported by males). Empirically based item selection criteria were used in a series of convergent and discriminant validity studies to develop both the female and male scales. (See Andersen & Cyranowski, 1994; Andersen et al., 1999, for further detail regarding scale

construction.) This procedure resulted in a set of self-report measures that are sexually relevant yet unobtrusive in nature—which is advantageous given response biases associated with more face-valid sexual self-reports (see Cantania, Gibson, Chitwood, & Coates, 1990; Weinhardt, Forsyth, Carey, Jaworski, & Durant, 1998).

Development of the female version of the Sexual Self- Schema Scale indicated that whereas some women report largely positive sexual self-views, numerous others report predominantly negative or conflicted views of the sexual self. Specifically, the female Sexual Self-Schema Scale includes two positive factors: (a) a tendency to experience passionate/romantic feelings; and, (b) behavioral openness. In addition, women's sexual self-schemas may include negative elements, such as (c) embarrassment or conservatism, which deter or inhibit sexual expression (Andersen & Cyranowski, 1994; Cyranowski & Andersen, 1998c). Examples of items on each of the three female schema factors include: romantic, passionate, loving (factor 1); direct, straight-forward, frank (factor 2); and embarrassed, conservative, self-conscious (factor 3). (For a copy of the full scale, see Andersen & Cyranowski, 1994)

Given the existence of both positive and negative factors, the women's Sexual Self-Schema Scale can be scored in two ways. Original scoring procedures, based on a *bipolar* model of women's sexual self-view, uses a linear combination of all three schema factors (i.e., adding items on factors 1 and 2, and subtracting items on factor 3). This scoring procedure places respondents on a single continuum ranging from *negative* to *positive* sexual self-views. Alternatively, a *bivariate* scoring procedure, in which women's positive and negative sexual self-views are viewed as *independent* dimensions, has been tested. This more complex scoring procedure uses median splits of both the positive (sum of factors 1 and 2) and negative (factor 3) schema factors to categorize respondents into four schema groups: *negative* (low on positive factors, high on negative factor); *aschematic* (low on both positive and negative factors); *coschematic* (high on both positive and negative factors); and *positive* (high on positive factors, low on negative factor). Although it is more complex and requires larger samples, the bivariate scoring procedure has shown both conceptual and methodological utility, particularly in the identification of *aschematic* and *coschematic* scorers, or women who hold conflicted views of their sexuality that include both positive and negative components (see Cyranowski & Andersen, 1998a, in press). For simplicity, however, in the current article we will limit our discussion to the distinction of women with predominantly *positive* versus *negative* sexual self-views.

Women with positive and nonconflicting sexual self-views tend to see themselves as romantic and passionate individuals who are behaviorally open to experience, and who are generally *not* limited by such negative feelings as embarrassment or self-consciousness. In contrast, women with predominantly negative views of the sexual self see themselves as conservative, embarrassed, and self-conscious, as behaviorally inhibited, and as generally less passionate or romantic. Consistent with these self-views, women with positive sexual self- schemas describe themselves as more "sexual" than their peer group, and hold high levels of esteem regarding their skill as a sexual partner. This is in stark contrast to negative schema scorers, who tend to rate themselves as less "sexual" and as holding relatively low levels of sexual esteem (see Andersen & Cyranowski, 1994; Cyranowski & Andersen, 1998a).

Recent scale-development research indicates that men's sexual self-views also consist of three primary components, although these do not completely parallel those obtained with women (Andersen et al., 1998). Cross-gender similarities were found for two of the three schema factors: romantic- passionate and behaviorally open self-views. Mirroring our findings with women, the first factor of the men's Sexual Self-Schema Scale includes romantic, passionate, and loving self-views. This, we have argued, represents a cognitive-affective dimension that should facilitate the development of romantic attachments (Andersen & Cyranowski, 1994;

Cyranowski & Andersen, 1998a). Differing from women, however, the second (and quite large) factor of the men's Sexual Self-Schema Scale is related to powerful, independent, and aggressive self-views. This component of men's sexuality would appear to relate to the broader, gender-specific goals of "agency" or "individuality"—as translated to the sexual domain (see Bakan, 1966; Feingold, 1994). Finally, the third and smallest factor of the men's scale relates to behaviorally open self-views-which is similar to factor 2 of the female schema scale. Examples of items on this third factor include liberal, open-minded, and broad-minded. (For a copy of the full scale, see Andersen et al., 1999.)

We note that the three male schema factors—that is, (a) passionate-loving, (b) powerful-independent, and (c) open- liberal self-views—are all *positive* in valence. This absence of a negative factor in the men's Sexual Self-Schema Scale is not random. Many negative items were included in the item-selection process, but most were excluded because of high (negative) correlations with measures of social desirability and/or self-esteem. Men's sexual self-schema scores are thereby calculated by summing all three of the positive factor scores. Thus, whereas women's sexual self-views may range from negative to positive, men's sexual self-views vary from "aschematic" to "schematic" (with schematics holding highly positive views of the sexual self). Males who hold strong and well-developed sexual self-schemas tend to view themselves as romantic, powerful, and open individuals; whereas "aschematic" males do *not* view these traits as particularly self-descriptive. That is, men who score lowest on the Sexual Self-Schema Scale are not describing themselves in negative terms; they are simply not endorsing positive, sexually relevant adjectives as particularly self-descriptive. Consistent with their self-views, schematic men rate themselves as being more "sexual" than their aschematic counter- parts (Andersen et al., 1999).

Sexual Self-Schema and Sexual Functioning

We have postulated that sexual self-schemas should relate to predictable patterns of sexual behavior and responding (Andersen & Cyranowski, 1994; Andersen et al., 1999). Specifically, women with positive views of the sexual self should provide descriptions of their sexual thoughts, feelings, and behaviors that differ from women who espouse negative sexual self-views. Similarly, sexually schematic males should describe their sexual lives differently than their aschematic counterparts. In the following sections, we review evidence to support these predicted differences in the sexual-romantic functioning of females and males who hold differing sexual self-views.

Women's Sexual Behavior and Responsiveness

Extensive findings obtained across multiple samples of college-aged females (see Andersen & Cyranowski, 1994; Cyranowski & Andersen, 1998, for sample demographics) support the relationship between women's sexual self-views and both past and current sexual behaviors. Women with positive sexual self-schemas, for example, describe more extensive sexual histories than their negative-schema counter-parts. Positive-schema women, as compared to negative- schema scorers, report that they have experienced a broader range of sexual activities, more sexual partners, and more brief sexual encounters. Positive-schema women also report a greater frequency of sexual activity during the "past 30-day" time period, and, furthermore, predict that they will have more sexual partners over the next 5 years (Andersen & Cyranowski, 1994). In contrast, women with negative sexual self-views not only engage in fewer and less frequent sexual activities; they also report higher levels of sexual anxiety as well as greater active *avoidance* of sexual involvement (Cyranowski & Andersen, 1998).

In addition to these differences in sexual behavior, women's sexual self-views also relate to differences in their sexual responsiveness. For example, negative-schema women report lower levels of sexual desire (as measured by the Sexual Responsiveness Scale; Andersen, Andersen

& deProsse, 1989), and are less preoccupied with sexual thoughts (as assessed with the Sexuality Scale; Snell & Papini, 1989). In other words, women with negative sexual self-schemas report relatively less interest in sexual activity and fewer sexual thoughts or fantasies than women with positive sexual self-views (Andersen & Cyranowski, 1994; Cyranowski & Andersen, 1998a). This relatively low level of sexual desire, although itself not dysfunctional, may in extreme cases reflect a predisposition for developing *hypoactive sexual desire disorder*–*a* disorder marked by a general disinterest in sexual activity and few or no sexual cognitions (e.g., see Leiblum & Rosen, 1988; Nutter & Condron, 1983).

Positive- and negative-schema women also report differences in their perceived levels of sexual arousal. For example, women with positive sexual self-views report a greater capacity to become aroused across a variety of sexual activities (as assessed by the Sexual Arousability Index; Andersen, Broffitt, Karlsson, & Turnquist, 1989; Hoon, Hoon, & Wincze, 1976). In contrast, negative-schema women are more likely to experience arousal difficulties, including reports of occasional vaginal tightness, pain, or discomfort with penetration or intercourse (Cyranowski & Andersen, 1998a). It is important to note that on average, negative- schema women do not report regular or recurrent difficulties with sexual arousal, but rather a potential proclivity to experience occasional arousal difficulties.

Women's Romantic Relationships

In addition to the obvious connection between sexual self- schemas and sexual functioning, positive sexual self-views may also facilitate the development of romantic or emotional attachment as a context for sex. College-aged positive- schema scorers report more extensive histories of previous romantic relationships, are more likely to be in current relationships, and are more likely to describe their relationships as "partnered" or "engaged"–as compared with negative- schema women. Positive-schema scorers also report being passionate about their romantic partners (as assessed by the Haffield Passionate Love scale; Hatfield & Sprecher, 1986), and are comfortable with emotional intimacy in their relationships. In contrast, negative-schema women report lower levels of passionate love, a relative avoidance of emotional intimacy, and elevated levels of anxiety about being unloved or abandoned by their romantic partners. In other words, negative-schema women are more likely to report anxious and/or avoidant attachment styles, whereas positive-schema scorers are more likely to report secure attachments within romantic relationships. [Attachment, in this case, was operationalized using Simpson's (1990) adult attachment scale.] These data confirm the twofold press of positive sexual self- schema: women with positive sexual self-views are not only open to sexual relationships, but they are, by their own report, able to form emotionally intimate love relationships (Cyranowski & Andersen, 1998a).

Summary: Women's Sexual Self-Schema Findings

Women with positive and nonconflicting sexual self-views describe themselves as emotionally warm and passionate individuals who are behaviorally open to romantic and sexual relationships. These women tend to be liberal in their sexual attitudes, and are generally uninhibited by self-consciousness, embarrassment, or sexual anxiety. Conversely, women with clearly negative sexual self-views describe themselves as relatively less romantic or passionate, and as inhibited in their sexual and romantic relationships. These women tend to view themselves as embarrassed, conservative, and at times anxious when faced with sexual situations. Behaviorally, college-aged positive-schema scorers report a wider range of lifetime sexual activities, and anticipate more sexual partners in the future than their negative-schema counter-parts. Nonetheless, it is important to note that women with positive sexual self-views also display emotionally intimate attachments to romantic partners. Thus, having a positive view of the sexual self would appear to facilitate the development of romantic, as well as sexual, attachments in women. In contrast, women with negative sexual self-views tend to report a

pattern of anxiety and avoidance in both *sexual and romantic* relationships (Cyranowski & Andersen, 1998a).

Men's Sexual Behavior and Responsiveness

Next, we consider the connection between sexual self- schemas and men's sexuality. The available evidence, obtained across multiple samples of college-aged males (see Andersen et al., in press, for further demographic information), supports the hypothesized differences between sexually schematic versus aschematic men's sexual functioning (Andersen et al., in press). Turning to the behavioral domain, schematic men report a greater repertoire of sexual behaviors than aschematic men. Specifically, schematics report a more extensive range of sexual activities, more lifetime sexual partners, and more brief (one-night) sexual encounters. In addition, when asked about their expectations for the future, schematic men predict that they will be involved with a greater number of sexual partners, as compared with the more conservative predictions of their aschematic counter-parts. Sexually schematic versus aschematic scorers also differ in their reports of sexual responsiveness. Specifically, schematic men report greater levels of sexual arousal across a variety of sexual situations, as compared with their aschematic counterparts (Andersen et al., 1998).

Men's Romantic Relationships

In line with findings for females, positive sexual self- views also appear to facilitate the development of romantic, as well as sexual, relationships for males. Specifically, sexually schematic men report more extensive romantic relationship histories and greater levels of passionate love for romantic partners, as compared with aschematic scorers. Indeed, in one college-aged sample, a full 30% of aschematic scorers reported that they had "never fallen in love," as compared with only 8% of sexually schematic men. In contrast, whereas 69% of schematic males reported being in a current romantic relationship, only 30% of their aschematic counterparts reported current romantic involvement (Andersen et al., in press). Hence, it would appear that a positive view of one's sexuality facilitates romantic involvement in men. To date, however, research has not tested the potential relationship between men's sexual self-views and their romantic attachment styles.

Summary: Men's Sexual Self-Schema Findings

A sexually schematic man is one who views himself as loving and passionate, powerful and independent, and is open-minded in his sexual attitudes. Our data suggest that schematic and aschematic men hold very different views of the sexual self, and that these sexual self-views relate to differences in both sexual behaviors and responsiveness. Compared with aschematic scorers, schematic men are clearly more sexually experienced. They report more lifetime sexual activities, some of which occur without commitment, and they have a wider repertoire of sexual behaviors. Men's sexual self-views also relate to patterns of sexual responsiveness, as schematic men report higher levels of sexual arousal than do aschematic scorers. At the same time, males with highly positive sexual self-views may be particularly capable of developing romantic attachments to relationship partners. For example, when compared with aschematic scorers, sexually schematic men report greater feelings of passionate love and are more apt to become involved in romantic relationships.

Conversely, aschematic men report very different sexual lives. Aschematic scorers do not view themselves as particularly passionate, powerful, or open individuals. Moreover, our findings suggest that sexually aschematic males report a narrower range of sexual activities, lower levels of sexual arousal, fewer sexual partners, and lower rates of romantic relationship involvement —as compared with their sexually schematic counterparts (Andersen et al., in press).

Other Sources of Concurrent Validity

Accumulating data indicate that sexual self-schemas relate to predictable patterns of sexual behavior and responsiveness within healthy female and male samples. In addition, schema scores display concurrent validity in association with other individual differences related to the sexual domain, including such behavioral-attitudinal constructs as sociosexuality (Simpson & Gangestad, 1991); affective constructs such as erotophobia–erotophilia (Fisher, White, Byrne, & Kelly, 1988); and alternate cognitive constructs such as sexual esteem (Snell, Fisher, & Schuh, 1992; Snell & Papini, 1989). Our data indicate that sexual self-schema scores predictably correlate with, yet do not overlap, these alternate sexual constructs (Andersen & Cyranowski, 1995). Moreover, path-analytic results with female data lend further support to the cognitive nature of the schema measure. For example, whereas direct associations were obtained between schema scores and *cognitively laden* sexual-esteem scores, the influence of sexual self-schemas on *affectively laden* erotophobia scores were mediated by the effects of women's positive and negative sexual self-views on relevant positive and negative sexual affects (specifically, sexual arousal and sexual anxiety, respectively; see Cyranowski & Andersen, 1998a, for further detail).

Utility of the Diathesis–Stress Conceptualization for Predicting Sexual Dysfunction

Multiple factors have been proposed to explain the etiology of disturbances in sexual functioning. Currently, most researchers and clinicians espouse an interactional approach to understanding the development and maintenance of sexual dysfunction (Bancroft, 1983; Barlow, 1986; Byrne, 1986). Possible etiologic factors may be grouped into three broad categories: physiological, psychological, and interpersonal. Physiological or biological factors have traditionally taken a prominent role in attempts to untangle the etiology of sexual dysfunction, particularly in men. Known biological risk factors have included chronic illnesses, such as diabetes mellitus, chronic pain, and chronic obstructive pulmonary disease, as well as cancer, cardiovascular disease, and renal disease (Schrover, 1989; Schrover & Jensen, 1988). The list of psychological factors is extensive, and includes family-of-origin issues, sexual trauma, and personality variables (e.g. erotophobia–erotophilia, sex guilt), among others. Interpersonal factors have focused largely on marital/couple conflict and distress.

Clearly, the literature does not suffer from a paucity of potential etiologic contributors to the sexual dysfunctions. Many have speculated as to the role of various factors as either: (a) *predisposing* one to develop a future sexual dysfunction, (b) *precipitating* the onset of dysfunction, or (c) *maintaining an* existing dysfunction. For example, latent physiological factors such as cardiovascular or neurological problems, or psychological factors such as neuroticism or sex guilt have often been discussed as distal factors that may predispose one to develop sexual difficulties. In contrast, acute physiological or interpersonal events such as the onset of medical illness or marital conflict may proximally trigger sexual-dysfunction onset. Finally, psychological factors such as performance anxiety and cognitive-attentional processes have been implicated as factors that may maintain or exacerbate existing sexual difficulties (Barlow, 1986; Beck, Barlow & Sakheim, 1983).

The classification of potential etiologic variables into discrete causal categories oversimplifies the true pathogenic process, however. Indeed, most sex researchers and clinicians subscribe to an "interactive" model of sexual dysfunction—a complex pathogenic process in which multiple biological and psychosocial factors interact to shape the cognitive, affective, and behavioral response of the individual (and, most likely, the individual's social environment). Factors may alternately have predisposing, precipitating, and maintaining influences on sexual dysfunction across time. To illustrate, both depression and marital distress have been implicated as potential

etiologic factors in the development of sexual-desire disorders, particularly in women (Schreiner- Engel & Schiavi, 1986; Trudel, Boulos, & Matte, 1993). Hence, a history of dysthymia and chronic marital dissatisfaction might individually and interactively constitute pre- disposing factors for the development of hypoactive (or low) sexual desire. The onset of acute marital distress, accompanied by a potential exacerbation in depressive symptoms, might subsequently precipitate the onset of a diagnosable sexual dysfunction. Finally, depressogenic cognitive patterns, low self-esteem, and ongoing marital difficulties may interact to maintain the woman's sexual dysfunction. Hence, the same etiologic risk factor may affect sexual outcomes via a variety of causal mechanisms over the pathogenic course of the disorder, interacting with alternative risk factors and sexual outcomes in the process.

Notably, this level of etiologic complexity is apparent not only for the sexual dysfunctions, but also for other areas of common adult psychopathology, such as the mood and anxiety disorders. In an attempt to understand the multiple antecedents of these disorders and to systematize ongoing research, a number of general theoretical models have been developed. Among the most common of these are diathesis–stress models of psychopathology. Originally developed in the context of schizophrenia research (Bleuler, 1963; Meehl, 1962; Rosenthal, 1963), these models specify commonly held beliefs that psychopathology onset occurs when individuals with particular vulnerabilities (be they genetic, physiological, cognitive, or personality-based) are faced with specific environmental stressors, that trigger the onset of the disorder in the vulnerable individual. Subsequent diathesis–stress models have been elaborated and empirically tested in both anxiety (e.g., Barlow, 1988; others) and depression research (e.g., L. Y. Abramson, Metalsky, & Alloy, 1989; Beck, 1987; Hammen et al, 1995).

Theoretical formulations derived from diathesis–stress frameworks have not proceeded without criticism, however. Over 25 years ago, David Rosenthal (1963) commented that "the great majority o f … [diathesis–stress theories] are … exasperatingly loose, since the nature of the predispositions and the stressors, as well as the mechanisms of interaction, are usually only vaguely conceived or formulated" (p. 509). This early critique has been echoed by contemporary researchers, who have called for future diathesis–stress theories that include: (a) increased specification and reliable measurement of diathesis variables; (b) diatheses that are psychopathology specific (as opposed to nonspecific diatheses, such as low self-esteem); (c) diatheses that show stability across time (and are not simply concomitant symptoms of the to-be-predicted psychopathology); (d) direct tests of the congruency hypothesis (i.e., that it is the "match" between one's diathetic vulnerabilities and stressful life events that predicts disorder onset); and, (e) rigorous tests of specified models using prospective, longitudinal research (see Barnett & Gotlib, 1988; Coyne & Whiffen, 1995; Monroe & Simons, 1991). As Monroe and Simons (1991) argue, "these possibilities make more explicit the pathways that future research should address to develop a better understanding of the meaning and importance of such [diathesis–stress] interactions. In turn, research findings that are based on such approaches will contribute to more informed programs for risk detection and prevention" (pp. 421–422).

We suggest that the application of well-specified diathesis–stress models to the realm of sexual dysfunction research would be an important advance. Such models would help to guide programmatic research to clarify and integrate the etiologic relevance of specific risk factors for sexual dysfunction. Such research, might, in turn, display greater potential for application to both treatment and prevention strategies within specified at-risk groups. We now turn to the proposed diathesis: individual differences in one's sexual self-view, or sexual self-schema.

Sexual Self-Schema as a Cognitive Diathesis for Sexual Dysfunction

Several criteria must be met to establish the sexual self-schema construct as a useful diathesis in diathesis–stress models of sexual dysfunction. To maximize the clinical utility of such models, diathetic factors must be: (a) measurable in a brief and reliable manner; (b) specific

to the sexual realm; (c) stable across time; (d) capable of interacting with sexually relevant stressors; and (e) predictive of pertinent sexual outcomes, as empirically verified in prospective research. In the following sections, we provide evidence supporting the proposal of sexual self-schema as a useful diathesis.

Measurement Criterion

The first criterion for establishing the sexual self-schema construct as a useful diathesis is demonstrating that it can be measured in a practical and reliable manner. Several steps have been taken to establish adequate measurement of sexual self-schemas. First, in developing the Sexual Self-Schema Scales, rigorous psychometric standards (e.g., Campbell & Fiske, 1959; Cronbach & Meehl, 1955) were applied, and the construct of sexual self-schema can be validly and reliably measured via gender-specific self-report forms (Andersen & Cyranowski, 1994; Andersen et al., 1998; Cyranowski & Andersen, 1998c). Second, both the male and female versions of the Sexual Self-Schema Scales are brief and easy to administer. Specifically, respondents rate whether a series of 45–50 trait adjectives are self-descriptive, on a Likert scale ranging from "0 = *Not at all descriptive of me"* to "6 = *Very much descriptive of me."* Finally, these scales represent non-invasive and unobtrusive measures of sexual cognition. In fact, because of the nonexplicit nature of this measure, individuals are typically unaware that sexuality is being assessed. This unobtrusive characteristic is particularly valuable given historical difficulties with measurement error (because of selection bias, item refusal, underreporting, sexual bragging, etc.) in more traditional sexual self-reports (see Catania et al., 1990; Weinhardt et al., 1998). Thus, reliable and unbiased assessment of sexual self-schema can be provided. In fact, the measurement Characteristics of the Sexual Self-Schema Scales represent a distinct advantage over many other measures.

Specificity Criterion

A useful diathesis should also be domain specific; or, in this case, it should be *sexuality* specific. First, sexual self-schemas should be related to people's reports of sexually relevant variables, such as sexual behavior, sexual responsiveness, and relationship functioning. Research has, in fact, shown a connection between sexual self-schemas and sexual functioning in healthy individuals (see the preceding section, entitled "Sexual Self-Schema and Sexual Functioning"). Second, if sexual self-schemas are specific to the sexual realm, they should provide better predictions of sexual functioning than other nonspecific diatheses, such as low self-esteem. In support of this predictive utility, research has shown that sexual self-schemas display sex-specific incremental validity over such broad-band personality variables as self-esteem, extroversion, and neuroticism (Andersen & Cyranowski, 1994, 1995; Andersen et al., in press). That is, sexual self-schemas explain a significant proportion of the variance in sexual attitudes and responsiveness above and beyond that explained by other, nonspecific measures of personality.

Stability Criterion

It has been argued that diathetic variables should also be stable across time. Evidence suggests that a person's sexual self-view is, in fact, a relatively stable construct. High test-retest reliabilities have been obtained for both the female schema scale ($r = .88$, $p < .0001$, over a 9-week interval), and the male schema scale ($r = .81$, $p = .0001$, over a similar 9-week time interval). These findings suggest that both the male and female versions of the Sexual Self-Schema Scale display good temporal reliabilities, at least over a 2-month time period.

Interactive and Predictive Properties

The final two criteria regarding conceptually and statistically robust diathetic variables are, perhaps, the most difficult to demonstrate empirically. Specifically, demonstration of these

criteria require that one test: (a) the interaction between the proposed "diathesis" and relevant "stressor," and (b) the ability of the diathesis to predict relevant outcomes of interest. Existing sexual self-schema research serves as a framework from which to make specific predictions regarding these final diathetic criterion. Specifically, we hypothesize that negative-schema women and aschematic men may be at greater risk for a variety of sexual dysfunctions, including hypoactive sexual desire, arousal difficulties, or, in extreme cases, sexual aversion. For example, research tells us that women with clearly negative sexual self-views report lower baseline levels of sexual activity, less sexual desire, higher levels of sexual anxiety, and more frequent sexual arousal difficulties. The vulnerability of negative schema women to develop sexual dysfunction may also stem from their reportedly lower levels of other positive affects that may influence sexual excitement or arousal—specifically, the experience of passionate love within romantic relationships. According to Walster and Berscheid (1974), feelings of love and passion may be correlated with reports of sexual desire or arousal (see Hatfield & Rapson, 1993 for a thorough discussion). Thus, lower levels of passionate love, combined with anxious or avoidant romantic-attachment tendencies, may combine to produce an increased vulnerability for negative sexual self-schema women to develop sexual difficulties within partnered relationships.

In addition, we hypothesize that individual differences in sexual self-views will specifically predict the experience of sexual difficulty or dysfunction in the face of certain sexually relevant stressors. Specifically, we posit that individuals who have positive and nonconflicting sexual self-views will be better "immunized" to cope with stressors that have particular relevance to the sexual arena. In contrast, we hypothesize that individuals with negative, conflicted, or weak views of the sexual self will be vulnerable to have sexually relevant stressors trigger the onset of sexual difficulty or dysfunction. There are a number of reasons why this may be the case. For example, individuals with a positive view of the sexual self may be more resilient to mild sexual changes that may occur under certain stressful conditions (such as medical illness, temporary marital conflict, etc.), attributing these changes to external circumstances. In contrast, individuals with weak or negative sexual self-views may be more likely to perceive and attribute sexual problems to negative, internal factors, which may further affect mood (i.e., anxiety, depression) and attentional processes, and thereby exacerbate sexual difficulties (also, see Barlow, 1986). In addition, individuals with a positive view of the sexual self may feel more comfortable discussing sexual changes and communicating varying sexual needs with their partners; whereas individuals with weak or negative self-views may display communication deficits and negative internal attributions that exacerbate sexual problems within the dyad.

The specific mechanisms by which sexual self-views influence sexual outcomes may vary by the nature of the environmental stressor and the to-be-predicted sexual outcome. Next, we provide empirical support for the diathetic influence of negative sexual self-views on women who faced a sexually relevant stressor: the diagnosis and treatment of gynecologic cancer.

An Empirical Test of Sexual Self-Schema as a Diathesis for Sexual Morbidity

The view of cancer as a sexually relevant stressor comes from substantial research with cancer patients. Several controlled studies, retrospective as well as longitudinal, document that sexuality is a life area that undergoes a major change for women with cancer (see an early review by Andersen, 1985). Many studies have described the sexual problems of those with gynecologic cancer, and these studies suggest that approximately 50% of women experience persistent sexual difficulty or dysfunction (e.g., see Andersen & van der Does, 1994, or Weimar Shultz, van de Weft, Hahn, & Bouma, 1992, for later reviews). None of these studies, however, have specified models for predicting which women will be at risk for the development of sexual problems following cancer diagnosis and treatment.

In our clinical work with cancer patients, we have seen the stress of cancer affect women's sexual lives in a variety of ways. During group sessions with breast-cancer patients, we have asked women to discuss how their experience of cancer has (or has not) affected their sexuality. Some women report that their sexual lives have been relatively uninterrupted by their cancer experience. Although these women admit that certain consequences of the cancer (e.g., a sensitive surgical site, hormonal changes) have required them to make adjustments in their sexual routines, they report that they have successfully maneuvered these adjustments and remain sexually active. Other women remark that their sex lives have been dramatically changed by their cancer diagnosis and treatment, however. These women report noticeable decreases in interest and activity.

In other words, research evidence—as well as our clinical experience—suggests that the impact of cancer on women's sexuality differs across women. Thus, the cancer "stressor," in and of itself, does not explain women's sexual-functioning outcomes. It is here, we argue, that the schema construct may be relevant; that is, sexual self-schema may help explain why some women's sexual lives are radically interrupted by the cancer stressor, whereas other women's sexuality seems relatively unaffected. Such information could be of tremendous value, as limited resources for psychosocial services make it increasingly important to identify those individuals most in need of preventative or rehabilitative care.

Thus, we set out to examine sexual self-schema's ability to predict risk for sexual morbidity among cancer survivors. Because this was an initial test, we chose an efficient strategy (a cross-sectional design) and a cancer group (women treated for gynecologic cancer) with a high incidence (approximately 50%) of sexual morbidity. Consistent with our diathesis–stress conceptualization, we predicted that women with negative sexual self-schemas would be at a greater risk for sexual difficulties during the survivor period. Specifically, women with negative self-views of their sexuality were predicted to have lower levels of general sexual responsiveness and, in fact, to engage in lower rates of sexual behavior. Conversely, women with a positive sexual schema were predicted to have higher levels of sexual responsiveness and higher rates of sexual behavior.

In formulating this question, we were mindful of at least three other variables that might be important correlates of sexual morbidity following gynecological cancer (Andersen, 1993, 1994). First, sexual status before the onset of cancer was thought to be important. This included consideration of whether a woman was sexually active (i.e., sexually active versus inactive), and, if active, a quantification of important sexual activities, such as intercourse frequency. The predictive usefulness of sexual-status variables for adult sexual behavior extends beyond tests with healthy adults (see Kinsey, Pomeroy, Martin, & Gebhard, 1953, as well as contemporary demonstrations, Laumann et al., 1994; Wyatt, Peters, & Guthrie, 1988a, 1988b) to studies of sexuality for adults with chronic conditions and illnesses (e.g., Curry, Levine, Jones, & Kurit, 1993). Second, cancer and its treatment may directly change the sexual body and sexual responses. Distinctions among the extent of disease and treatments were made using disease stage and treatment information, including data about toxicities and short-and long-term side effects. For women with gynecologic cancer, studies have shown differential levels of morbidity from limited surgeries, for example, in contrast to radical surgeries or combination therapy (see Andersen & van der Does, 1994 for a review). Third, health status in general, and hormonal status in particular, are important correlates of sexual functioning for women. For example, menopausal changes can produce significant gynecologic and psychologic effects (see Pearce, Hawton, & Blake, 1995, or Walling, Andersen, & Johnson, 1990, for discussions), Thus, in considering these variables, we formulated a difficult test for the schema construct: Would sexual self-schema predict posttreatment sexual functioning beyond known correlates, specifically prior sexual status, extent of disease and treatment, and menopausal symptoms?

Sixty-one women initially diagnosed with Stage I or 1I gynecologic cancer participated. Forty of these women were sexually active and included in the analyses detailed in the text that follows. Cancer treatments received included surgery only or combinations of surgery, radiotherapy, and chemotherapy. Mean time since diagnosis was 21.4 months (range, 8 to 60 months; *SD* = 12.4 months), and mean times since treatment was 18.8 months (range, 6 to 57 months; *SD* = 12.3 months). A demographic analysis revealed that the mean age for the participants was 49 years (range, 24 to 73; *SD* = 13.4), the mean level of education was 13 years (vocational school), the average income ranged from $20,000 to $35,000, and the racial distribution of the group was 2 African American and 59 Caucasian women. A majority (79%) of the sample was postmenopausal, either naturally (46%) or prematurely (33%) as a result of cancer treatment, and 66% were married or living with a parmer.

We used two hierarchical multiple-regression analyses to test the relationship between sexual self-schema and sexual morbidity. For both, we entered the following variables into the regression analysis: sexual functioning before diagnosis (Step 1), extent of disease treatment (Step 2), current menopausal symptoms (Step 3), and, finally, sexual self-schema scores (Step 4). (See Andersen et al., 1997, for a discussion of how these variables were operationalized.) For the first analysis, each control variable added significant incremental variance to the outcome for current sexual behavior (frequency of intercourse and nonintercourse activities). Specifically, prior sexual frequency predicted 24% of the outcome variance, whereas extent of disease treatment and menopausal status each predicted an additional 9%. Following these, schema added an additional significant 6% of the variance, with a total of 48% of the variance accounted for by the predictors. A second analysis was conducted to predict current sexual responsiveness, as measured by a 25-item questionnaire assessing the sexual response cycle. For this outcome, only sexual self-schema was a significant predictor, adding an increment of 28% of the variance. The other variables played a lesser role (prior sexual activity, 0%; extent of disease treatment, 4%; and menopausal symptoms, 2%). The entire model accounted for 34% of the variance in sexual responsiveness.

In summary, we tested the schema construct with a gynecological cancer sample in the prediction of two different sexual outcomes–sexual responsiveness (e.g., desire, excitement, orgasm, and resolution) and sexual behavior. This allowed us to examine the interaction between sexual self-schema and a sexually relevant stressor–cancer. In doing so, we provided empirical evidence to suggest that sexual self- schema may predict relevant sexual outcomes.

As indicated, sexual self-schema accounted for a significant and large portion of the variance (28%) in the prediction of current sexual responsiveness. In the prediction of sexual behavior, other components of the model were singly and, in combination, powerful contributors, accounting for 42% of the variance. Still, sexual schema contributed an additional, significant 6% of the variance, for a final total of 48%. These regression data provide basic information on the psychological processes of female sexuality. The predictive value of sexual self-schema differed in the two regression analyses, which is consistent with two literatures. First, they underscore the dual and independent importance of sexual responsiveness and sexual behavior in understanding female sexuality (see Andersen & Cyranowski, 1995, for a discussion). Second, that different psychological-behavioral processes would govern these two outcomes is consistent with data suggesting that frequency of intercourse for women in established heterosexual relationships is governed more by the male's preference than the female's (e.g., see Kinsey et al., 1953, for the earliest demonstration and Laumann et al., 1994, for a more recent one). Thus, if sexual self-schema has a role in female sexuality, one might anticipate that its effect would be clearer in those aspects for which women have greater control, such as their own responsiveness, and less predominant when others also have influence, such as the frequency of partnered sex.

These findings are supportive for the consideration of the sexual schema construct in understanding sexual outcomes after cancer. Consistent with the schema definition, we anticipated that women with more negative sexual self-views, in contrast to women with more positive views, would show greater sexual morbidity following cancer. Women with more negative sexual self-schemas were expected to have more difficulties because they are, in general, less romantic or passionate in their emotions, less open to sexual experiences, and more likely to have negative feelings about their sexuality. Thus, in the context of cancer—with disease or treatment factors causing direct changes to the sexual body or sexual responses as well as symptoms of premature menopause—we anticipated that women with negative sexual self-schemas would evidence lower rates of sexual activity and less sexual responsiveness. We suggest that women with negative views of their sexuality might find, for example, that their sexual arousability may have lessened further. In addition, women with negative sexual self-views may be less apt to try new sexual activities as a way to cope with their sexual difficulties, and may be prone to negative cognitions or feelings, such as embarrassment and anxiety, about sexually relevant body changes. In earlier efforts (e.g., Andersen & Elliot, 1993), we have detailed a process model of the occurrence and maintenance of dysfunctional and nondysfunctional sexual-response patterns in women with cancer. On the basis of our empirical findings, the dysfunctional pattern is characterized by low arousal, behavioral inhibition, and negativity—a constellation of responses relevant to sexual self-schemas.

Finally, these data suggest that preventative or rehabilitative interventions are particularly important for the woman with a less positive (or more negative) view of her sexuality, and moreover, that the schema construct could give theoretical guidance to such efforts. A schema-guided intervention could, for example, challenge the woman's typical self-view. Techniques could be designed to enhance sexual self-concept, providing the woman with strategies for enhancing arousal, increasing the sexual-behavioral repertoire, and lowering negative affects, such as sexual anxiety or embarrassment. Such possibilities, along with traditional behavioral strategies (Wincze & Carey, 1991) might provide the needed, important assistance to the woman who survives cancer but must cope with the resulting sexual difficulties.

This research provides important, initial support for the utility of sexual self-schema assessment in a clinical sample of women at high risk for sexual dysfunction—that is, gynecologic cancer survivors. Although promising, we note that these findings are cross-sectional rather than longitudinal, and that further tests of the diathesis–stress model are needed using prospective, longitudinal research designs with larger clinical samples and alternate high-risk groups. Moreover, we note the need for future research to study the influence of sexual self-schemas in samples of gay and bisexual individuals, as well as more diverse samples of older, non-White, lower socioeconomic status, and/or community-based samples.

CONCLUSIONS

Sexual self-schemas represent basic or core beliefs regarding sexual aspects of the self. We contend that individual differences in the sexual self-view represent an important cognitive diathesis for predicting sexual difficulty or dysfunction, and provide multiple lines of support for this model. To begin, we illustrated the role of sexual self-schemas on sexual- romantic behaviors and responsiveness in healthy female and male samples, using gender-specific versions of the Sexual Self-Schema Scale. The Sexual Self-Schema Scales provide brief, easy-to-administer, reliable, and stable assessments of both males' and females' views of the sexual self. Moreover, the subtle and unobtrusive nature of this cognitive assessment approach represents an important advance over alternate, sexually explicit measures that may be hampered by respondent discomfort, social desirability, or other response biases (see Catania

et al., 1990; ; Weinhardt et al., 1998). Such measurement characteristics make this self-report scale a practical assessment tool for use in both clinical and research settings.

We presented a brief overview of diathesis–stress models of psychopathology as applied to the sexual dysfunctions, and highlighted the critical features of clinically useful diathesis variables. Drawing from these criteria, we contend that in—addition to the previously mentioned psychometric advantages—the specificity of the sexual self-schema construct, the relationship of sexual schemas to relevant sexual outcomes, and the potential interaction of sexual schemas with sexually relevant stressors, all contribute to this construct's diathetic potential.

Our research suggests that when positive, sexual self-views may facilitate sexual functioning. When sexual self-schemas are extremely negative, conflicted, or weak, however, they may represent a significant vulnerability factor, or diathesis, for the occurrence of subsequent sexual dysfunction. Stressful events or assaults to the sexual system—such as certain medical or psychological stressors—may interact with negative (or, for males, weak) sexual self-schema to create deficits in sexual functioning. Diagnosis and treatment of gynecologic cancers represents one such sexually relevant stressor for affected females (Andersen, 1985; Andersen & van der Does, 1994; Weimar Schultz et al., 1992). As an initial test of this diathesis–stress model of sexual dysfunction, we presented data from our work with gynecologic cancer survivors to support the utility of sexual self-schema assessment within this at-risk population. Notably, this research indicated that sexual self-schema scores accounted for a full 28% of the variance in women's posttreatment sexual responsiveness, over and above such variables as previous sexual frequency, extent of disease-treatment, and menopausal status.

Given the current climate of limited psychosocial treatment resources, early identification of individuals at-risk for the development of sexual difficulty or dysfunction should allow for both primary prevention and early, cost-effective intervention. Such preventative strategies may, moreover, open the door for the provision of information and treatment opportunities for individuals who might otherwise feel anxious or reluctant to discuss sexual difficulties with primary care providers—let alone seek effective intervention. Further research using the Sexual Self-Schema Scales with alternate clinical populations and longitudinal research designs are warranted. Yet, available data suggest that this cognitive approach to sexuality represents an unobtrusive yet clinically useful assessment tool for the prediction of sexual difficulties within at-risk clinical populations.

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