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A Multidimensional Model of Sexual Health and Sexual and Prevention Behavior Among Adolescent Women

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A B S T R A C T

Purpose: Sexual health refers a state of lifespan well-being related to sexuality. Among young people, sexual health has multiple dimensions, including the positive developmental contributions of sexuality, as well as the acquisition of skills pertinent to avoiding adverse sexual outcomes such as unintended pregnancy and sexually transmitted infections (STIs). Existing efforts to understand sexual health, however, have yet to empirically operationalize a multi-dimensional model of sexual health and to evaluate its association to different sexual/prevention behaviors.
Methods: Sexual health dimensions and sexual/prevention behaviors were drawn from a larger longitudinal cohort study of sexual relationships among adolescent women (N = 387, 14–17 years). Second order latent variable modeling (AMOS/19.0) evaluated the relationship between sexual health and dimensions and analyzed the effect of sexual health to sexual/prevention outcomes.
Results: All first order latent variables were significant indicators of sexual health (β: 0.192 – 0.874, all $p < .001$). Greater sexual health was significantly associated with sexual abstinence, as well as with more frequent non-coital and vaginal sex, condom use at last sex, a higher proportion of condom-protected events, use of hormonal or other methods of pregnancy control and absence of STI. All models showed good fit.
Conclusions: Sexual health is an empirically coherent structure, in which the totality of its dimensions is significantly linked to a wide range of outcomes, including sexual abstinence, condom use and absence of STI. This means that, regardless of a young person's experiences, sexual health is an important construct for promoting positive sexual development and for primary prevention.

IMPLICATIONS AND CONTRIBUTION

Sexual health generally refers to a state of well-being related to sexuality. Our results illustrate that young women's sexual health positively influences a range of behaviors, including sexual abstinence. Regardless of a young person's experiences, sexual health is an important construct for promoting positive sexual development and for primary prevention.

Sexual health refers to a state of optimal well-being related to sexuality through the lifespan [1,2]. Among young people, a sexual health perspective differs from traditionally risk-focused perspectives by emphasizing the positive developmental contributions that sexuality provides to adolescent well-being within the context of romantic, family, and social relationships [3–5]. Moreover, a sexual health perspective addresses adverse outcomes, such as sexually transmitted infections (STI) and unintended pregnancy, by focusing on the developmental integration of important skills, such as personal autonomy, self-awareness, and sexual experiences [1–7].

An important challenge to research on adolescent sexual health is lack of models that both integrate aspects of healthy sexual development and maintain attention on primary prevention of adverse sexual outcomes. Two widely cited definitions of sexual health are quoted in this issue: the World Health Organization (WHO) defines sexual health as "...a state of physical, emotional, mental and social well-being related to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual responses, as well as the possibility of having

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pleasurable and safe sexual experiences, free of coercion, discrimination and violence." [2]. A somewhat different definition of adolescent sexual health, endorsed by more than 50 national medical and policy organizations, is offered in the Consensus Statement of the National Commission on Adolescent Sexual Health (NCASH) [3]: "Sexual health encompasses sexual development and reproductive health, as well as such characteristics as the ability to develop and maintain meaningful interpersonal relationships; appreciate one's own body; interact with both genders in respectful and appropriate ways; and express affection, love, and intimacy in ways consistent with one's own values." The Consensus Statement additionally notes that "responsible adolescent intimate relationships" should be "consensual, non-exploitative, honest, pleasurable, and protected against unintended pregnancy and STDs if any type of intercourse occurs."

These definitions offer three important ideas to understanding how sexual health is organized in adolescents. The first of these ideas is that sexual health arises from a spectrum of different physical, social, emotional, and relationship experiences that occur as normative aspects of healthy sexual development [8,9]. For example, being in a romantic/sexual relationship during adolescence can afford a young person the opportunity to develop different skills, such as learning effective communication about one's needs [10], negotiating conflict management [11], or successfully ending an unwanted relationship [12], which become necessary pieces in the management of adult sexuality. The second of these ideas, grounded in theories of growth and development, is that these normative experiences work collectively, rather than in isolation, to impact sexually related decisions [3,4,13]. In other words, this means that sexual health is greater than the sum of its individual parts, with each element contributing the influence of the whole. For example, relationship quality is positively linked to better communication about sex and contraception [14], and desiring a partner is positively associated with relationship satisfaction and commitment to partner [15]. Finally, the last of these ideas is that sexual health helps adolescents organize behavioral expressions of sexuality in ways that can include, as well as exclude, specific behavior choices. For example, although some studies describe how many adolescent relationships progress from "lighter" behaviors, such as hugging, kissing, hand holding, and oral sex [16,17], to more involved behaviors (e.g., vaginal sex) [18], other research suggests that some adolescents perceive sexual abstinence as an important expression of their sexuality [19].

To be truly useful from a clinical and public health perspective, scientific efforts to understand sexual health must operationalize concepts embedded in the definitions of sexual health using a range of dimensions related to healthy sexual development, and invoke an analytical method that permits an evaluation of the cumulative effect of these dimensions on a range of sexuality outcomes. However, to date, research has neither assessed the empirical coherence of sexual health as a multidimensional construct nor sought to understand its association to choices about different sexual behaviors, including abstinence. Therefore, using a structural equation modeling (SEM) approach, the objectives of the current project were to (1) assess the empirical relationship of underlying dimensions to a larger construct of sexual health; (2) evaluate the overall stability and structural quality of this larger construct; (3) understand the influence of sexual health on sexual abstinence, noncoital and coital sexual behaviors, contraceptive use, condom use, and STI in adolescent women.

Methods

Study design and participants

Data were collected as part of a larger longitudinal cohort study of sexual relationships, sexual behaviors, and STIs among young women in middle to late adolescence (for a review of recruitment methods see [20]). Participants (N = 387; 90% African American) were adolescent women receiving health care as part of the patient population in one of three primary care adolescent health clinics in Indianapolis, IN. These clinics serve primarily lower- and middle-income families residing in areas with high rates of early childbearing and STI. The average maternal education level was 12th grade. Participants were eligible if they were 14–17 years of age, spoke English, and were not pregnant at enrollment. However, adolescent girls who became pregnant during the course of the study were permitted to continue. Sexual experience was not a criterion for entry.

As part of the larger study (initiated in 1999 and completed in 2009), young women participated in quarterly study visits for collection of interview and physical data related to the larger project. At enrollment and at each interview, participants identified up to five partners, including friends, dating partners, boyfriends, and sexual partners. As a means of examining various types and stages of relationships, partners were not limited to those with whom sexual behavior had happened. In each quarterly interview, young women provided partner-specific information related to relationship—emotional, behavioral, and sexual content. This research was approved by the Institutional Review Board of Indiana University/Purdue University at Indianapolis–Clarian, IN. Informed consent was obtained from each participant, and permission was obtained from a parent or legal guardian.

For the current study, we used a subset of young women (N = 242; 62.5% of sample in larger study) who reported only one partner in their enrollment interview, who were not pregnant at enrollment, and whose complete sexual experience history data were available. Young women in this subset did not differ from those not selected on the basis of age ($t = 1.876$, $p = .061$), baseline STI status ($t = -2.593$, $p = .591$), having vaginal sexual experience ($t = 1.511$, $p = .131$), being a hormonal contraceptive user ($t = .912$, $p = .364$), and having oral sexual experience (fellatio: $t = .109$, $p = .914$; cunnilingus: $t = .253$, $p = .800$).

Model development

Analysis was initiated with the generation of a conceptual model based on definitions of sexual health as a means of specifying the relationships among the underlying dimensions of sexual health, the sexual health construct itself, and the relevant outcomes. We began by identifying four different areas—emotional, physical, mental/attitudinal, and social—emerging from the WHO [7] and NCASH [3] definitions of sexual health. As described earlier, for adolescents, these areas represent a range of normative developmental experiences working together to promote positive sexuality, which, in turn, is important for the expression of different sexually related behaviors. In this way, these experiences can be argued to underpin, or anchor, sexual health, which subsequently drives the organization of different outcomes.

We then selected interview items that mapped onto these well-being—emotional, physical, mental/attitudinal, and social—areas, and which aligned with the substantive foci of the WHO and NCASH definitions. Next, we specified a working model, hypothesizing that