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#### Assessment

## Development of a Brief Questionnaire to Assess Contraceptive Intent

Tina R. Raine-Bennett<sup>a,1,\*</sup>, Corinne H. Rocca<sup>b</sup>

- a Women's Health Research Institute. Division of Research. Kaiser Permanente Northern California. Oakland. USA
- <sup>b</sup> Bixby Center for Global Reproductive Health, Department of Obstetrics, Gynecology and Reproductive Sciences, School of Medicine, University of California, San Francisco, USA

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#### ABSTRACT

*Objective*: We sought to develop and validate an instrument that can enable providers to identify young women who may be at risk of contraceptive non-adherence.

Methods: Item response theory based methods were used to evaluate the psychometric properties of the Contraceptive Intent Questionnaire, a 15-item self-administered questionnaire, based on theory and prior qualitative and quantitative research. The questionnaire was administered to 200 women aged 15–24 years who were initiating contraceptives. We assessed item fit to the item response model, internal consistency, internal structure validity, and differential item functioning.

Results: All items fit a one-dimensional model. The separation reliability coefficient was 0.73. Participants' overall scores covered the full range of the scale (0–15), and items appropriately matched the range of participants' contraceptive intent. Items met the criteria for internal structure validity and most items functioned similarly between groups of women.

*Conclusion:* The Contraceptive Intent Questionnaire appears to be a reliable and valid tool. Future testing is needed to assess predictive ability and clinical utility.

*Practice implications:* The Contraceptive Intent Questionnaire may serve as a valid tool to help providers identify women who may have problems with contraceptive adherence, as well as to pinpoint areas in which counseling may be directed.

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#### 1. Introduction

Unintended pregnancy is an important public health problem and is mediated largely by contraceptive use. In the United States, nearly all sexually active women who wish to avoid pregnancy report use of contraception [1]. Use of less effective methods, inconsistent or infrequent use, and method discontinuation contribute significantly to unintended pregnancy rates [2]. Forty-three percent of unintended pregnancies in the U.S. occur among women using contraception inconsistently or incorrectly [3]. Recognizing the critical link between contraception and unintended pregnancy, the Institute of Medicine (IOM) recommended that contraceptive counseling, methods, and services be covered, without copayment, under the Patient Protection and Affordable Care Act (ACA) of 2010, so that women can better avoid

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unwanted pregnancies, space their pregnancies, and achieve optimal birth outcomes.

Health care providers are the gate keepers of contraceptives, as all highly effective methods (hormonal methods and intrauterine devices) are available by prescription only and require a provider consult. Therefore, providers have considerable potential to impact contraceptive use through the content of care provided and the nature of their interactions. The 2014 Guidelines for Providing Quality Family Planning Services by the Centers for Disease Control and Prevention (CDC) and the U.S. Office of Population Affairs outline five steps for providing quality contraceptive services: (1) establishing rapport; (2) obtaining a medical history, information on pregnancy intentions, contraceptive experiences and preferences, and a sexual health assessment; (3) working interactively with the client to select the most appropriate method; (4) conducting a physical assessment when warranted; and (5) providing the contraceptive method with instructions for use [4]. However, providers in most clinical settings have limited time in which to complete these steps. Furthermore, providers have varying levels of communication skills for discussing sensitive topics such as reproduction, and some may harbor biased attitudes about clients that influence their interview and counseling [5-7].

<sup>\*</sup> Corresponding author at: Division of Research, Kaiser Permanente Northern California, 2000 Broadway, 3rd Floor, 032R06, Oakland 94612, USA. Tel.: +1 510 891 5930.

E-mail address: tina.r.raine-bennett@kp.org (T.R. Raine-Bennett).

<sup>&</sup>lt;sup>1</sup> (Former affiliation) Department of Obstetrics, Gynecology and Reproductive Sciences, School of Medicine, University of California, San Francisco, USA.

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Providers typically use validated tools to obtain a medical history. A tool to elicit relevant information on pregnancy intentions or contraceptive experiences, attitudes, and preferences—to help providers assess risk for contraceptive non-adherence and counsel clients does not exist.

Counseling and provision of contraception does not occur in a vacuum. Contraceptive behavior (method choice and use pattern) is a dynamic and complex process shaped by a number of individual-level and contextual factors. Contraceptives are a form of medication, and the woman's specific beliefs about the medication also influence her engagement and adherence [8]. The confluence of an individuals' beliefs about pregnancy as well as beliefs about contraceptive methods influence contraceptive method choice, predisposition to adhere, and ultimately unintended pregnancy risk. Improving providers' ability to elicit information about individual, contextual, and treatment-specific factors that influence contraceptive decision-making and behavior would be a significant contribution to clinical practice. It could substantially enhance the providers' ability to provide information relevant to the individual and to work interactively with her to select the most appropriate method and address potential barriers to adherence

A number of studies have identified demographic, cultural, and reproductive risk factors for contraceptive nonuse, misuse, and discontinuation [9-12]. This work, however, has not been translational and tools to identify these risk factors in the clinical setting have not been developed. Several questionnaires have been developed and validated to assess medication non-adherence in clinical settings in patients with specific conditions such as hypertension or psychiatric disorders [13–15]. These questionnaires, typically administered at the point of care to patients using a specific medication, provide simple and low-cost approaches to identifying medication non-adherence in clinical practice. Because contraception is used to prevent a condition, assessing an individual's underlying conscious and unconscious predisposition towards using contraception ("contraceptive intent") could have similar utility. The ability to predict contraceptive non-adherence would be useful as individuals do not typically communicate their adherence plans; physicians are unable to predict non-adherence; and awareness of risk may provide opportunity for intervention

Our objective was to develop a brief self-administered questionnaire to help providers to identify young women who may have problems with contraceptive adherence, as well as to pinpoint areas in which counseling may be directed. Specifically, we sought to validate an instrument that can be used in clinical settings prior to contraceptive counseling to measure a clients' contraceptive intent or predisposition to use a new method and predict non-adherence. We describe the conceptualization, development, and preliminary psychometric properties of the Contraceptive Intent Questionnaire (CIQ).

#### 2. Material and methods

#### 2.1. Conceptual framework

The development of the Contraceptive Intent Questionnaire (CIQ) was grounded in both the theory of reasoned action (TRA), which has guided much of traditional contraceptive behavioral research, as well as the Necessity-Concerns Framework from medication adherence research [8,19]. The TRA posits that the best predictor of a given behavior is intention to engage in the behavior. Intention is influenced by two factors: (1) the individual's attitudes toward taking the action, which reflects her beliefs and values about consequences (costs and benefits) of engaging in the behavior; and (2) her view of social expectations related to the

behavior or her perceptions of what other people want her to do [19]. Previous research among adolescents and adult women has demonstrated that a woman's intent to contracept is associated with subsequent contraceptive behaviors [12,20,21].

Non-adherence, or failure to obtain or to correctly take a prescribed medication, occurs commonly among patients with chronic diseases, including HIV, cardiovascular, endocrine, and mental health disorders [22,23]. Medication adherence is becoming an increasingly important issue in prevention medicine. including reproductive health, such as with the use of antiretroviral therapy to prevent HIV transmission [24]. The Necessity-Concerns Framework posits that individuals balance their concerns about medications against their perceived need for the therapy and its perceived benefits [8]. Measurement instruments based on the framework have been shown to predict adherence and differentiate non-adherers from adherers across diseases and conditions [8]. The Necessity-Concerns Framework is similar to the TRA in that it conceptualizes behaviors (i.e., contraceptive use and medication adherence) as a confluence of mediating factors: (1) beliefs about the behavior and relevant outcome; (2) risks and benefits related to the behavior and outcome; and (3) social, cultural, economic and healthcare system contexts. We incorporated components from the TRA and the Necessity-Concerns Framework to create a theory driven model of contraceptive behavior.

#### 2.2. Development of items for the questionnaire

Building on the theoretical model, the item set for the questionnaire was generated based on results from our prior research and formative qualitative work with young women initiating contraceptives. We incorporated findings from a one-year longitudinal study of women aged 15–24 years initiating hormonal contraceptives at family planning clinics in the San Francisco Bay Area [12]. In addition to the specific contraceptive method initiated, the variables found to be most strongly associated with contraceptive continuation were being sure they would use the method for a year and being employed or in school. Other associated variables were pregnancy and childbearing intentions, endorsement of negative attributes of methods, and perception of one's partner to be against use of hormonal birth control methods. We developed one or more items to correspond with each of these factors.

Applying the Necessity-Concerns Framework to contraceptive use, we hypothesized that contraceptive continuation would also be influenced by perceived need for and concerns about the medication. We assumed that attitudes and beliefs about pregnancy and childbearing do not necessarily correspond to necessity beliefs and concerns about contraceptives. We therefore included additional items related to belief in need for, efficacy of, and harms of contraceptives.

A preliminary questionnaire was pilot tested with 41 women from the target population for the validation sample in iterative stages. First, in-depth interviews were conducted to provide additional context for variables that were associated with contraceptive continuation in the longitudinal study and to identify additional new themes. Additional items to measure self-efficacy were added in response to the emergence of a theme around perceived difficulty to use contraceptives. We postulated that addressing self-efficacy, which is incorporated in the theory of planned behavior, an extension of TRA [25], might improve the predictive power of the questionnaire. Cognitive interviews were then conducted to ensure items were interpreted as intended, hone language, and to refine response categories.

The questionnaire that was administered to the validation sample included 16 candidate items (Table 1). All items had four Likert-scale response categories; response options reflecting a

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