

## Comparisons of Contraceptive Use between Rural and Urban Teens



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### ABSTRACT

**Study Objective:** The purpose of the study was to determine if barriers in rural areas might decrease an adolescent's likelihood of obtaining effective contraception. Previous studies have reported mixed results in comparisons of rural and urban contraception use.

**Design:** Electronic survey.

**Setting:** Midwestern Public University.

**Participants:** Undergraduate and graduate women.

**Interventions:** Questionnaire.

**Main Outcome Measures:** Participants retrospectively recalled their contraceptive use and barriers to contraceptive use between the 9th and 12th grades.

**Results:** A Barriers to Contraception Use Scale was created using exploratory factor analysis and yielded 31 questions with 1 underlying factor: barriers. Participants were identified as rural or urban using the Office of Management and Budget (OMB) definition and the participant's self-identification. Overall, rural participants endorsed more barriers to accessing contraceptives than urban participants using the OMB definition ( $\chi^2(2; n = 388) = 2.04; P < .05$ ), and self-identification ( $\chi^2(2; n = 398) = 2.37; P < .05$ ). However, no differences were found in contraception use according to the OMB definition,  $t(380) = -1.90; P = .06$ , or self-identification,  $t(380) = -2.11; P > .05$ . The Barriers to Contraception Use Scale total score predicted whether an individual would have a prescription for contraceptives 70.5% of the time compared to the base rate of 54.1%.

**Conclusion:** Although no rural–urban differences in actual contraception use were found, rural participants reported more barriers to accessing contraception, and those who endorsed more barriers were less likely to obtain contraceptives while in high school. Pregnancy prevention programs should thus take these barriers into account when developing future interventions.

**Key Words:** Rural, Barriers, Contraceptives, BCUS, Adolescents

### Introduction

Teenage pregnancy is a problem in the United States. In fact, 273,105 women between the ages of 15 and 19 gave birth in 2013.<sup>1</sup> This is significant because pregnancy during adolescence results in lower graduation rates for the mothers, a greater risk of living below the poverty line for the mother and child, lower birth weights for the children, and lower scores on reading, general knowledge, and letter recognition tests.<sup>2,3</sup> Furthermore, teen pregnancy cost taxpayers 9.4 billion dollars in 2010 alone.<sup>4</sup>

When potential causes of increased risk for teen pregnancy were examined, lack of effective contraception played an important role, especially in rural areas. Rural teens might be less likely to effectively use prescription contraceptives because of the lack of confidentiality and anonymity that comes with living in a small town, along with the stigma associated with those who are sexually active.<sup>5,6</sup> Accessibility, affordability, and acceptability might also deter rural individuals from using medical services.<sup>7,8</sup> Thus, multiple factors might discourage rural teenagers

from seeking prescription contraceptives. In fact, a data analysis from the 2006 to 2010 National Survey of Family Growth revealed that at first intercourse, only 71% of rural adolescents used contraceptives compared with 81% of urban adolescents.<sup>9</sup> More problematic is the fact that 41% of rural adolescents are sexually active compared with only 29% of urban adolescents.<sup>9</sup> Thus, rural adolescents appear to be more sexually active and less likely to use contraception, which could put them at a greater risk for pregnancy. In fact, the National Campaign to Prevent Teen and Unplanned Pregnancy found that in 2010, adolescents aged 15 to 19 years old in rural counties had birth rates of 43 per 1000 compared with only 33 per 1000 for adolescents of the same age in urban counties.<sup>10</sup>

Despite results of research that indicate lower rates of contraception use could be due to rural barriers, no studies to date have developed a scale to assess barrier interference on contraception use. Thus, the purpose of this study was to create a Barriers to Contraception Use Scale (BCUS) and examine any rural–urban differences. Based on the previous research, it was hypothesized that rural participants would have fewer prescription contraceptives than urban participants, and that rural participants would endorse greater barrier interference to obtaining contraception than urban participants. Furthermore, it was hypothesized that the higher an individual scored on the

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BCUS, the less likely they would be to have a prescription for contraception.

## Materials and Methods

### *Barriers on the BCUS*

Before the study could be completed, a measure to assess barrier inference to contraception use needed to be developed. The BCUS was developed through a series of 3 phases: item generation, pilot testing, and factor analysis.<sup>11</sup> Phase I and II are described in this section. Phase III is described in the results section as it took place after data collection.

### *BCUS Development: Phase I. Item Generation*

Identification of barriers to contraception use and development of the questions to assess these barriers involved 2 processes: review of the literature and input from 2 psychologists and a reproductive endocrinologist. A review of the literature resulted in several potential barriers to contraception use including lack of anonymity,<sup>5,6,12</sup> conservative values of the community, lack of confidentiality, isolation, stigma toward sexual activity,<sup>6</sup> lower socioeconomic status,<sup>13</sup> accessibility of the facility, affordability of the services, differing values of the providers and consumers,<sup>8</sup> and distance needed to travel to a health care provider.<sup>7</sup> Another barrier, medical concerns (ie, concern about having to get a pelvic examination, the gender of the physician, etc), was added after consulting with co-authors. The barrier of different values between the patient and physician was eliminated because of the confusion it caused among the committee members and its similarity to the conservative values of the community barrier. It was decided that the barriers, accessibility of the facility and distance needed to travel to a health care provider would be combined because of their similarity. Thus, 11 independent barriers to contraception use were identified and 10 were kept for the study, although 2 were combined for a total of 9 barriers that needed to be assessed.

After the barriers to contraception use had been identified, between 3 and 8 questions were then constructed to assess each barrier's interference with contraception use. Additionally, during the design of the questions to assess sexual stigma, it was also decided that some questions to assess stigma toward contraception use also should be included. In total, 51 questions were created and retained, which assessed all 9 barriers. The BCUS was designed so all participants would rate on a 9-point semantic-differential scale, how much each barrier interfered with their ability to obtain contraceptives. Anchors were: "Did not interfere with my ability to get contraceptives" as 1, and "Interfered strongly with my ability to get contraceptives" as 9. With the 51 items, a participant could score between 51 and 459 with higher scores indicating more interference. [Table 1](#) contains the original 51 questions according to their associated barriers.

### *BCUS Development: Phase II. Pilot Study*

During phase II, the BCUS was pretested. The purpose of phase II was to address issues such as clarity of the test instructions and test items, and length of completion time, and used the assistance of 13 psychology graduate students. During this phase, the BCUS was split into 2 forms. Form A comprised those who had contraceptives, and those who did not have them but wanted them. Form B was made up of participants who did not have contraceptives and did not want them. The BCUS items in form A and B were identical. The only difference existed within the instructions. Those on form A were asked to rate how the barriers actually interfered with their ability to obtain contraceptives, and those on form B asked to hypothetically rate how much they believe these barriers would have interfered if they had tried to obtain contraceptives.

### *Eligibility and Recruitment*

After the BCUS was completed, participants were recruited for the study. Because of the difficulty of recruitment of high school adolescents for a study related to sexual health, it was decided that college students would be recruited and asked to recall their contraception use and barrier interference from high school. Participants were recruited through the University of South Dakota campus. Those enrolled in undergraduate psychology courses were able to take the survey for extra credit through a university survey system. In-class announcements were also made in several undergraduate introductory business, chemistry, biology, and sociology courses, and fliers were posted around the University of South Dakota campus. Those who participated in the survey and were not affiliated with psychology courses earned an entry into a drawing to win one \$50 and 2 \$25 Amazon gift cards. All female students, 18 years of age or older, were eligible to participate, and 423 partook in the study: 302 from psychology courses and 121 from courses outside psychology. The 302 participants from the psychology courses were all undergraduate students. The 121 participants from outside the psychology courses were likely also undergraduates because all announcements were made in undergraduate courses. However, because fliers were posted around campus, it is possible that some graduate students might have taken part in the study.

Overall, 16 of the original 423 participants were excluded because they identified as male, and 9 were removed for failure to complete the survey, which resulted in 398 participants. Rural was defined using the Office of Management and Budget (OMB) definition.<sup>14</sup> According to the OMB, a "metro" county is one that is a "central county with 1 or more urbanized areas" and "contains outlying counties that are economically tied to the core counties...." Counties with economic ties are those in which 25% of the residents living in that specific county actually commute to an urban county for work. "Nonmetro" counties are divided into 2 different subgroups; "noncore counties" and "micropolitan areas." Micropolitan areas are counties in

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