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## Currents in Pharmacy Teaching and Learning

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Experiences in Teaching and Learning

## Implementation and evaluation of a women's reproductive health pharmacy elective

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## ABSTRACT

**Background and purpose:** To create, implement and evaluate an elective course for pharmacy students focusing on women's reproductive health topics.

**Educational activity and setting:** A course was developed that included lectures discussing contraception, infertility, preconception care, pregnancy, and postpartum health. Active learning provided in the forms of journal article review and review of drug information resources for medication use in pregnancy were utilized. Workshops provided hands-on experiences with prescription contraceptives and over-the-counter fertility products. Knowledge and skills were assessed with in-class quizzes, journal article presentations, class participation, patient cases, and a final exam. A 46-item survey was administered to students pre- and post-course to assess self-perceived knowledge and confidence in women's reproductive health.

**Findings:** A total of 33 students were enrolled in the course. The response rate for the pre-course survey was 100% ( $n = 33$ ) and for the post-course survey was 91% ( $n = 30$ ). Students' confidence in counseling on women's reproductive health topics significantly increased after the course (mean scores 2.62 pre-course and 3.75 post-course,  $p < 0.0001$ ). Similar results were seen in students' self-perceptions of their overall knowledge in women's health (mean scores 2.63 pre-course and 3.92 post-course,  $p < 0.0001$ ). Preferred methods of learning included product workshops, and journal club presentations were the least preferred learning method.

**Discussion and summary:** A women's reproductive health course was well received by students and increased their self-perceived knowledge and confidence in the areas of prescription contraceptives and over-the-counter fertility products.

## Background and purpose

The role of pharmacists has expanded tremendously throughout the past decade and continues to broaden in response to patient need and pharmacy advocacy. As a result of several state and federal legislative changes, the scope of practice for pharmacists has expanded to include many services such as immunizations, reproductive health, medication therapy management, and disease state management programs.<sup>1</sup> In particular, pharmacist provision of reproductive health services is continually growing in the areas of preconception care, infertility, and family planning as evidenced by past legislation with emergency contraception. More recently, legislation in California, Colorado, Oregon, and New Mexico allows pharmacists to directly provide hormonal contraception to

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patients.<sup>2-8</sup> To that end, future pharmacists must be knowledgeable and prepared to fulfill such expanding roles, specifically related to women's reproductive health.

The Health Resources and Services Administration (HRSA)<sup>9,10</sup> performed a nationwide survey among pharmacy schools, and the results suggest that there is a lack of women's health education in pharmacy school curricula. The HRSA report suggests that in order to appropriately meet the health needs of society and female patients, women's health topics must be integrated throughout pharmacy school education and across health professions. In addition, the Center for Advancement of Pharmacy Education (CAPE) Outcomes 2004<sup>11</sup> highlighted the need for competency in women's health, and the CAPE Outcomes 2013<sup>12</sup> highlighted examples of outcomes such as recognizing social determinants of health that includes gender. As pharmacist-provided reproductive health services expand nationwide, women's reproductive health curricula is essential.

Success has been demonstrated with general women's health courses. Yuksel<sup>13</sup> analyzed the design and implementation of a mandatory course on women's and men's health into the undergraduate pharmacy curriculum at University of Alberta. The results suggested that students were receptive to the course and had an increased appreciation of the scope of topics. Marshall et al.<sup>14</sup> evaluated the design, implementation, and assessment of a women's health elective course for second- and third-year doctor of pharmacy (PharmD) students at Mercer University College of Pharmacy. Students performed well in active-learning activities and class participation; however, this did not translate into improved performance on formal assessments, indicating a possible need for further education. In a third study, Vest et al.<sup>15</sup> evaluated the impact of patient interviews on pharmacy students' knowledge of emergency contraception while enrolled in a women's health elective course. The survey results concluded that the students' confidence levels and perception of their own knowledge of emergency contraceptive counseling had increased after completing the patient interview activity. Young et al.<sup>16</sup> also conducted an assessment of an active learning exercise related to emergency contraceptive counseling. The authors concluded that students' knowledge scores and confidence in counseling on emergency contraception increased. These studies demonstrate that a general women's health course and active learning strategies are feasible and have increased students' confidence and knowledge in the topic.

In most pharmacy programs, students are exposed to a limited amount of women's reproductive health topics due to a highly dense core curriculum, and that may have limited opportunities for a women's health elective, especially for a course focused on reproductive health.<sup>9</sup> Despite this, graduating pharmacists are expected to counsel and educate patients on such topics with confidence.<sup>9-12</sup> It is unknown if adding more reproductive health content to pharmacy curricula will affect knowledge and confidence of graduating pharmacists in this area. While there have been reports of women's health electives and of learning techniques to teach various women's health topics, to date there has not been a women's reproductive health pharmacy course described or evaluated in literature.<sup>13-16</sup> Given the dense core curricula of many schools of pharmacy, introducing an elective course specifically in women's reproductive health may be a venue to evaluate the value of added content and help incorporate further concepts to prepare student pharmacists for practice in this field.

The objective of this paper is to describe the content and evaluation of an elective course in women's reproductive health.

## Educational activity and setting

### Course design

Midwestern University, College of Pharmacy-Glendale began offering an elective course focusing on women's reproductive health for second year pharmacy students (in a three-year accelerated PharmD program) in 2010. The college has about 150 students per class. While the college is located in a state that does not have pharmacist provision of hormonal contraception, many students are from states that do have pharmacist provision of hormonal contraception (at the time of the course, however, legislation for pharmacist provision of hormonal contraception was not yet passed in any state). The purpose of this course was to provide an overview of advanced topics in women's health focusing on reproductive health. It was designed to supplement the core curriculum provided. The core curriculum included the following women's reproductive health topics: contraception (three hours); pregnancy and lactation (two hours); menstrual disorders (two hours); and over-the-counter (OTC) contraception including emergency contraception (three hours). A majority of the women's health courses were taught in a therapeutics course in the spring of the first year while OTC contraception was taught in a professional skills development course focusing on OTC products in the fall of the first year. The college has a course designed specifically for professional skill development that includes a variety of hands-on activities, patient counseling, and active learning. The active learning for these modules includes role-play for counseling on emergency contraception, standardized patient counseling for an emergency contraceptive product, and application of the Centers for Disease Control and Prevention (CDC) Medical Eligibility Criteria for Contraceptive Use in two to three case vignettes during class. Due to the highly dense curriculum, however, opportunities for more active learning related to women's health such as journal club activities, student presentations, and hands-on examination of hormonal contraceptives and infertility products were not available.

Expanded information in topics such as contraception, infertility, pregnancy care, and mood disorders related to pregnancy were provided. These topics were chosen as a concentrated focus in women's reproductive health to help students master the content of these topics, particularly because pharmacist services are growing in this area. The elective course's objectives compared to the women's health-related core curriculum's objectives are listed in [Table 1](#).

The 1.5-credit hour course was offered by a college of pharmacy faculty member with expertise in women's health. The faculty member had eight years of experience in the area of women's health during the initial offering of course and eleven years of experience at the time of the course survey. The faculty member also taught the OTC women's health topics in the curriculum, but did not teach the other women's health topics in the core curriculum. In a 10-week quarter that was immediately prior to advanced

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