



Training nurses and nursing students about prevention, diagnoses, and treatment of fetal alcohol spectrum disorders[☆]



Roger J. Zoorob^a, Kristy M. Durkin^{b,c}, Sandra J. Gonzalez^{d,*}, Susie Adams^e

^a Department of Family and Community Medicine, Meharry Medical College, Nashville, TN, USA

^b Department of Social Work, University of West Florida, Pensacola, FL, USA

^c University of Alabama, Tuscaloosa, USA

^d Department of Family and Community Medicine, Meharry Medical College, 37208-3599 TN, USA

^e PMHNP Program, Vanderbilt University School of Nursing, Nashville, TN, USA

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ABSTRACT

Alcohol consumption during pregnancy can result in birth defects known as fetal alcohol spectrum disorders. This study examined whether 1-h training sessions on alcohol screening, brief intervention, diagnoses, and treatment of fetal alcohol spectrum disorders could increase practical knowledge and confidence in nurses and student nurses. Data were collected from 420 nurses ($n = 95$) and student nurses ($n = 325$) in the southeastern United States, from 2009 to 2011. Pre- and post-test data were analyzed using chi-square tests and t -tests. The post-training response rate was 84%. Nurses were more likely to know what constitutes binge drinking, facial abnormalities associated with fetal alcohol syndrome, and criteria for diagnosis. Nurses were also more confident in educating about effects of prenatal alcohol use, identifying fetal alcohol spectrum disorders and utilizing resources. Training materials may need to be improved and/or longer training programs developed for student nurses, and nursing school programs should place more emphasis on educating and preparing student nurses regarding this topic area.

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Introduction

In the United States of America (U.S.A.) approximately 49.6% of childbearing age (18–44) women report consuming alcohol (Behavioral Risk Factor Surveillance System (BRFSS), 2010). Many of these women are also sexually active and often do not use effective forms of contraception (Brimacombe et al., 2009). Moreover, 50% of pregnancies in the U.S.A. are unplanned (Finer and Henshaw, 2006; Tsai and Floyd, 2004) and approximately 40% of women are unaware they are pregnant until 4–7 weeks into the pregnancy (Denny et al., 2009), indicating that many may be consuming alcohol during the early stages of embryonic development (O'Connor et al., 2009). As a result, these women may be at high risk

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* Corresponding author. Tel.: +1 615 327 6572; fax: +1 615 327 5634.

E-mail address: sgonzalez@mmc.edu (S.J. Gonzalez).

for an alcohol exposed pregnancy as they may unknowingly continue to consume alcohol during pregnancy (Floyd et al., 2007; Tsai and Floyd, 2004). Although many women quit or reduce alcohol consumption after learning they are pregnant (Harrison and Sidebottom, 2009), 7.1% of pregnant women report alcohol use within the past 30 days and 1.2% of pregnant women report binge drinking (defined as 4 or more drinks on one occasion) (BRFSS, 2010).

Fetal alcohol spectrum disorders (FASD) was identified in 2004 and the term accounts for the wide range of physical features, behavioral problems, and cognitive conditions caused by drinking alcohol while pregnant (Brimacombe et al., 2009; Olson et al., 2007). Historically, only individuals with FASD symptoms on the severe end of the spectrum were diagnosed with fetal alcohol syndrome (FAS) (Jones and Smith, 1973; Jones et al., 1973). FAS is generally discovered at birth or during early childhood when the serious facial abnormalities are immediately apparent (i.e. small palpebral fissures, smooth philtrum and thin upper lip) (Astley, 2004). The mild to moderate symptoms of FASD, however, present as subsequent developmental delays or mild facial abnormalities and often go undetected and undiagnosed (Andrew, 2011). The prevalence of FASDs in the United States is estimated to be as high as 10 per 1000 births (May et al., 2009). As FAS is on the severe

end of the FASD spectrum, those who exhibit the full range of these effects are not as common; however, prevalence rates are comparable to other common developmental disabilities such as Down's syndrome or spina bifida (May and Gossage, 2001). In fact, FAS is the largest known cause of birth defects in the U.S.A. with as many as 6000 cases per year (Barry et al., 2009) and has been estimated in the U.S.A. to be as high as 2 per 1000 live births (May and Gossage, 2001).

Nurses make up the largest number of health care professionals in the U.S.A. (Spratley et al., 2000) and are thus in an excellent position to have an impact on the problem of birth defects (Coakley, 2007). Therefore, programs educating nurses and student nurses about the risk of prenatal alcohol consumption and FASD are critical for harm reduction and potentially reducing incidence and prevalence (Caley, 2006). One study on public health nurses found that only 42% had received prior training on the subject of FASD and only 1 in 5 believed the training was effective (Logan et al., 2003). In a study of school nurses, 72% reported needing more information on screening women for risky or hazardous drinking; educating pregnant women about the effects of alcohol on their babies; and conducting alcohol cessation brief interventions (Caley, 2006). Alcohol screening and brief intervention (SBI) offers an evidence-based, cost-effective approach to identifying and managing risky alcohol drinking (Fleming et al., 2002). Screening involves a series of questions which assess alcohol use followed by a brief counseling session aimed at increasing the individual's awareness of their alcohol use and possible consequences. According to the Centers for Disease Control and Prevention (CDC), women of childbearing age and those who are pregnant are advised to abstain from alcohol during pregnancy (CDC, 2009).

Nurses and student nurses in the U.S.A. encounter women during their childbearing years in every area of professional practice and in multiple settings: prenatal clinics, labor and delivery, well-child care settings, hospitals, schools, rehabilitation centers, and home visits (Caley, 2006; Coakley, 2007). However, a study on nurses and midwives found that the knowledge base on pregnancy and substance abuse was very low (Raeside, 2003). Another study found that 52% of school nurses report they rarely or never provide advice and education on the consequences of alcohol use during pregnancy to adolescent female patients (Caley, 2006). Further, nurses encounter children and families across the lifespan who are at risk for or who have FASD, and nursing interventions are key to the prevention and treatment of this problem (Caley et al., 2006). Recommendations for nurses in preventing secondary disabilities in FASD include screening, case-finding, health teaching, case management, referral and follow-up (Caley et al., 2006). School nurses have been found to feel "somewhat" to "very" unprepared to identify, diagnose, and manage or coordinate treatment for children with FASDs and approximately 36% did not know, or were unsure what facial features were associated with FAS (Caley, 2006). Further, few could correctly identify the facial features associated with FAS: short palpebral fissures (20%), smooth philtrum (32%), and thin upper lip (48%) (Caley, 2006).

Recent studies have found that by simply presenting materials and/or providing training to nurses about FASD, an increase in knowledge, improved assessment skills, and greater use of practice skills related to FASDs will occur in both prevention and treatment areas (Caley et al., 2010; Payne et al., 2011). Nurses surveyed on their knowledge, attitudes and practices concerning FAS and alcohol consumption in pregnancy, and then given educational resources on the prevention and diagnoses of FASDs were found to have an increase in the proportion of those who knew all the essential features of FAS from 11.9% to 17%, at six months post training. Similarly those had suspected FAS based on prior knowledge of the essential features, increased from 38.2% to 48.8%; those

who identified FAS, from 3.9% to 11.4%; those who diagnosed FAS, from 3.2% to 4.7%; and those who referred to confirm a diagnosis of FAS, from 14.3% to 21.2% (Payne et al., 2011). In a study where nurses participated in a workshop on increasing implementation of prevention interventions for FASD, 35% of the nurses increased providing information on FASD, 21% conducted alcohol screenings, 4% increased brief interventions and 8% made referrals (Caley et al., 2010).

In order to help educate nurses, student nurses and other medical professionals about the significance of FASD, alcohol screening and brief intervention to prevent FASD, the CDC established a set of educational guidelines based on seven core competencies that may be used in training. For each area of competency, it is expected that the curriculum will increase knowledge, change attitudes and improve skills in evaluating and intervening with prenatal alcohol use (CDC, 2009). Based on a review of the current literature, no study was located that focused on assessing student nurses' knowledge regarding FASD prevention, diagnosis and treatment. Further, no studies were located comparing student nurses to nurses prior to and following training using the CDC's core competency training guidelines. Survey data were collected from nursing students and nurses at baseline and at follow-up. The following factors were examined: knowledge about alcohol use prevalence and risky drinking patterns in women of reproductive age, FASD diagnosis and treatment knowledge, practices regarding alcohol use screening tools, confidence in providing alcohol screening and brief intervention, confidence in FASD diagnosis and treatment, and barriers that hinder alcohol screening, brief intervention, and FASD diagnosis. It is intended that the proposed tool will identify gaps in the curricula of existing nursing school programs. Such deficiencies could then be corrected through adapting trainings to better fit the learning needs of student nurses as well nurses on this topic.

Methods

Participants

Data were collected from 420 nurses ($n = 95$) and student nurses ($n = 325$) in the southeastern U.S.A. between 2009 and 2011 by the Southeast FASD Regional Training Center. The center contacted nursing school programs and other agencies that employ nurses to schedule FASD competency-based trainings. Convenience sampling was used and data were reported for all participants who received the training. Institutional review board approval for the study was obtained prior to participant enrollment.

Materials

A survey, using a questionnaire, was conducted. The questionnaire was developed in collaboration with the CDC and the FASD Regional Training Centers and was adapted from surveys developed by previous researchers to assess provider knowledge and awareness of FASD (Gahagan et al., 2006; Nanson et al., 1995). The survey contained various response options, including multiple-choice, Likert-type scales, and free-text entries. Questions included knowledge about risky drinking patterns in women of childbearing age; identification of FASD/FAS; frequency of alcohol screening and brief intervention (SBI); confidence in providing SBI, utilizing resources to refer persons who may need formal diagnosis or treatment and in coordinating services; and barriers to providing SBI to pregnant and childbearing age women or diagnoses of FASD/FAS. The survey was piloted to a select group of medical students and residents before administration, in order to assess completion time, appropriateness of wording, and readability.

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