

# Assessing the factors that affect potential prescribing patterns of Plan B in UTMB Physician Assistant Students

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## Abstract

There have been many research studies investigating the efficacy, availability, and need for emergency contraception. Many of the studies have demonstrated that personal beliefs and values of the health care provider play a role in whether or not the provider will prescribe emergency contraception. However, no studies have examined the specific values and beliefs that influence this decision. The aim of this study was to explore what values and beliefs play a role in physician assistant students' opinions on Plan B and whether or not they will prescribe it in the future. A non-random convenience sample of 129 students at The University of Texas Medical Branch (UTMB) was surveyed on a voluntary basis. The results showed that the strongest factor influencing students to prescribe Plan B in the future is the individual patient scenario, while the strongest factor influencing them to not prescribe Plan B is religious beliefs. The patient scenarios in which students are most likely to prescribe Plan B include a rape victim and younger age of the patient. Student beliefs on when life begins (fertilization vs. implantation or later) also play a role in whether or not they will prescribe Plan B, as does the amount of clinical hours they have had in Physician Assistant school. Differences in religion among participants do not seem to play a role in their decision to prescribe, however. The results of this study are noteworthy because they demonstrate that individual patient circumstances, more than religion or other factors, clearly play a role in whether or not future health care providers will prescribe Plan B or not.

## INTRODUCTION

Plan B is the brand name for a progestin-only emergency contraceptive (EC), which contains the active ingredient, levonorgestrel. It interferes with ovulation, and possibly fertilization and implantation. It is not effective once implantation has begun (Definition of Plan B, 2004). The International Federation of Gynecologists and Obstetrics (FIGO) defines implantation as the beginning of pregnancy. A recent study showed that EC has little or no effect after ovulation; however it is very effective if taken before ovulation (Novikova, Weisberg, Stanczyk, Croxatto, Fraser, 2007). At the time when this current study began, research studies had shown inconsistent availability for women seeking Plan B. Furthermore, several studies have also indicated that personal values and beliefs of those with prescriptive authority influence whether or not they will prescribe Plan B or other EC (Fairhurst, Wyke, Ziebland, Seaman, & Glasier, 2005; Sable, Schwartz, Kelly, Lisbon, & Hall, 2006). It is necessary to understand not only the mechanism of action of Plan B, but also its availability and reasons for which patients request it.

The Plan B regimen consists of one tablet, 0.75 mg of levonorgestrel followed by a second tablet, 0.75 mg, 12 hours later (Royce and Johnsen, 2002). It is designed to prevent pregnancy within 72 hours after a contraceptive accident or unprotected sex. It has been reported that Plan B is more effective with fewer side effects than other methods of EC, such as Yuzpe method, decreasing risk of pregnancy by 89% when used correctly (Task Force on Postovulatory Methods of Fertility Regulation [TFPMFR], 1998). In conclusion, it appears that Plan B is the most efficacious method of EC with the least side effects that is available today.

When this research study began in 2006, Plan B was a product in the United States that was available by prescription only, with the exception of the states of Alaska, California, Hawaii, Massachusetts, New Hampshire, New Mexico and Washington (Sable, Schwartz, Kelly, Libson, & Hall, 2006). Many countries had already made emergency contraception available without a prescription, including the United Kingdom, South Africa, Israel and France, yet it remained restricted to prescription-only status in the United States (Pentel, Nelson, Wikelius, & Cooper, 2004). During



the development of this research, the Food and Drug Administration announced the approval of the emergency contraceptive drug Plan B as an over-the-counter (OTC) option for women aged 18 and older. For women 17 and younger, a prescription-only form of Plan B will remain available.

In a study by Chuang and Shank, 126 Pennsylvania pharmacies were surveyed as to why EC was not carried there. Interestingly, nine percent stated that there were moral objections, such as it being against store policy, and eight percent stated that the product was against personal beliefs (2006). Moral objections and personal beliefs clearly have interfered with the prescription of EC, and this research was performed to discover the basis of these beliefs.

A study was performed assessing the availability of EC in Massachusetts emergency departments (ED). All of the 72 EDs (nine of which are Catholic) in Massachusetts received two phone calls which presented two scenarios. The first scenario was a patient asking for EC after condom failure during intercourse. The 63 non-Catholic EDs and the nine Catholic EDs had 73% and 11%, respectively, answer that EC was available. The second scenario consisted of a social worker asking for emergency contraception for a patient who was sexually assaulted the previous night. Again, a difference between the availability in the non-Catholic EDs and the Catholic EDs was observed, 86% and 56%, respectively (Temin, Coles, Feldman, & Mehta, 2005).

The Massachusetts study demonstrates that varying scenarios can affect the tendency to provide EC. The study limits itself, though, to only two scenarios. The survey completed in the current study expanded the number of scenarios to determine the potential for more variation in future prescriptive patterns. The Massachusetts ED study also provides an example of a drastic decrease in availability of EC due to particular religious affiliation. The study is limited, though, in that it only focuses on one religious denomination and does not expand to others. The survey in the current study encompassed a larger span of religious denominations to determine if religious affiliation plays a role on potential prescriptive patterns of EC.

Since it has been demonstrated that individual patient scenarios alter whether or not EC will be prescribed to a patient, it is important to understand which of these scenarios are occurring most frequently. Several studies have been conducted on this topic. Most of the available studies

compare the reasons that women request EC. Reasons such as unprotected intercourse, condom breakage, and missing an oral contraceptive pill (OCP) are cited most frequently. Falk, Falk, Hanson, and Milson (2001) found that 30% reported condom breakage as the reason for desiring EC, while 54% reported unprotected intercourse, and 11% reported missing an OCP. Conversely, Bastianelli, Farris, and Benagiano (2005) found that 64% of women requesting EC did so because of condom breakage, 28% because of unprotected intercourse, and only 1.1% because of forgetting one or more OCP. Additionally, they reported that nearly 70% of the women requesting EC were between the ages of 18 and 25 years, and 80% of them were in stable relationships with their partners. A similar study, by Soon et al. (2005) found that 56.2% of women seeking EC did so because of a failed contraceptive method. Of this 56.2%, 90.3% experienced condom failure, 7.9% had erratic OCP use, and 1.8% reported failure of other forms of contraception.

A number of other studies have been performed that aimed to determine the reasons why women request EC (Lewington & Marshall, 2006; Lewis, Wood, & Randall, 1996; Percival-Smith & Abercrombie, 1988; Perez, 1995; Pyett, 1996; Rogala, Anze'n, 1995). The two most common reasons cited were condom breakage and unprotected intercourse, while forgetting one or more OCPs was cited less commonly.

The purpose of the current study was to assess Physician Assistant student opinions on Plan B and whether or not they will prescribe it in the future. The goals were to answer the following questions: (1) Will religious beliefs, life experiences, family upbringing, education, and individual patient circumstance affect their decision to prescribe Plan B? (2) Which of these factors will be the strongest influencing students to prescribe or not prescribe Plan B? (3) Will certain patient scenarios (rape victim, patient age, and patient relationship status) alter PA student decisions to prescribe Plan B? (4) Will PA student beliefs on when life begins (fertilization vs. implantation or later) influence their decision to prescribe Plan B?

## **METHODS**

**Participants** The target population for this study was physician assistant students at the University of Texas Medical Branch in Galveston, Texas who will be graduating between 2007 and 2010. Participation was on a voluntary basis. The subject selection was limited to UTMB PA students who were at Chairman's Hour on the day of survey



distribution. Chairman's Hour is a weekly scheduled hour for the PA students and the chairman of the department of Physician Assistant Studies, during which students are informed of department news. There were no exclusion criteria. One hundred and twenty-nine surveys were returned.

**Study Design** This study employed a paper survey handed out during Chairman's Hour at UTMB. Participants were given 15 minutes to complete the survey, and the survey instruments were handed back to the researchers when completed. There were seven questions on demographics followed by seven questions about factors which may affect their decision to prescribe Plan B. Additionally, a definition of the mechanism of action and indications of Plan B was provided. The survey was also evaluated and approved by UTMB PA faculty and the institutional review board.

**Data Analysis** Data from the surveys was collected and compiled on Microsoft® Office Excel and analyzed with SPSS®. Descriptive statistics using chi-square and cross tabulation tests were utilized to compare the relationship between the independent and dependent variables. A p value of 0.05 was used.

## RESULTS

Of the 129 surveys distributed, 3 participants filled out the survey incorrectly. Therefore 97.7% (n =126) of the surveys were suitable for data analysis.

**Figure 1**

Table 1 Demographics of survey participants		
	*Number	Percent
<b>Gender</b>		
Female	111	88
Male	15	12
<b>Age</b>		
18-22 y	19	15
23-30 y	88	70
30-40 y	14	11
40+ y	5	4
<b>Clinical Experience in PA school</b>		
0 months	53	42
1-6 months	39	31
7+ months	34	27
<b>Patient Care Experience before PA school</b>		
No answer	8	6
0 hours	24	19
1-499 hours	55	44
500-999 hours	7	6
1000-1999 hours	12	10
2000 + hours	20	16
<b>Race</b>		
White	97	77
African American	1	1
Hispanic	11	9
Asian	12	10
Native American	1	1
Other	4	3
<b>Professional degree</b>		
Bachelor's	114	91
Master's	11	9
PhD	1	1
<b>Religion</b>		
None	9	7
Protestant	60	48
Catholic	28	22
Jewish	0	0
Mormon	1	1
Buddhist	3	2
Other	25	20

\*N=126

Factors Influencing the Decision to Prescribe PA students were asked to select which of the following factors will play a role in their decision to prescribe Plan B in the future: religious beliefs (A), life experiences (B), family upbringing (C), education (D), and individual patient circumstance (E). Simple frequency statistics show that 42% of participants chose A, 40% chose B, 36% chose C, 56% chose D, and 83% chose E. Additionally, of the 17 participants who will not prescribe Plan B, 65% stated that the strongest factor influencing them to not prescribe is religious beliefs (  $\chi^2 = .889$ ,  $df = 1$ ,  $p = .346$ ). Of the 109 participants who stated they will prescribe Plan B, 71% stated the strongest factor to prescribe Plan B is individual patient circumstance (  $\chi^2 = 68.45$ ,  $df = 1$ ,  $p = .000$ ).



**Patient Scenarios** Of the scenarios we evaluated on the survey, 94% (n = 118) of the participants would prescribe Plan B to a rape victim, 65% (n = 82) will prescribe Plan B to a child less than 12 years old who had unprotected intercourse, 57% (n = 72) will prescribe to a child 13-15 years old who had unprotected intercourse, 50% (n = 63) will prescribe to a patient 16 years or older, 41% (n = 51) will prescribe to a woman in a stable marriage or committed relationship, and 21% (n = 27) will prescribe to a woman who has electively used Plan B multiple times in the past. These values demonstrate that of the selected sample, more PA students are likely to prescribe Plan B to younger women or rape victims than older women, those in committed relationships, or those who have used Plan B repeatedly in the past.

**Beliefs about the beginning of life** It was also found that students' beliefs about when life begins play a role in whether or not they will prescribe Plan B. Those who believe life begins at fertilization are less likely to prescribe Plan B (22% will not prescribe, n = 14) than those who believe life begins at implantation or later (5% will not prescribe, n = 3). Likewise, those who believe life begins at implantation or later are more likely to prescribe Plan B (95%, n = 59) than those who believe life begins at fertilization (78%, n = 50); ( $\chi^2 = 9.702$ , df = 2, p = .008).

**Clinical Experience** In the course of this investigation, it became apparent that the amount of clinical experience in PA school might play a role in students' opinions about Plan B. Of the 53 who had completed no clinical experience during PA school, 51 would prescribe Plan B (96%). There were 39 students with 1-6 months of clinical experience; 85% of these students would prescribe Plan B (n = 33). Of the 34 students with 7 or more months of clinical experience, 25 (74%) would prescribe Plan B ( $\chi^2 = 9.882$ , df = 2, p = .007).

**Religious Beliefs** Further research on the subject during this investigation also revealed that individual students' religious beliefs may play a role in their decision to prescribe Plan B. Participants were asked their religion on the survey. The two most commonly chosen religions were Protestant and Catholic (48%, n = 60 and 22%, n = 28 respectively). Of these two religions, 85% (n = 51) of Protestant participants reported that they will prescribe Plan B and 75% (n = 21) of Catholics will prescribe Plan B ( $\chi^2 = 9.087$ , df = 5, n = 126, p = .106).

## DISCUSSION

Past studies have shown that personal beliefs and values of healthcare providers do influence the decision to prescribe emergency contraception to their patients. The findings of this study further examined some specific influences that will affect potential prescriptive patterns of future physician assistants. The results of this study indicate that 93% of the 126 participants will prescribe Plan B in the future (n = 109). While it must be kept in mind that this percentage is from a relatively small sample size, the data is meaningful nevertheless.

**Strongest factors affecting potential prescriptive patterns** Of all the influencing factors evaluated, the strongest factor affecting the decision to prescribe Plan B is patient circumstance, and the strongest factor affecting the decision to not prescribe is religious beliefs. Of the patient circumstances evaluated, participants are more likely to prescribe to younger patients or those who are victims of rape. During examination of the results, a comparison was run between the different religious denominations of the participants; however, there was not a significant difference between religious backgrounds and the decision to prescribe.

**Additional influencing factors** The belief as to when new life begins proved to be a significant influencing factor. Those who believe life begins at implantation or later were more likely to prescribe, and those who felt life begins at fertilization answered they would be less likely to prescribe. An additional significant observation made from this study was that the more clinical experience that the student had, the less likely he was to prescribe Plan B in the future.

**Limitations** The current study was subject to all of the limitations that apply to a paper survey, such as distractions from peers also taking the survey and any time restraints that may have been experienced by the participants, leading to hurried answering of the survey. Another limitation to this study is sample size and population. The sample size was relatively small, as there were only 129 participants. The sample was further limited by the need to exclude three surveys. The survey instrument was distributed only to physician assistant students of UTMB Galveston; future studies may benefit from including students from multiple physician assistant programs. Also, the sample population solely consists of students, and a new perspective may be gained by surveying certified, practicing physician assistants.



As previously mentioned, during the course of this investigation Plan B became available over the counter to individuals over the age of 18. Patients under 18 are still required to obtain a prescription for the medication, so physician assistants will still be presented with the decision to prescribe.

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