Published in final edited form as:

Sex Res Social Policy. 2015 December ; 12(4): 335–346. doi:10.1007/s13178-015-0204-y.

IMPORTANT BUT INCOMPLETE: PLAN B AS AN AVENUE FOR POST-ASSAULT CARE

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Abstract

Many survivors of rape do not seek post-assault care. The recent change in status of emergency contraception (EC), such as Plan B, to an over-the-counter (OTC) product may be further changing post-assault care-seeking. This descriptive study will quantify OTC EC use in the post-assault period and elicit survivors' desires for care. Data were collected from women purchasing OTC EC at university pharmacies (n=55) and students in an undergraduate university class (n=165). Quantitative results indicate annual prevalence rates of post-assault OTC EC use as 5.4%-7.3%. Qualitative analyses indicate OTC EC is an important but incomplete form of post-assault care. Future work should focus on intervention development to provide all OTC EC users with information about post-assault resources to prevent long-term sequelae.

Keywords

emergency contraception; rape; post-assault care

Lifetime prevalence rates of rape have been cited as one in six to seven American women (Kilpatrick, Edmunds, & Seymour, 1992; Tjaden & Thoennes, 2006). However, rape disproportionately affects young women between the ages of 11-24, with nearly 80% of females reporting that their first completed rape occurred before age 25 (Black et al., 2011). In fact, one in six to eight female high school students report a history of rape (Child Trends Data Bank, 2012; Erickson & Rapkin, 1991; Krebs, Lindquist, Warner, Fisher, & Martin,

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2009), while one in four to five American college women will suffer an attempted or completed rape during their college career (Fisher, Cullen, & Turner, 2000; Koss, Gidycz, & Wisniewski, 1987; Krebs et al., 2009). These dismal statistics illustrate that rape is the most frequent violent crime that occurs on college campuses (Finn, 1995; Fisher et al., 2000).

A sexual assault is defined as unwanted sexual contact in any form; rape is vaginal, anal, or oral penetration that occurred without the survivor's consent (Tjaden & Thoennes, 2006; Wolitzky-Taylor et al., 2011). Rape can include physical force, verbal manipulation, or incapacitation due to drugs, alcohol, or mental health status; the key element is that consent was not garnered (Butler & Welch, 2009).

Post-Assault Care

The consequences of rape include physical harm, psychological damage, increased use of health services after the assault, and impairment of personal relationships. Specific to college rape survivors, about 20% report physical injuries (Fisher et al., 2000). Among all rape survivors, 5% become pregnant and 30% contract a sexually transmitted infection (STI) in the post-assault period (Holmes, Resnick, Kilpatrick, & Best, 1996; Resnick et al., 2000). A survivor of sexual assault can experience a multitude of psychological reactions to the assault including anxiety, posttraumatic stress disorder (PTSD), depression, eating disorders, sleep disorders, substance abuse disorders, suicide attempts, and sexual problems in response to the assault (Chen et al., 2010; Foa & Rothbaum, 1998). Additionally, many college students fear social consequences, so they alienate themselves from campus activities or drop out of school, and it appears that college women who experience PTSD from an assault may use substances and/or sexual behavior to reduce distress (Messman-Moore, Ward, & Brown, 2009).

The current standard of care for sexual assault survivors, an exam by a Sexual Assault Nurse Examiner (SANE) along with its associated referrals, includes: (a) treatment of medical injuries; (b) testing and treatment of STIs; (c) pregnancy prevention including options if emergency contraception, such as Plan B, is not effective; (d) mental health care; (e) forensic data collection; (f) victim services; and (g) legal services (Ahrens et al., 2000; Campbell, Bybee, Ford, & Patterson, 2008; Campbell, Patterson, & Lichty, 2005; Department of Justice, 2013; Tjaden & Thoennes, 2006). This comprehensive exam has demonstrated improved outcomes by researchers within the context of the medical, forensic, and legal domains (Campbell et al., 2005).

Despite the high prevalence of rape, long-term negative effects on health, and the availability of post-assault services via the health care system in the United States too few women receive comprehensive post-assault care. In an analysis of post-assault community health seeking, only one third of rape survivors sought post-assault community assistance from at least one of the five social systems of legal, medical, mental health, rape crisis centers, and religious communities (Campbell, Wasco, Ahrens, Sefl, & Barnes, 2001). Survivors are reluctant to seek legal assistance, with only 5% of college students reporting their rape to the police (Fisher et al., 2000). Past research has identified numerous barriers to care that may prohibit or dispel a survivor from seeking care. An integrative review of the literature

synthesized these factors into (a) personal factors such as emotional states, fear of external exposure, and a lack of knowledge and (b) environmental factors such as structural barriers and societal myths (Munro, 2014).

Over-the-counter Plan B

In the past decade, there have been numerous advances to improve the control women have over their reproductive health. One of these developments includes the approval of emergency contraception, such as Plan B, as an over-the-counter (OTC) product. Plan B® is a registered trademark of Women's Capital Corporation, a subsidiary of Teva Women's Health Inc., all future references to Plan B will be referencing this product.

Plan B, otherwise known as the morning-after pill or emergency contraception, can be safely taken by almost every woman in need of emergency contraception. It is generally believed that Plan B is effective as a contraceptive method by preventing ovulation and tubal transport of sperm and ova; it is not an abortifacient, or substance that causes an abortion to occur (Scolaro, 2007). Plan B can be effective for up to 120 hours after administration, but data indicate a higher risk of therapeutic failure after 72 hours (Scolaro, 2007). Logically, Plan B would be used after three different scenarios: (a) contraceptive mishap or failure; (b) spontaneous intercourse; and (c) vaginal rape with a fear of pregnancy. Research conducted before Plan B was available OTC found that fears about pregnancy were one of the top three concerns that influenced survivors' decisions to seek post-assault care in the emergency room (Ledray & Arndt, 1994). Plan B was originally approved for use in the United States in 1999 (Scolaro, 2007). Additional legislative changes include approval as a nonprescription product for individuals age 18 and older in 2006, access to those age 17 and older in 2009, availability to ages 15 and older in May 2013, and in June 2013 the Federal Drug Administration removed all age restrictions from the purchase of OTC Plan B One-Step (Munro, Dulin, & Kuzma, 2015). With the new availability of OTC Plan B, a sexual assault survivor can now choose to not pursue care, can access comprehensive services post-assault via the emergency room, access non-forensic services via a health care provider, or meet pregnancy-prevention needs in isolation via the pharmacy.

Purpose

To date there have not been any studies undertaken to identify the relationship between the availability of OTC Plan B and the comprehensive care received or foregone by vaginal rape survivors. Preliminary data is needed to determine whether, in fact, a significant proportion of Plan B users are in the immediate post-assault time frame and desire or need additional services. The study will address two specific aims with three research questions.

Aim 1

To better understand the scope of the issue, we ask two quantitative questions.

(1a) What proportion of women requesting OTC Plan B at the university pharmacy were using it because of a vaginal rape?

(1b) What proportion of women in an undergraduate course who are vaginal rape survivors used Plan B in response to the rape?

(2) What proportion of survivors have the desire to seek additional care?

Aim 2

To begin exploring alternative ways to enhance uptake of comprehensive care, we added open-ended questions and used qualitative analysis.

(3) What care needs, desires, ideas, and concerns do post-assault survivors (including post-assault Plan B users) have that can provide the initial groundwork for future intervention development?

Methods

Design

This is a descriptive mixed methods study conducted with a small sample. It is intended as a preliminary exploration of the impact of Plan B on post-assault service use. It utilizes a participatory action research (PAR) framework involving an advisory group in the design, conduct, and final interpretation as a means to enhance both rigor and translation of findings into practice (Kemmis & McTaggart, 2000). The survey we conducted included both fixed response items for quantitative analysis and open-ended items for qualitative analysis (Cresswell, Klassen, Plano, Clark, & Clegg Smith, 2011).

A PAR type of approach is well-suited both to early work on a phenomenon and to intervention design with the target client group (Kemmis & McTaggart, 2000). The PAR framework allowed a group of consultants comprised of past survivors, pharmacists, psychologists, volunteers working with sexual assault survivors, and students to voice their opinions via face-to-face meetings. These individuals were recruited from university sexual assault centers, university health centers, and by word of mouth. They were consulted during the study development, administration of surveys, and during the interpretation phase, and their comments are included in the results as part of the findings..

A mixed-methods approach is particularly useful in studies where fixed-response items limit respondents ability to amplify their answers and provide spontaneous data they deem relevant. Since the overarching goal of this research trajectory is to develop an intervention for a population that is without a voice and is hidden within society, using both a PAR approach and a mixed-method survey maximizes the potential to translate findings into interventions to improve care for this potentially disadvantaged population.

Human Subjects Considerations

Approval was obtained from the University of Michigan, Health Sciences Behavioral Sciences Institutional Review Board and from each institution involved in data collection. Given the sensitivity of the topic and recent requirements of colleges to report information about cases of sexual assault on campus (i.e., Dear Colleague Letter distributed by the United States Department of Higher Education in 2011 and the Clery Act, 20 U.S.C. § 1092,

most recently amended in 2008), the Institutional Review Boards required that this project be conducted anonymously.

Recruitment, Participants, and Procedures

This study is focused on the needs of college-age women since this age group of women are at the highest risk of sexual assault and have the largest rate of emergency contraceptive use (Fisher et al., 2000; Kavanaugh, Williams, & Schwarz, 2011; Koss et al., 1987).

Convenience sampling was used. Participants were eligible if they met the inclusion criteria of (a) being age 17 or older (the age required to purchase Plan B at the time of the study) and (b) able to read and write English.

The pharmacy sample and procedures—The first setting recruited participants who accessed Plan B at one of four participating university pharmacies in the Midwest during the data collection period of November, 2011 to December, 2012. All four participating university pharmacies were located on the campus of four mid-size to large public universities with diverse student populations. All pharmacy staff at each participating institution received a brief written outline of the study purpose, design, and recruitment procedures along with a verbal explanation of the study from the study staff prior to data collection. At the time of the study, all pharmacies housed Plan B behind-the-counter, which necessitated potential participants to approach the pharmacist in order to purchase the medication. Pharmacy bags were pre-stuffed by study staff to include the Plan B medication and a self-addressed stamped envelope that included an information consent document, two pages of surveys, and a list of resources. All individuals purchasing OTC Plan B during the study period received the bag from the pharmacist and were notified that the bag included an invitation to participate in a study that was not linked to their care at the pharmacy. The survey used for this sample focuses on a vaginal rape that occurred within the past three days—the time frame aligned with Plan B use—but not lifetime history of sexual assault.

The classroom sample and procedures—A second sample was recruited from an introductory women's studies course at one of the large Midwestern universities already participating in the pharmacy portion of the study in October, 2012. All classroom participants (both men and women) received a copy of the survey upon entering their classroom, they were given verbal instructions to complete the survey if they desired, and they were also informed that the survey was not linked to their grade in class. The class included a small proportion of males, we opted to include males due to the preliminary nature of the study and because we do not know their influence on female Plan B users' decision-making. All classroom participants were instructed to place all completed, partially completed, and blank surveys in boxes at the end of class. The survey used for this sample focused on lifetime sexual assault and history of Plan B use, including probes to determine history over the past one year.

Measures

Quantitative Data—All participants answered demographic questions on age, race, ethnicity, and income; gender was only included for those participants recruited from the classroom setting.

Assault history was obtained next. Survivors and non-survivors were directed to separate sections of the questionnaire. The questionnaire completed by non-survivors is not presented in this paper. Survivors in the pharmacy sample and classroom sample went on to answer a series of items to determine prevalence and desires for services. Prevalence was determined based on questions from the Sexual Experiences Survey, which has been described as a behaviorally specific self-report instrument designed to reflect various degrees of sexual aggression and victimization (Koss & Gidycz, 1985). The full 10-item survey has demonstrated adequate reliability and validity with an internal consistency Cronbach alpha of 0.74 for women and a test-retest reliability over a one week interval demonstrating a mean item agreement of 93% (Koss & Gidycz, 1985). The four dichotomous items from the Sexual Experiences Survey utilized in this study included questions about unwanted intercourse related to (a) continual arguments and pressure, (b) use of authority, (c) incapacitation, and (d) physical force. In addition, investigator-generated items asked about: (a) the actual care the survivor had received (seven items); (b) the additional care they would have desired (seven items); (c) if they knew the perpetrator; and (d) how long ago this happened. The seven items of care the survivor received or desired were the elements of care in the standard national protocol for SANE services (Ahrens et al., 2000; Campbell et al., 2008; Campbell, Patterson, & Lichty, 2005; Department of Justice, 2013; Tjaden & Thoennes, 2006).

Qualitative Data—Survivors also answered this question: “If you could design a way to help other women using Plan B after unwanted sexual intercourse, what would you create for them?” in order to ascertain what desires post-assault survivors have for future intervention development.

Data Analyses

Quantitative analyses for Aim 1—All statistical analyses were completed using the IBM Statistical Package for the Social Sciences (SPSS) 20.0 (SPSS, Inc., Chicago, IL) after all data had been double-entered and cleaned for accuracy. All *p*-values were two-tailed and the level of significance was set at $<.05$. Due to the exploratory nature of the study, small sample size of rape survivors ($n=46$ female survivors; 1 survivor was a male survivor and will therefore be omitted for the purposes of this paper), and the preference to risk a Type I error, some trend-level interpretations are presented. Instances of missing data occurred primarily when respondents chose two answers or wrote in responses to signal ambivalence (e.g., “it depends” or “maybe” or “?”). We imputed a response to these by utilizing a univariate hot deck imputation process whereby we replaced missing values by random substitutions from the observed values (yes or no responses) (Schafer & Graham, 2002). Imputations made up only 1% of data points. If entire sections were left blank by a participant, then this was considered to be declining the section on purpose, as explained in the informed consent, and so no imputations were made. Preliminary analyses included response rates for both samples and descriptions of both samples’ demographics and the characteristics of their vaginal rape experiences. Because this was a descriptive study that was not testing a hypothesis, the goal was to gather as large a sample size as possible rather than focus on achieving a desired power.

Research Question #1a and b: A simple frequency was used to determine what proportion of individuals seeking Plan B in the pharmacy sample were survivors in the immediate post-assault period. A simple frequency was also used to determine what proportion of survivors in the classroom sample had ever used Plan B in the immediate post-assault period.

A chi-square goodness of fit test was conducted to assess whether the observed frequency in each sample is likely statistically significantly different from the rate in the population (Pallant, 2007). Given the low response rate in the pharmacy-based survey, we also conducted a sensitivity analysis to estimate a dependable range if selection bias played a role in the pattern of response (Little & Rubin, 2002).

Research Question #2: We described frequencies and percents for each of the seven elements of care from the national SANE guidelines that survivors could desire in both samples.

Qualitative analyses for Aim 2—Using the verbatim responses to the open-ended question, we explored survivors' desires for future intervention development. Qualitative analyses included two steps. First, word clouds were used for initial exploration of the data to guide the conceptualization of the groupings and categories that would be created during content analysis. Then, content analysis was employed for further examination of the data. Initial exploration of the open-ended research question in this study was completed using a word cloud created on the website Tagxedo (Leung, 2006). Word clouds are created by counting the frequency of words used by participants, where the number of utterances, or use of the word in an interview or open-ended question response, increases the size of the word. This depiction helped to guide additional qualitative analyses and interpretation with content analysis (McNaught & Lam, 2010). The process of content analysis then included three steps: (a) preparation, which included a primary content analysis to select the unit of analysis and make sense of the data; (b) analysis, with each reviewer independently reviewing for potential intervention ideas that included open coding, grouping, categorization, and abstraction; and (c) meeting with the PAR consultants for final interpretation and validation of findings, and this process included taking notes on their comments and main points (Elo & Kyngas, 2007).

Results

Respondents' Demographics

The pharmacy sample—The sample of pharmacy participants ($n=55$) all were female, ranged in age from 18-35 years ($M=23.69$, $SD=4.25$), were racially and ethnically diverse although they primarily included White European Americans, and reported incomes in the \$15,000-\$50,000 range.

The classroom sample—A total of 165 students participated including 149 females, 14 males, one transgender, and one with no response for gender. They had an age range of 18-32 ($M=20.14$, $SD=1.85$), income of \$50,000 or more, and a similar racial and ethnic composition to the pharmacy sample. There were thus 149 females in the final sample for analyses focused on survivors or vaginal rape.

There were significant differences between the two samples in age ($t(61.01) = 6.01, p < .001$) and income, with the classroom sample reporting higher incomes; $\chi^2(4) = 26.65, p < .001$. Differences in age and income between the two samples likely are related to the class being a sophomore-level course, with the students reporting their parents' incomes and the pharmacy sample including graduate and professional students and potentially some faculty reporting their own income.

Survivor subsample—The sub-sample of female survivors of unwanted intercourse ($n=46$) ranged in age from 18-29 ($M=20.89, SD=3.07$) years old. Survivors of unwanted intercourse were present at all data collection locations and represented a diverse range of individuals. Survivors self-reported their race as: Asian ($n=2; 4.3\%$); Black or African American ($n=2; 4.3\%$); White or European American ($n=41; 89.1\%$); and one did not report a race ($n=1; 2.2\%$). Ethnic identities included Not Hispanic/Latina ($n=42; 91.3\%$), Latina/Hispanic ($n=1; 2.2\%$), and Middle Eastern ($n=3, 6.5\%$). Survivors also reported a wide range of annual incomes including: less than \$15,000 ($n=3, 6.5\%$); \$15,000 - \$30,000 ($n=10, 21.7\%$); \$30,000 - \$50,000 ($n=4, 8.7\%$); \$50,000 or more ($n=22, 47.8\%$); and unknown ($n=7; 15.2\%$).

Response Rates

The pharmacy sample—Response rates for the four university pharmacy locations ranged from 3.33% to 22.64% with a total of 341 surveys distributed by the pharmacists and 55 returned by postal mail for a total response rate of 16.13%. These rates fall within the ranges of previously reported response rates for pharmacy clients who were handed out questionnaires at the time of purchase of a product and were asked to return them later (Smith, 1997; Whitaker, Wilson, Bargh, Chapman, & Dudley, 1995). Studies specifically undertaken within pharmacy settings to research emergency contraception have achieved response rates of lower than 10% related to the sensitive topic, time limitations, and attempts to minimize the burden of pharmacy staff (Killick & Irving, 2004; Gardner, Hutchings, Fuller, & Downing, 2001; Sommers, Chaiyakunapruk, Gardner, & Winkler, 2001).

The classroom sample—The response rate for the classroom participants was 61.80% (165 surveys completed and returned out of 267 distributed), with rape survivors ($n=43$) composing 26.06% of the sample that returned surveys and 16.10% of the total sample to whom surveys were distributed. Of note, one of the individuals who reported a history of a rape was a male participant. He will be removed from all analyses describing survivors because his victimization does not meet the definition of a vaginal rape being utilized for this study, making the sample size of female survivors for the classroom sample 42.

Sexual Assault Characteristics and Care Seeking

Characteristics of the assault—As shown in Table 1, the tactics most commonly used to coerce participants into unwanted sexual intercourse were continual arguments and pressure and incapacitation with alcohol or drugs. In both samples the majority of survivors knew the perpetrator (83.3% in the classroom sample vs. 75.0% in the pharmacy sample).

Characteristics of care received among survivors—Post-assault survivors in this sample were most likely to receive STI testing and emergency contraceptives. Alternatively rates of receiving the other components of comprehensive care among the classroom and pharmacy samples were very low. Table 2 displays the characteristics of received care among survivors of unwanted intercourse.

Additional analyses taking into consideration whether or not the survivor knew the perpetrator, when the assault occurred, and how unwanted intercourse occurred revealed some trend differences in the elements of care survivors *did* receive. Participants who knew the perpetrator demonstrated a trend to seek STI testing less often (42.1%) than those who did not know the perpetrator (75.0%); $\chi^2(1) = 2.866, p = .096$ (corrected with Fisher's exact test). Additionally, those survivors who had been assaulted within the last year demonstrated a trend toward greater emergency contraception use, such as OTC Plan B, at a rate of 52.2% compared to 26.1% of those who were assaulted over a year ago; $\chi^2(1) = 3.286, p = .070$. Finally, in assaults where the perpetrator coerced the survivor into unwanted intercourse using continual arguments/pressure or incapacitation with drugs and/or alcohol, survivors were less likely to use mental health care; $\chi^2(1) = 18.756, p < .001$.

Aim 1, Research Question #1: What is the rate of OTC Plan B use after vaginal rape?

Rape survivors purchasing OTC Plan B ($n=4$) composed 7.3% of the pharmacy sample that returned surveys (4/55). Classroom sample females who had ever experienced vaginal rape ($n=42$) composed 28.2% of that sample (42/149). Of these, 14 had used emergency contraception in the post-assault period (33%; 14/42). In the classroom sample there were 19 who reported a vaginal rape in the past year (12.8%; 19/149). Of these 8 reported using emergency contraception in the post-assault period (42%; 8/19). Overall, this means that 5.4% of the classroom sample (8/149) had used emergency contraception in the post-assault period in the past year. This rate is similar to the 7.3% rate of OTC Plan B users in the pharmacy sample who were seeking emergency contraception post assault; a rate accrued over a similar one-year period of survey distribution (7.3% versus 5.4%; $\chi^2 = 0.26, p = .608$).

To address the concern about validity due to the response bias inherent in the low response rate in the pharmacy sample, we conducted sensitivity and goodness of fit analyses. For the sensitivity analysis we estimated the lowest possible range for the samples by making the conservative assumption that none of the individuals who did not return surveys were survivors. The lowest possible rate of OTC Plan B use in the pharmacy sample would then be 1.2% (4 out of 341 surveys distributed). The lowest possible rate of emergency contraception use among survivors in the last year in the classroom sample would be 3.0% (8 out of 267 surveys distributed).

To estimate a chi-square goodness of fit test, we used a conservative annual incidence of rape in college populations. We used Fisher et al.'s (2000) estimate that 4.9% of college women are victimized in any given calendar year, and we rounded this to 5%. There was not a significant difference in the proportion of survivors of unwanted intercourse purchasing OTC Plan B identified in the pharmacy sample (7.3%) as compared with this estimated national annual incidence of rape of 5% among college populations ($\chi^2(1, n=55) = .598, p$

= .439). The chi-square goodness of fit test applied to the classroom sample also indicates that there is not a significant difference between the proportion of survivors of unwanted intercourse purchasing emergency contraception post-assault in the classroom sample in the last year (5.4%) and the estimated 5% national annual incidence of rape among college populations ($\chi^2(1, n=149 \text{ women}) = .043, p = .836$).

Aim 1, Research Question #2: What care do survivors desire?

Among all 46 survivors, none sought forensic services and only one sought advocate services. Thus, we see that use of the gold-standard SANE services are rare. The profile of what they would have desired (i.e., potential unmet needs) is shown in Table 3 and indicates that both groups of survivors would have desired additional services. The most frequent desires were for STI testing, pregnancy testing, mental health care, and a sexual assault victim advocate. Forensic services were the least frequently desired.

Aim 2, Research Question #3: What might future interventions provide?

Initial exploration of the open-ended responses of survivors from both samples combined ($n=46$) began with the use of the word cloud displayed in Figure 1. This graphic demonstrates that despite the focus of this study on the use of emergency contraception to prevent pregnancy, survivors described potential interventions that focused broadly on “information,” “counseling,” and “resources” as they were displayed as more recurrent themes within the word cloud. Furthermore, survivors used terms such as “pamphlet” and “packaging” to describe future interventions for survivors of unwanted intercourse using OTC Plan B in the immediate post-assault period. These preliminary results within the word cloud indicate that survivors were focused on information interventions to supplement pregnancy prevention in the post-assault period.

Subsequent detailed content analysis identified four themes about the survivor’s desires for post-assault care that included: (a) additional information about Plan B and post-assault care ($n=5$; 10.6%); (b) easier access to Plan B ($n=9$; 19.1%); (c) comprehensive programs that addressed a wide range of post-assault needs including counseling ($n=7$; 14.9%); and (d) innovative interventions for distribution of Plan B with information regarding post-assault services ($n=6$; 12.8%). There were a number of survivors who did not respond to the question regarding desires for post-assault interventions ($n=19$; 41.3%).

Additional information—As noted in the word cloud in Figure 1, rape survivors placed emphasis on the need for “information.” One participant thought it would be helpful for post-assault users of Plan B to have “information on how to avoid unwanted sex” (Age 20; previous OTC Plan B use after assault). Another participant reported that post-assault survivors accessing emergency contraception needed “more information about Plan B” (Age 20; previous OTC Plan B use within 2 days of assault). These survivors demonstrate that despite their knowledge about where to access Plan B in the post-assault period, they were not aware of some of the supplemental information that could be helpful to post-assault survivors such as additional resources for help and more information about the actual medication.

Easier access—As supported in the word cloud, post-assault survivors demonstrated support for easier “access” and a free “cost” to emergency contraceptive. For instance, one participant who did not use emergency contraception in the post-assault period noted that she “would eliminate age restrictions” to Plan B access (Age 22; assaulted by a stranger). While another participant responded that it was necessary to “make getting Plan B easier and let people know that Plan B is NOT an abortion pill” (Age 18; assaulted by a stranger, no emergency contraception use). These survivors demonstrated support for the recent FDA approval that removed age restrictions on purchasing OTC Plan B One-Step (Munro et al., 2015) to improve access. The current cost of Plan B at the university pharmacies enrolled in this study ranged from \$30 to \$40. This amount is less than the cost within a community pharmacy that ranges from \$35 to \$60; however, cost was still seen as a barrier by many survivors (Office of Population Research and Association of Reproductive Health Professionals, 2012).

Comprehensive programs for post-assault care—Survivors of unwanted intercourse in this study also described a need for more comprehensive post-assault programs that may or may not include legal implications. In the word cloud, this theme can be visualized with words such as “counseling,” “mental,” “resources,” “testing,” and “psychological.” One participant described the need for more comprehensive information with Plan B:

All types of resources into one program – legal, medical, psychological, etc. If not a program, maybe getting a comprehensive referral sheet to all these different services (low cost) or ideally having a place you can walk into and talk to someone about all these different things and help bring them to your attention or set you up with them. Sometimes you can’t even identify what all your needs are when [you] are so overwhelmed with what happened. By the time you realize, it may be too late (Age 28; obtained OTC Plan B within 3 days of sexual assault by a known assailant).

Another participant wrote that survivors need “a plan to deal with all the issues that come with unwanted sex: 1. Mental, 2. Physical, 3. Spiritual” (Age 19; only form of post-assault care was OTC Plan B). These two OTC Plan B users wanted comprehensive services, but did not utilize available SANE services, which do include the aspects of care they desired.

Innovative interventions—Survivors in this study described some innovative interventions that could be utilized with OTC emergency contraception to increase awareness of services and address the unmet needs of survivors. Within the word cloud some of these interventions are described as “pamphlet,” “packaging,” “sheet,” and “program.” One participant wrote that it would be helpful for survivors to get “a pamphlet handed out upon receiving Plan B that details options concerning sexual assault/pregnancy/contraceptive choices” (Age 19; previous emergency contraception use after assault by known assailant within last 12 months). Another participant described an intervention that would include “a hotline (that is included in the Plan B packaging) to talk to a mental health counselor or social worker” (Age 20; assaulted by a known assailant within last month). Both of these innovative ideas were supported by another survivor when she wrote, “attach a flyer with

resources inside the Plan B package” (Age 20; used emergency contraception after assault by an unknown assailant). This same survivor also made evident that she would not want a pharmacy-based intervention by recording the following statement “I personally would NOT want the pharmacy (a public environment) to give me a run down of support/services just b/c I am purchasing Plan B. It’s embarrassing enough.”

Review by PAR Committee

The final step in analysis was to return tentative findings to the PAR consultants. This group confirmed the conclusions. Results we presented also led to discussions about past scenarios the consultants had been a part of that supported the results of this study. For example, one PAR consultant described a scenario in which she helped a student purchase Plan B because she didn’t have enough money and looked like she had been through a tough time and needed it. The PAR consultants also emphasized that they are aware that college-age survivors often know the perpetrator and do not wish to pursue emergency room care or a forensic exam so they are indeed looking for an option that is easily accessible and private. Based on presentation of the research results, one PAR consultant said that survivors appear to “want an option that is private but there is a lack of information to seek other kinds of care that they would need.” This same PAR consultant concluded that Plan B “is important but incomplete.”

Discussion

This study has five important conclusions that resonate with that “important but incomplete” way to characterize the use of OTC Plan B in the post assault period. These conclusions are: (a) survivors of unwanted intercourse are indeed accessing OTC Plan B in the post-assault period; (b) use of available SANE comprehensive care services is rare; (c) survivors’ post-assault decision-making is associated with characteristics of the assault; (d) post-assault survivors accessing OTC Plan B desire more information about services; and (e) OTC Plan B may be one vehicle to provide an additional model for post-assault care.

It is an important finding that survivors of unwanted intercourse are indeed accessing Plan B as their first and sometimes only form of post-assault care. Thus, the ability to access Plan B over-the-counter is providing a very important avenue for vaginal rape survivors to meet their need to prevent pregnancy. The pharmacy sample demonstrated that 7.3% of those accessing OTC Plan B in a college health service pharmacy setting were doing so in the aftermath of unwanted intercourse. From the classroom sample, we saw that 33% had ever used emergency contraception post-assault, with a slightly higher 42% rate for assaults that happened in the past year; whereas only one had used advocacy services and none had used forensic services. This suggests that emergency contraception, such as Plan B, is being used in isolation from comprehensive SANE services.

Also important, survivors’ post-assault decision-making was associated with the characteristics of the assault. Survivors who knew the perpetrator demonstrated a trend that they were less likely to pursue STI testing while survivors coerced into unwanted sexual intercourse via arguments/pressure or incapacitation with alcohol and/or drugs, which are common tactics utilized in the college setting (Abbey, 2002), were less likely to get mental

health care. College-age survivors are not likely to pursue legal action with past statistics demonstrating that less than 5% of college-age women reported an attempted or completed rape to police (Fisher et al., 2000). Thus, within the college or university environment where 82.6% of survivors in this study knew the perpetrator and where many survivors do not pursue legal action, what we think is needed or is the gold standard for post-assault care may not be in line with the needs and desires of many survivors. In fact, many survivors may associate a SANE exam with the components of a forensic exam and legal counsel and therefore consider this course of post-assault care to be for individuals who are seeking legal assistance in the prosecution of a forceful stranger rape. This is consistent with past work that has demonstrated that women who are sexually assaulted in a more stereotypical fashion (i.e., stranger or by force) are more likely to acknowledge the events as rape and seek formal medical and legal services (Zinzow et al., 2012). It is possible that as soon as survivors could, they declined the available model of gold standard post-assault care and opted to give up the option for comprehensive care services in order to be able to avoid contact with the criminal justice system.

Furthermore, survivors accessing OTC Plan B post-assault have expressed that they do desire more information about comprehensive care services. The qualitative data in particular indicate that survivors would like additional information about unwanted intercourse, Plan B as a medication, the types of post-assault services available, and how to access these services. Despite the availability of information regarding comprehensive post-assault services from the emergency room, SANE, or rape crisis center, participants described interventions that could be incorporated into the distribution of emergency contraception, such as OTC Plan B. The word cloud exploration indicated the importance of having an easily accessible and confidential form of care for individuals in the post-assault period.

Finally, another closely related point that emerged from these data was the indication that survivors do have desires for additional post-assault care that may not fit within the current framework of a “rape kit” or forensic evidence collection that has become synonymous with SANE post-assault care in the emergency room setting. The OTC availability of Plan B may be the best pre-existing structure to build upon to put in place a second model for post-assault care. Pharmacy research has demonstrated that brief counseling sessions increase both short and long-term knowledge retention concerning the properties of emergency contraception in regards to mechanism of action, adverse effects, efficacy, and administration (Ragland et al., 2011). Despite the improvement in knowledge scores regarding emergency contraception, there are limitations to providing education and counseling within the pharmacy including the public pharmacy environment and pharmacists’ comfort with providing education and counseling (Bajos, Goulard, Job-Spira, & COCON Group, 2003). A qualitative response in this study indicated that privacy was a concern given both the public venue and the stigma the survivor feels. Survivors have also expressed that they value the easy accessibility and confidentiality that OTC Plan B affords. The anonymity of the OTC process seems to provide an element of control that the SANE exam does not. Future work on developing interventions to supplement the knowledge of emergency contraceptive users, particularly those that are seeking care post-assault, should

therefore focus on innovative disbursement methods that retain the features most valued by its users including ease of access and discretion.

Limitations

The limitations of this study include a low response rate for the pharmacy sample, student sample limitations, and self-report measures. The low response rate for the pharmacy sample resulted in the need to recruit participants from a classroom setting as well. In the end, this adaptation to the study design resulted in an opportunity to validate the findings from the pharmacy sample. This study utilized a unique methodology in order to minimize disruption to the pharmacy and to maintain anonymity. Past work attempting to research sexual health in a pharmacy setting was met with numerous methodological challenges including pharmacy staff members being uneasy with recruitment, concerns about breach of confidentiality, and lack of familiarity with research procedures (Black, Anderson, Kubba, & Wellings, 2009). Thus, recommendations for survey research in the pharmacy setting that were incorporated into this study included: (a) minimizing pharmacy disruption; (b) providing all necessary supplies and equipment; and (c) briefing all pharmacy personnel (Black et al., 2009). Additionally, our response rates among the four university pharmacy sites varied dramatically. We suspect this was related to the university student's comfort participating in research studies; as two of the universities were "research intensive" institutions in which students had numerous opportunities to participate in research projects and two were not.

Another limitation of this study includes its focus on vaginal rape survivors and Plan B users accessing care at the campus pharmacy within universities in the Midwest. This geographical restraint limits the generalizability of the results to other populations beyond university campuses. However, the campus environment will capture many women who are among those at the highest risk of rape (Fisher et al., 2000). All participating universities are state universities and are home to a diverse group of students, allowing for increased generalizability of the research results across race and class boundaries. In addition, there are limitations to obtaining all of the data via surveys due to self-report bias. To minimize this effect, this study did adhere to many of the methodological recommendations of measuring sensitive topics, specifically rape, by (a) maintaining anonymity and (b) including behaviorally specific questions (Fisher, 2009).

Conclusions

This preliminary mixed-method study aimed to increase the voice and visibility of survivors of unwanted intercourse accessing post-assault pregnancy prevention. In capturing the voices of survivors, advocates, allies, and practitioners it became apparent both that some OTC Plan B users are accessing Plan B at the pharmacy in the immediate post-assault period and that college-age women are seeking OTC Plan B in lieu of available comprehensive post-assault services. Thus, we conclude that OTC Plan B is an important but only partial mode of post-assault care. As currently dispensed there is a missed opportunity to provide Plan B users with patient information to address specific situations including that intercourse was not voluntary and that the user might desire other services appropriate for vaginal rape survivors.

Future frameworks and interventions could build off our finding that the pharmacy appears to be an important locus of care-seeking in the post-assault period. Future work should therefore be focused on intervention development to supplement the minimal amount of information that is currently available with OTC Plan B in order to provide survivors (and all others using Plan B) with information about additional services and resources such as STI testing, mental health care, birth control options, victim advocacy services, and legal care. Furthermore, given the low uptake of many elements of comprehensive care, it is imperative that we explore additional innovative ways to address post-assault needs, taking into consideration the characteristics of the survivor and of the assault that may impact post-assault decision-making and desired models of care.

ACKNOWLEDGEMENTS

We would like to acknowledge the university health service pharmacies that participated for their assistance with recruitment and data collection including those that wish to be named: University of Michigan - University Health Service, Eastern Michigan University Snow Health Center Pharmacy, and the Western Michigan University Sindecuse Pharmacy.

FUNDING: The first author gratefully acknowledges grant support by the National Institutes of Health, National Institutes for Nursing Research, F31NR012852; the Midwest Nursing Research Society and Council for the Advancement of Nursing Science Dissertation Grant; the Rho Chapter, Sigma Theta Tau International Research Award; the University of Michigan Rackham Dissertation Grant; and the University of Michigan Women's Studies Thevenet Award.

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Table 1

Characteristics of the Assault

Characteristics	Classroom Participants Who Are Vaginal Rape Survivors (n=42)	Pharmacy Participants Who Are Vaginal Rape Survivors (n=4)
History of Rape *		
Due to continual arguments and pressure	69.1% (29)	25.0% (1)
Due to use of authority	4.8% (2)	0.0% (0)
Due to incapacitation with alcohol or drugs	59.5% (25)	75.0% (3)
Due to use of force	9.5% (4)	0.0% (0)
The survivor knew the perpetrator	83.3% (35)	75.0% (3)
How long ago did this happen *		
Less than one month ago	14.3% (6)	
One – six months ago	9.5% (4)	
Seven months – one year ago	21.4% (9)	
One – three years ago	38.1% (16)	
More than three years ago	16.6% (7)	
Less than 12 hours ago		25.0% (1)
13-24 hours ago		25.0% (1)
2 days ago		25.0% (1)
3 days ago		25.0% (1)

* Percents may total greater than 100 due to multiple responses

Table 2

Characteristics of Care Received Among Vaginal Rape Survivors

Characteristics	Classroom Participants Who Are Vaginal Rape Survivors (n=42)	Pharmacy Participants Who Are Vaginal Rape Survivors (n=4)
Treatment of Physical Injuries	2.4% (1)	0.0% (0)
Plan B Use	33.3 % (14)	100.0% (4)
STI Testing	47.6% (20)	50.0% (2)
Referral for Mental Health Care	11.9% (5)	25.0% (1)
Examined for Forensic Evidence Collection	0.0% (0)	0.0% (0)
Met with Sexual Assault Victim Advocate	2.4% (1)	0.0% (0)
Received Information about Legal Options	9.5% (4)	0.0% (0)
Received Information about Options for Care	14.3% (6)	25.0% (1)

* We did not query the pharmacy participants about a past history of rape; therefore these rates were only based on the individuals who used Plan B specifically after a vaginal rape.

Table 3

Characteristics of Desired Referral Care Among Vaginal Rape Survivors

Characteristics	Classroom Participants Who Are Vaginal Rape Survivors (n=42)	Pharmacy Participants Who Are Vaginal Rape Survivors(n=4)
Referral for Treatment of Physical Injuries	19.0% (8)	25.0% (1)
Referral for Pregnancy Testing	45.2% (19)	50.0% (2)
Referral for STI Testing	52.4% (22)	25.0% (1)
Referral for Mental Health Care	35.7% (15)	25.0% (1)
Referral for Forensic Evidence Collection	16.7% (7)	25.0% (1)
Referral for a Sexual Assault Victim Advocate	23.8% (10)	50.0% (2)
Referral for Legal Services	16.7% (7)	75.0% (3)
Referral for None of the Above	14.3% (6)	0.0% (0)