Article

Journal of Interpersonal Violence
Volume 25 Number 1
January 2010 111-135

10.1177/0886260508329123
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http://online.sagepub.com

Sexual Violence Prevention

The Role of Stages of Change

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Increasing numbers of empirical studies and theoretical frameworks for preventing sexual violence are appearing in the research- and practice-based literatures. The consensus of this work is that although important lessons have been learned, the field is still in the early stages of developing and fully researching effective models, particularly for the primary prevention of this problem in communities. The purpose of this article is to discuss the utility of applying the transtheoretical model of readiness for change to sexual violence prevention and evaluation. A review of this model and its application in one promising new primary prevention program is provided, along with exploratory data about what is learned about program design and effectiveness when the model is used. The study also represents one of the first attempts to operationalize and create specific measures to quantify readiness for change in the context of sexual violence prevention and evaluation. Implications for program development and evaluation research are discussed.

Keywords: *sexual violence prevention; bystander; informal helper*

The high level of sexual violence on college campuses has led to calls for innovative prevention methods. A number of reviews have highlighted the variability of these programs and found mixed results concerning their effectiveness (e.g., Anderson & Whiston, 2005; Breitenbecher, 2000). Discussions of tailoring program focus to variations in specific types of participants have centered on many key variables, such as program duration,

Authors' Note: This project was supported by Grant 2002-WG-BX-0009 awarded by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. Points of view in this document are those of the authors and do not necessarily represent the official position or policies of the U.S. Department of Justice. Correspondence concerning this article should be addressed to Victoria L. Banyard, University of New Hampshire, Department of Psychology, 10 Library Way, Durham, NH 03824; e-mail: victoria.banyard@unh.edu.

age (e.g., different prevention efforts for high school and college audiences), gender (with at times different program offerings for men and women), student athletes (e.g. O'Brien, 2001), and how to make programs more salient to participants. In this article, we propose an additional variable that may help clarify variations among participants in the impact of programming and facilitate tailoring prevention messages in ways that improve program effectiveness: Prochaska and DiClemente's (1983, 1984, 1986) transtheoretical model (TTM) of change. We propose that measuring and understanding participants' levels of understanding and motivation for engaging in prevention work will allow programs to be tailored to meet their specific needs.

We explore how the readiness-for-change model may be applied and used for sexual violence prevention, using one prevention program, Bringing in the Bystander, as a case example. To do so, we first describe why the TTM may be relevant for sexual violence prevention and how the theory is reflected in specific program components of Bringing in the Bystander. Next, several new measures designed to assess readiness for change are described and used to assess components of readiness for change among participants in an evaluation of the program. Thus, we aim to document the application of the TTM to program design and evaluation.

The Bringing in the Bystander Program

The Bringing in the Bystander program is one of a number of primary interpersonal violence prevention programs that center on discussions of bystander responsibility (see, e.g., Banyard, Moynihan, & Plante, 2007; Banyard, Plante, & Moynihan, 2004; Berkowitz, 2002; Foubert & Newberry, 2006; Katz, 1995). The model focuses jointly on increasing community members' receptiveness to prevention messages and training and supporting prosocial bystander behaviors with the intent of preventing assaults from happening and assisting survivors who may disclose. It works to promote attitude and behavior changes in individuals that are intended to then link to individual empowerment to contribute to community changes and shifts in broader community norms. The program is based on empirical and theoretical work (e.g., Lisak & Miller, 2002; Schwartz, DeKeseredy, Tait, & Alvi, 2001) that implicates community norms and bystander attitudes as aspects of community that facilitate interpersonal violence and research in sexual violence prevention that highlights the importance of attitude change (e.g., Chiroro, Bohner, Viki, & Jarvis, 2004; O'Donohue, Yeater, & Fanetti, 2003). For example, Schwartz et al. (2001) noted that sexual assaults are

more likely in settings in which informal guardians or active bystanders do not intervene. An outcome of this is that sexual violence is likely to be prevented to the extent that there is a criminal justice response to perpetrators (many of whom commit multiple crimes; Lisak & Miller, 2002) and to the extent that potential bystanders change attitudes and behaviors that make it more likely that they will intervene in risky situations. The Bringing in the Bystander program was effective in increasing knowledge, decreasing rape-supportive attitudes, and increasing bystander behavior over time in an experimental evaluation presented elsewhere (Banyard et al., 2007).

The readiness-for-change component of the Bringing in the Bystander program originated from the TTM of Prochaska and DiClemente (e.g., Grimley, Prochaska, Velicer, Blais, & DiClemente, 1994; Prochaska & DiClemente, 1983, 1984, 1986; Prochaska et al., 1994). Mostly, the TTM has been applied to changing health-related behaviors such as smoking and other addictions. Put succinctly, the TTM proposes that individuals (and communities, as suggested by Edwards, Jumper-Thurman, Plested, Oetting, & Swanson, 2000) progress through a number of stages before changing adverse behaviors. The stages based on this model range from no awareness or denial of the problem to action-oriented states in which individuals implement specific behavior-change plans. The practical implications of the model include recommendations for different types of change strategies that will be most useful at different stages of change. The theory posits that prevention and intervention efforts to change health-related behaviors tend to be more successful when different messages and techniques are used at each stage to move individuals on to the next level.

There are parallels to the types of attitude and behavior change that may be needed for successful violence prevention, and the TTM has been applied by many researchers to intimate partner violence and child maltreatment intervention (see discussion later in this article). Research on the causes of sexual violence and on the effectiveness of prevention point to the need to change community norms (e.g., Berkowitz, 2002; Schwartz et al., 2001). For individuals, this means decreasing rape-supportive attitudes, increasing knowledge and the ability to identify the problem of sexual violence, and a decision to change one's own behavior so that along with more willingness to be an active bystander, an individual also performs these behaviors more frequently. Although there are clearly differences in comparison with behaviors such as smoking, which carry clear individual reinforcement for the negative health behavior, there are also similarities. Lonsway (1996) pointed to the ways in which rape myths are firmly held and the defensiveness and resistance individuals have to discussing sexual assault and its prevention.

Individuals do not want to believe that the topic applies to them, that behavior change on their part may be needed to ameliorate the problem, and that their inaction may indeed be part of the problem supporting the success of perpetrators in the community (e.g., Lisak & Miller, 2002). It may be hypothesized that in making these changes, individuals may go through stages of change related to increasing their awareness of sexual violence and the bystander role and their willingness to engage in active, prosocial bystander behaviors.

The TTM

Stages of Change

Individuals in the first stage, *precontemplation*, are not aware of a problem, do not define an issue or their behavior related to it as a problem, or have no plans to do anything about a problem, if they are aware of it. Individuals in the second stage, *contemplative*, intend to change in the near future and are more aware of the problem as well as the costs and benefits of changing their behavior. The third stage, *preparation*, includes those individuals who intend to take immediate action, have plans of action, or have taken some recent significant actions to change their behavior. In the *action* stage, individuals have modified their behavior, and only real risk-reducing behaviors count in this stage. Moreover, and again with respect to stopping harmful behaviors, the action stage is when it is critical to attend to the prevention of relapse (for a concise overview of the stages of change, see Levesque, Prochaska, & Prochaska, 1999). Finally, during the *maintenance* stage, individuals work to prevent relapse and are more confident that they can continue to change. Finally, Prochaska and DiClemente (1983, 1986) noted that the shape of the change process is more spiral than linear before desired behavior is realized.

Processes of Change

According to the TTM, throughout these stages, individuals apply various change processes, described below, to greater or lesser degrees. These 10 processes of change focus on how change occurs and what tools or techniques will be most useful at a given stage for moving individuals forward in their readiness for change (e.g., Levesque et al., 1999). The key here is that different prevention tools may be needed to help move individuals forward in attitude and behavior change, depending on where they are in the stages of change. Later in this article, we illustrate these processes as embodied by key components of our bystander intervention program (Table 1).

Table 1
Key Processes of the Transtheoretical Model (TTM) of Change and Related Components of the Bringing in the Bystander Program

Key Processes of the TTM	Components from the Bringing in the Bystander Program
Consciousness raising	• Education on the definitions of "bystander" • Statistics on sexual assault prevalence • Consent laws • Relating bystander intervention to a local campus gang rape case (Stoke Hall case) • Social psychology findings related to bystander phenomenon • The continuum of sexual violence
Dramatic relief	• Visualization and empathy-building exercise, followed by processing of the anger associated with it • Processing of the Stoke Hall case
Environmental reevaluation	• Sharing of personal bystander stories • Processing the emotions related to incidents in which people did or did not act as bystanders • Discussion of research related to role modeling • Increasing participant investment in becoming positive role models
Social liberation	• Seems to be the piece of the TTM that best represents the overall goals promoted by the Bringing in the Bystander program • Encouragement throughout the program; challenging participants to apply what they are learning to others in their communities
Self-reevaluation	• Acknowledging unsafe strategies that participants may have used in the past
Stimulus control	• Discussing specific strategies for positive intervening before, during, and after incidents of sexual assault
Helping relationships	• Working in groups on role-playing exercise • Continuous support from and encouragement from group leaders
Counterconditioning	• The two-factor model for being a safe bystander (the decision-making process) • Discussion of gender roles and their impact on decision making • Brainstorming around creative ways to be a prosocial bystander
Reinforcement management	• Completion of and discussion around the "plan of action" exercise
Self-liberation	• The bystander pledge • Encouragement to share the plan of action with those who are close to participants and others in their communities

Source: Prochaska and DiClemente (1983, 1984, 1986). The full curriculum of the program can be found in Plante et al., 2008.

Decisional Balance

In addition to the stages and processes of change, the TTM integrates analysis of decisional balance, consisting of the pros and cons of making various changes (Levesque et al., 1999). Earlier stages of change tend to be characterized by the prevalence of cons for behavior change, with pros eventually outweighing cons in later ones (Prochaska et al., 1994, p. 44).

Self-Efficacy

Self-efficacy is composed of a person's belief that he or she can reach an intended goal. With respect to TTM, researchers have found that self-efficacy differs across stages of change, with greater self-efficacy outweighing temptation to relapse in the latter stages of change (e.g., Levesque et al., 1999).

Application of the TTM to Interpersonal Violence

A number of recent efforts have applied the TTM to the field of interpersonal violence (e.g., Brown, 1997; Chang et al., 2006; Levesque, Gelles, & Velicer, 2000; Scott & Wolfe, 2003). Most commonly, readiness for change is used to assess the readiness of abusive men to end their use of violence in intimate relationships (e.g., Levesque et al., 2000). Additionally, Brown (1997) suggested the applicability of the TTM to improve the understanding of how battered women make changes as they work to overcome abuse in their lives. Further, Prochaska, Evers, Prochaska, van Marter, and Johnson (2007) used the TTM to create individualized and interactive computer interventions to prevent bullying behavior with middle and high school students, defining three roles relating to bullying: bully, victim, and passive bystander. Mudde, Hoefnagels, Van Wijnen, and Kremers (2007) applied the TTM as a method to explain helping behavior of nonprofessional adults toward abused children and found support for applying the model to this behavior. Berkowitz (2002), in a theoretical review, noted the potential application of the stages-of-change model to sexual assault prevention programs and the potential of the bystander approach to move sexual assault prevention beyond individual change to that of social change.

Our application of the TTM to a specific sexual violence prevention program finds common ground with much research that has gone before. At the core of the program are attempts to move individuals forward in their awareness of and motivation to do something about the problem of sexual violence. Given the focus of the program on community responsibility, it is

hypothesized, as Berkowitz (2002) suggested, that moving individuals forward in their stages of change will also contribute to changing broader community norms and attitudes and thus move the full community forward in its stage of change in addressing sexual violence. More specifically, the program applies many of the basic tenets of the TTM in a primary prevention program setting to enable participants to decrease attitudes that support interpersonal violence and inaction in its midst and to substitute increased willingness to be an active bystander, a community member who actively works to end sexual violence.

Bringing in the Bystander: Program Components and the Stages and Processes of the TTM

Our first goal in this article is to describe how aspects of the TTM can be applied to a specific sexual violence prevention program. Prochaska and DiClemente (1983, 1984, 1986) indicated that there are 10 key components (see Table 1) within the TTM that must be made tangible for an intervention to achieve its desired goal. A review of the Bringing in the Bystander program demonstrates a strong link between the program and the processes of change proposed by Prochaska and DiClemente (see Plante et al., 2008 for full curriculum).

First and foremost, participants must be made aware of and be educated about the nature of the presenting problem, in what the authors called consciousness raising. The initial goal of the Bringing in the Bystander program is to educate its participants on the magnitude of sexual violence present in their community and the potential role that bystanders can play. Specifically, participants are given local and national sexual assault statistics and presented the nuances of consent laws. Later in the program, participants are taught that sexual violence exists on a continuum and through a discussion exercise are instructed on how communities that do not challenge relatively minor instances of sexual violence are more prone to instances of sexual assault and rape.

Furthermore, participants are educated on the definition of a prosocial bystander and challenged to think of ways that such bystanders could aid in the prevention of sexual violence. More specifically, they are also told a detailed story of a rape case that has had a direct impact on their own community, in which bystanders could have intervened but did not.

Prochaska and DiClemente (1983, 1984, 1986) explained that it is helpful to pair consciousness raising with a more affective understanding of the problematic behavior, referred to as dramatic relief. In addition to raising participants' awareness of sexual violence in a concrete manner, a further goal of the

Bringing in the Bystander program is to evoke an emotional reaction. For instance, participants are asked to share their own experiences of someone intervening on their behalf and the emotional impact it had on them. Later, participants are taken through an empathy-building exercise that symbolically demonstrates the emotional trauma experienced by assault survivors as they try to cope with the affective aftermath of their assault. Both of these exercises are followed by discussions facilitated by the group leaders in which the participants are encouraged to process their emotional reactions. The goal of educational consciousness raising and more affective dramatic relief is to reinforce to the participants that sexual violence is a pervasive problem in their community; that it has a significant, far-reaching impact; and that there are things prosocial bystanders can do to help increase prevention.

A further process suggested by the TTM is environmental reevaluation. Here, participants are asked to explore the role they themselves are playing in the context of the identified problem and how they may be able to have a more positive impact. It is at this point in the Bringing in the Bystander program that participants are asked to share their own bystander-related stories and to process any related emotional reactions. Last, participants are educated on research related to positive role modeling and reminded that they have the power to become positive role models for others in the community to follow. Because the process of social liberation is such an integral part of the prevention program, it is discussed below along with helping relationships, another fundamental element of the program.

In the process of self-reevaluation, participants are also challenged to acknowledge maladaptive or unsafe strategies they may have used in the past. Once participants have increased their awareness of the role that they can play in the prevention of problem behavior, they are able to engage in stimulus control. Prochaska and DiClemente (1983, 1984, 1986) indicated that stimulus control is defined as control of situations and other causes that lead to problematic behavior and providing alternatives. It is here in our program that participants are challenged to come up with ideas of things in their community that could lead to sexual violence and how they might behave to divert these risks. Participants have shared ideas such as using designated nondrinkers when they go to parties, whose responsibility it is to make sure no one leaves the party alone. Other participants have shared their newfound desire to challenge sexist jokes or rape stereotypes they hear from others in an attempt to challenge negative community norms that promote the dehumanization of women.

Throughout this portion of the Bringing in the Bystander program, facilitators are responsible for reminding participants to think of the most effective and also safest ways bystanders can intervene in cases of sexual violence.

Doing so is consistent, though a bit different in its application, with the TTM's description of counterconditioning, in which participants are directly taught new behaviors to replace maladaptive, existing ones and urged to continue to practice them. There is focus paid at this point to specific steps bystanders can take before, during, or after a sexual assault has taken place to substitute for previous passive (e.g., did nothing) or negative (e.g., blame victim) responses. This is done through the use of role-playing scenarios, completed while working in small groups and later processed with the help of facilitators (Katz, 1994). It is also facilitated through follow-up discussions in a booster session and community-wide social marketing campaigns (e.g., Potter, Moynihan, Stapleton, & Banyard, in press).

Although the primary goal of the Bringing in the Bystander program is to promote prosocial bystander behavior, the program strongly emphasizes that participants do so safely without putting themselves at risk for harm. The education around this issue also falls under counterconditioning. Participants are taught a two-factor model of intervention that stresses safety.

Once counterconditioning is complete, it assumes that individuals are aware that a problem exists, have a desire to address this problem, and have some tangible strategies for doing so. The next goal becomes increasing the likelihood that individuals will follow through with these strategies. Prochaska and DiClemente (1983, 1984, 1986) referred to this as reinforcement management. It is at this point in the Bringing in the Bystander program that participants are asked to complete a "plan of action." This is an exercise in which each individual writes out a realistic scenario related to sexual violence, in which he or she can potentially intervene in a prosocial way. They are then asked to share their intervention strategies with the group and encouraged to share them with others in their communities.

The TTM suggests that in later stages of change (preparation and decision making), individuals have engaged in a process of self-liberation. Here, participants fully understand that they can make healthy changes and are committed to doing so. In the final phase of the Bringing in the Bystander program, participants are asked to read and sign a bystander pledge, which captures their understanding of this issue and their promise to act as prosocial bystanders. They keep their copies of the pledge, with the goal of educating others on the topic of sexual violence prevention.

Two key components of the TTM have informed the Bringing in the Bystander program to such an extent that their presence can be seen in every aspect of the program. These are the importance of helping relationships and social liberation. Prochaska and DiClemente (1983, 1984, 1986) emphasized the importance of helping relationships, stressing that working

with an empathic, supportive group helps facilitate change. The Bringing in the Bystander program has been designed to be taught in groups by facilitators that encourage openness, caring, and trust. In addition, Prochaska and DiClemente defined social liberation as increasing advocacy and empowerment in the hopes of producing community-wide change. This idea is the very essence of the Bringing in the Bystander program and a theme that runs consistently through both the theoretical underpinnings of the program as well as its explicit goals.

The Current Study

Our first aim in this article is to describe an example of how sexual violence prevention can be articulated through the TTM framework. A second aim is to illustrate how the readiness-for-change model may be measured and assessed as part of the evaluation of a sexual assault prevention program. Given that there is little research in this area, we begin by describing in a preliminary way the psychometric properties of a set of self-report questions designed to assess where an individual is in the stages of readiness for change. The referent behavior for change is being an engaged bystander to intervene along the continuum of sexual violence. We examined correlates of scores on readiness for change and how participation in prevention programming may affect self-reported readiness levels. We hypothesized that participants who indicated higher stages of change or greater readiness for change would also endorse fewer rape-supportive attitudes and greater willingness to be prosocial bystanders and perform greater numbers of actual bystander behaviors. Finally, we asked to what extent variations in expressed readiness for change among participants help explain variation in the effectiveness of the program. Finally, readiness for change was examined as an outcome variable. How did these scores change after participating in the Bringing in the Bystander program? Furthermore, did differences in what stage for change participants started in have an impact on how much change they showed in scores on willing to be a bystander, self-efficacy as a bystander, and actual bystander behaviors?

Method

Participants

To qualify as a participant, an individual had to be an undergraduate at the university between the ages of 18 and 23 years who had never trained as a

sexual violence advocate at the university or other similar program elsewhere. In addition, students who had participated in an earlier pilot project on the bystander measures were not eligible to participate in this phase of the research. We paid all participants for their time. Three hundred eighty-nine undergraduates (217 women and 172 men) filled out questionnaires. Their mean age was 19.3 years (SD = 1.20 years), about 90% identified as White, and they were distributed across years in college (38.2% freshmen, 29.4% sophomores, 19.8% juniors, and 12.4% seniors). Participants were part of a larger longitudinal evaluation of the effectiveness of a rape prevention program (for further details, see Banyard et al., 2007). All participants received the first questionnaire, which included items about demographics, personality, attitude, and bystander behavior measures, before either participating in the prevention programs or being part of the control group. These pretest data served as the source for most of the analyses described here. All participants were also followed over time. Longitudinal data from the control group were analyzed separately from data from participants who received the program (see Banyard et al., 2007, for analysis of these groups together to examine overall program effectiveness in relation to a range of attitudinal and behavioral outcomes). Small amounts of missing data were addressed by calculating scores on scales using the mean of items responded to.

Measures

Readiness for Change

Participants completed a questionnaire developed for this research and based on the TTM described above. We developed a "stage-of-change scale" in relation to bystander behaviors and sexual violence (see Table 2 for a list of items). This scale enabled us to evaluate whether the program worked differently for people at different stages of readiness to change their behavior in relation to preventing sexual assault. The scale consisted of nine items. Participants responded on a 5-point scale ranging from *not at all true* to *very much true* for to what degree each of the statements was true of them. Three subscales composed this overall scale. The precontemplation subscale consisted of three items ("I don't think sexual assault is a big problem on campus," "I don't think there is much I can do about sexual assault on campus," and "There isn't much need for me to think about sexual assault on campus, that's the job of the crisis center").

The contemplation subscale consisted of the following three items: "Sometimes I think I should learn more about sexual assault but I haven't done so yet," "I think I can do something about sexual assault and am planning

Table 2
Item Descriptions for Readiness-to-Change Scale

Item Number	Item Description
1	I don't think sexual assault is a big problem on campus.
2	I don't think there is much I can do about sexual assault on campus.
3	There isn't much need for me to think about sexual assault on campus, that's the job of the crisis center.
4	Sometimes I think I should learn more about sexual assault but I haven't done so yet.
5	I think I can do something about sexual assault and am planning to find out what I can do about the problem.
6	I am planning to learn more about the problem of sexual assault on campus.
7	I have recently attended a program about sexual assault.
8	I am actively involved in projects to deal with sexual assault on campus.
9	I have recently taken part in activities or volunteered my time on projects focused on ending sexual assault on campus.

to find out what I can do about the problem," and "I am planning to learn more about the problem of sexual assault on campus."

The action subscale consisted of three items: "I have recently attended a program about sexual assault," "I am actively involved in projects to deal with sexual assault on campus," and "I have recently taken part in activities or volunteered my time on projects focused on ending sexual assault on campus." Psychometric properties of these measures are the focus of the first sets of analyses presented in the results section.

Knowledge of and Attitudes About Sexual Violence

Knowledge assessment. To assess knowledge, we developed 10 items for use with this project, including multiple-choice and short-answer items (Banyard, 2008). Four of the items had multiple parts; for example, "According to the campus Student Code of Conduct, sexual misconduct includes any sexual activity as defined by _____ (circle all that are correct)," followed by a list of 13 statements. Participants obtained a score for each of the 13 statements depending on whether they correctly identified it as part of the student code of conduct or not part of the code. This resulted in 43 possible question items. Participants scored either 0 for an incorrect response or 1 for a correct response. Higher scores indicate greater numbers of correct responses. Cronbach's α coefficient was .84 (M = 17.04, SD = 6.12, range = 0 to 31).

Attitudes were assessed with several measures that have been shown in the research literature to have adequate reliability and validity and that have been used in evaluations of rape prevention programs.

Illinois Rape Myth Acceptance Scale–Short Form. This 20-item scale (Payne, Lonsway, & Fitzgerald, 1999) was developed to assess participants' endorsement of a variety of common myths about sexual assault (3 items are filler items and not used in calculating scores). Participants indicated on a 7-point, Likert-type scale the extent to which they agreed with each item (e.g., "Women tend to exaggerate how much rape affects them"). Higher scores indicate greater acceptance or endorsement of rape myths. Cronbach's α coefficient was .83 (M = 32.90, SD = 11.36, range = 17 to 95).

College Date Rape Attitude Survey. This measure (Lanier & Elliott, 1997) consists of 20 items assessing attitudes related to date rape. It was used in a modified form by Schultz, Scherman, and Marshall (2000) to assess behavioral change among students participating in a rape prevention program. Students indicated their agreement with each of the 20 statements using a 5-point scale. Cronbach's α coefficient for the full sample at pretest was .92 (M = 76.59, SD = 15.33, range = 26 to 98).

Bystander Attitudes and Behavior

For additional details on the psychometrics of these measures, see Banyard (2008).

Willingness to help. A list of 51 potential bystander helping behaviors was generated for this project (Banyard, 2008). They came from examples in the literature, from discussions with advocates and professionals working in the field of sexual violence, and from both a pilot study and a formative evaluation with a sample of college students. Participants were asked to respond on a 5-point scale how willing or likely they would be to engage in each bystander behavior. Scores were created by summing responses across the items. Cronbach's α coefficient for the full sample at pretest was .94 (M = 198.17, SD = 27.77, range = 73 to 255).

Bystander behaviors. Using the same list of behaviors as in the attitude scale above (Banyard, 2008), a second scale was created. Participants were asked to answer yes or no to indicate behaviors they had actually done in the past 2 months. Again, scores were obtained by summing the number of

behaviors they reported having done. Cronbach's α for the full sample at pretest was .89 (M = 10.02, SD = 6.48, range = 0 to 45).

Bystander efficacy. This scale was also developed for this project (Banyard, 2008). It was modeled on recent work by LaPlant (2002) in her development of scales measuring academic and eating self-efficacy and grounded in measures used in the broader self-efficacy literature. Participants were asked to indicate their confidence, on a scale ranging from 0 (*can't do*) to 100 (*very certain can do*), in performing each of 14 bystander behaviors. Scores are created by subtracting the mean of these 14 items from 100 to create a scale of perceived ineffectiveness. Cronbach's α coefficient for the full sample at pretest was .87 (M = 20.55, SD = 14.19, range = 0 to 92.86).

Decisional balance. In addition, the bystander literature often discusses decisions that individuals must make, weighing the pros and cons before deciding to intervene. On the basis of Prochaska and DiClemente's (1983, 1984, 1986) TTM decisional-balance scale, discussed above, we developed a decisional-balance scale in relation to bystander behaviors (Banyard, 2008). This 10-item scale reflected both positive benefits and negative consequences for intervening "in a situation where you thought someone might be being hurt or was at risk of being hurt." Responses were given on a 5-point scale ranging from *not at all important* to *extremely important* in deciding whether to intervene. Three scores were calculated. The first was a subscale score for positive or pro attitudes. This subscale consisted of items such as "If I intervene regularly I can prevent someone from being hurt." Cronbach's α coefficient for the full sample at pretest was .72 (M = 17.96, SD = 3.67, range = 6 to 25). One participant had missing data on this scale. The second score was the cons subscale, consisting of 6 items about negative consequences of bystander intervention. Cronbach's α coefficient for the full sample at pretest was .76 (M = 16.92, SD = 4.61, range = 6 to 30). Two participants had missing data on this scale. Finally, a total decisional balance score was obtained by subtracting the cons score from the pros score. Cronbach's α coefficient for the full sample at pretest was .69 (M = 1.04, SD = 5.79, range = –20 to 19).

Individual-Level Correlates

Sense of community. Participants also completed a measure to assess the extent to which program messages specific to sexual assault may generalize to more general community-building and helping behaviors. Participants

completed a modified version of Unger and Wandersman's (1982) sense-of-community scale, which has been used in prior studies with college students (Banyard & LaPlant, 2002). This is a brief three-item measure consisting of the following items: "Do you feel a sense of community with other people on campus?" "How important is it to you to feel a sense of community with people on this campus?" and "Some people care a lot about the kind of campus they live on. For others, the campus is not important. How important is what the campus is like to you?" Responses are given on a 5-point scale and summed to create a total sense of community score. Cronbach's α coefficient for the full sample at pretest was .71 (M = 12.18, SD = 2.10, range = 4 to 15).

Demographics. Participants were asked a number of demographic questions, including gender, age, year in school, and whether they were members of athletic teams or fraternities or sororities. They were asked if they ever knew anyone who was a victim of sexual violence and whether they had attended courses that discussed sexual violence. They were also asked how frequently they attended religious services.

Social desirability. This is a 33-item measure to assess a socially desirable response bias among participants (Crowne & Marlowe, 1960). This was useful in assessing the degree to which participants responded to the research instruments in socially desirable ways, and the administration of this scale permitted statistical control of this variable. Participants indicated whether each of the 33 statements was true or false in terms of their own behavior, and responses were summed for a total score. Cronbach's α coefficient for the full sample at pretest was .75 (M = 17.98, SD = 4.96, range = 4 to 31).

Perceived control. Individual differences in perceptions of control and efficacy as part of a sense of empowerment have been measured in part using this scale (Zimmerman & Rappaport, 1988). Participants completed two subscales of Paulhaus's (1983) Sphere Specific Measure of Perceived Control, a 30-item measure of perceptions control in a number of arenas. The subscales of interpersonal control (e.g., "Even when I'm feeling self-confident about most things, I still seem to lack the ability to control social situations") and sociopolitical control (e.g., "By taking an active part in political and social affairs we, the people, can control world events at the larger social level") were used in the current study. Each is a 10-item scale on which participants indicate using a 7-point scale their agreement with statements about

perceptions of control that are summed to create total scores on each scale. For the interpersonal-control scale, Cronbach's α coefficient for the full sample at pretest was .77 (M = 48.19, SD = 8.38, range = 23 to 70). For the sociopolitical scale, Cronbach's α coefficient for the full sample at pretest was .75 (M = 40.79, SD = 8.75, range = 11 to 67).

Data Analysis

Data analysis proceeded using a number of steps. The first step was to examine the psychometrics of the readiness-for-change scale itself. This was accomplished by first conducting a factor analysis of the scale, followed by calculation of Cronbach's α coefficients for each subscale to examine internal consistency. Correlations between readiness-for-change variables collected at the pretest and those collected for the control group at posttest approximately 2 weeks later were used to establish test-retest reliability. Next, to examine issues of validity, correlations were calculated between the readiness-for-change measure and demographic variables and several measures of personality and outcomes collected during the study. Finally, to examine the role of readiness for change in prevention evaluation, repeated-measures analysis of variance was used to examine how readiness-for-change scores changed as a function of exposure to the prevention program or not (compared across control and two treatment groups).

Results

Factor Structure

Principal components factor analysis with varimax rotation was performed on the nine readiness-for-change items. A three-factor solution was produced, accounting for 64.55% of the variance. The first factor, consisting of Items 2 to 6, accounted for 33.66% of the variance; the second, consisting of Items 7 to 9, accounted for 19.68% of the variance; and the third factor, consisting only of Item 1, accounted for 11.21% of the variance. Initial eigenvalues, however, also indicated that a fourth factor would account for an additional 9.5% of the variance. The rotated component matrix is presented in Table 3. Although items were written to match each stage of change, the factor analysis pointed to some modifications that needed to be made to subscale structures and that are reflected in further analyses.

Table 3
Rotated Factor Loadings

Item	Factor 1	Factor 2	Factor 3
1	–.13	–.06	.92
2	–.64	–.15	.06
3	–.63	.03	.37
4	.66	–.20	–.05
5	.85	.17	.01
6	.81	.24	–.02
7	–.01	.68	–.37
8	.13	.83	.09
9	.09	.84	.01

Reliability

Cronbach's α coefficients were computed for each subscale. Item 1 was treated on its own (see Table 2). Items 2 and 3 were calculated by summing scores on these two precontemplation items and for reasons of face validity; these items were grouped separated from Items 4 to 6, which were scored as contemplation. Finally, Items 7 to 9 were summed to create an action subscale. Cronbach's α coefficients for the latter three scales were .63, .77, and .69 respectively. Intercorrelations between subscales ranged from a low of .16 (between Item 1 and the action scale) to a high of –.49 (between the precontemplation and contemplation scales). All others were .20 or less. Next, Pearson correlations were computed between pretest and posttest scores on the four scales for the study group that did not receive the intervention. All were significant ($r = .38$ for denial, $r = .72$ for precontemplation, $r = .76$ for contemplation, and $r = .60$ for action; all significant at $p < .001$).

Validity

Next, using pretest data, Pearson correlations were computed between the readiness-for-change subscales and a variety of demographic correlates as well as correlations between readiness for change and key outcomes, including rape-myth acceptance, knowledge about sexual violence, and so on. Table 4 presents these findings. Women were more likely to endorse higher stages of change than men. Greater belief in one's ability to influence interpersonal relationships and larger community processes were related to lower precontemplation scores and higher scores on contemplation. Of

Table 4
Correlations Between Readiness for Change and Demographic and Outcome Correlates

Correlate	Denial	Precontemplation	Contemplation	Action
Gender	–.14**	–.18***	.28***	*ns*
Know victim	–.19***	*ns*	*ns*	*ns*
Age	–.16**	*ns*	*ns*	*ns*
Social desirability	*ns*	.18***	–.15**	*ns*
Interpersonal control	*ns*	–.19***	.13**	*ns*
Sociopolitical control	–.10*	–.27***	.31***	*ns*
Knowledge	*ns*	–.19***	.20***	*ns*
Illinois Rape Myth Acceptance Scale–Short Form	.28***	.42***	–.20***	*ns*
Willing to help	–.22***	–.41***	.46***	.14**
Actual help behavior	–.15**	–.17***	.27***	.21***
Bystander efficacy	.16**	.33***	–.27***	–.11*
Sense of community	*ns*	0.15**	.11*	*ns*
Decisional balance	–.17***	–.35***	.19***	*ns*

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

particular interest is that consistent with the TTM of change, lower rape-myth acceptance, higher levels of knowledge, greater willingness to help, greater prosocial bystander behavior related to sexual violence risk, greater sense of community, and more positive bystander attitudes were all associated with lower scores or more disagreement on Item 1 of the scale (“I don’t think sexual violence is a big problem on campus”) and the precontemplation scale, and most were also associated with higher scores on the contemplation and action subscales.

Utility

Finally, most germane to the current article is the extent to which the framework and measures of readiness for change are useful in sexual violence prevention. This was examined in two ways. First, to examine whether participation in the prevention program affected self-reported readiness for change, a repeated-measures analysis of variance was computed, controlling for scores on self-reported social desirability. The readiness-for-change subscales and Item 1 were the outcome measures, with time from pre- to posttest and whether a participant was in the control group or one of two experimental

groups as independent variables. Overall, there was a significant main effect of social desirability, $F(4, 350) = 3.51$, $p = .04$, Wilks's lambda = .96, and a significant time-by-group interaction, $F(8, 700) = 18.45$, $p < .001$, Wilks's lambda = .68 (suggesting that 32% of the variance was explained by time-by-group interactions after controlling for social desirability). The effect size (η^2) for this time-by-group interaction was .17, a large effect. Univariate tests revealed significant time-by-group interactions for all four readiness-to-change measures. Follow-up paired-sample t tests were computed for the control group and combined experimental groups separately. There were no significant pre- to posttest score differences for the control group. There were significant differences for all four readiness-for-change measures for the combined experimental groups: for denial, $t(249) = 5.45$, $p < .001$; for precontemplation, $t(250) = 11.37$, $p < .001$; for contemplation, $t(250) = –6.66$, $p < .001$; and for action, $t(250) = –15.95$, $p < .001$. Scores on Item 1 and the precontemplation scales decreased over time, while scores on contemplation and action increased.

Next, we examined whether variability in readiness for change prior to receiving the program was related to the magnitude of changes in measures of bystander attitude and behavior outcomes as a result of participating in the prevention program. Difference scores from pre- to posttest on the main outcome measures were computed and correlated with scores for the experimental group on readiness for change at pretest. This served as an exploratory analysis of whether where a participant started in terms of readiness for change at pretest affected the efficacy of the program he or she received (see Table 5). Lower scores on precontemplation were related to greater changes in rape-myth acceptance and bystander efficacy. Lower contemplation scores were related to greater changes in willingness to help in situations of sexual violence risk. There were no significant relationships, however, between self-reported levels of readiness for change at pretest and changes in actual bystander behaviors performed (assessed at 2 months rather than posttest).

These preliminary analyses suggested that precontemplation scores were particularly important in terms of examining prevention program efficacy, as those who evidenced more consistency with being in the precontemplation stage at pretest showed smaller program effects. This fits with previous work that found individuals in the precontemplation stage the most resistant to change (e.g., Scott & Wolfe, 2003; Velicer et al., 1995). Thus, the final exploratory analyses divided participants into groups labeled high or low on precontemplation on the basis of a median split of this variable. Those above or equal to the median on these items were the precontemplation

Table 5
Correlations Between Pretest Readiness-for-Change Scores and Difference Scores Between Pre- and Posttest on Outcomes for Groups Receiving Prevention Program ($n = 253$ to 274)

Pretest Scale	Knowledge	Rape-Myth Acceptance	Efficacy	Willing to Help	Decisional Balance	Behavior
Denial	.10	–.19**	–.05	.02	–.07	–.12
Precontemplation	.03	–.24***	–.16*	.12	.01	.01
Contemplation	–.04	.02	.04	–.14*	.18**	.07
Action	–.06	.11	.05	.02	–.07	–.08

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

group, and those lower than the median of 5 on this scale were the low group and thus not best described as in the precontemplation stage.

A repeated-measures analysis of covariance using only the individuals who received the prevention program while controlling for social desirability found that there was a significant precontemplation group-by-time interaction, such that the program seemed to work differently for those who were high versus low on this scale, $F(4, 246) = 3.20$, $p = .01$, Wilks's lambda = .95. There were also significant main effects for both social desirability and for the precontemplation dichotomy. Follow-up univariate analyses revealed significance mainly for the *Illinois Rape Myth Acceptance Scale–Short Form*. Paired-sample *t* tests that followed up on this found significant pre- to posttest differences for both the high and low precontemplation groups but a more significant impact of programming on the high precontemplation group for rape myths (see Table 6). Overall, what this seems to indicate is that categorizing individuals on the basis of their agreement with precontemplation items provides useful information about to what extent the program will be effective for them or what outcomes will be most significantly affected by their participation.

Discussion

The current study provides a case example of how the TTM may be applied to the primary prevention of sexual violence. Key components of the model, including an understanding of stages of readiness for change, decisional balance, and self-efficacy, were integrated into various parts of the program design. Furthermore, tools to promote change processes at various

Table 6
Paired-Sample *t* Tests for High- and Low-Precontemplation Groups on Outcomes

	Low Precontemplation			High Precontemplation		
Outcome	Pretest	Posttest	*t*	Pretest	Posttest	*t*
Knowledge	18.14	22.97	$t(99) = -7.77$	16.74	21.79	$t(152) = -10.80$
Illinois Rape Myth Acceptance Scale–Short Form	27.94	24.18	$t(99) = 5.34$	36.67	29.00	$t(152) = 10.29$
Willingness to help	206.54	225.09	$t(99) = -10.01$	192.39	213.13	$t(152) = -11.26$
Bystander efficacy	16.55	9.54	$t(99) = 7.62$	23.26	13.49	$t(152) = 8.79$
Decisional balance	2.87	6.04	$t(99) = -5.84$	–0.08	2.43	$t(152) = -5.66$
Actual behavior	11.49	14.61	$t(74) = -5.63$	9.46	13.09	$t(114) = -4.86$

Note: All *t* tests were significant at $p < .001$.

stages of readiness for change were also part of the educational methods incorporated into the program. The case study illustrates ways in which the TTM may be used in the design of sexual assault prevention curricula.

Next, we sought to describe and evaluate a set of tools for evaluating readiness for change in this context and, using such tools, to assess the impact of one primary prevention program on participants' readiness for change. Preliminary results indicate that the measure created to examine readiness for change demonstrated some core facets of both reliability and validity. As constructs, the subscales showed good internal consistency and some stability over time. Importantly, they provided useful information in the evaluation of the prevention program. In particular, participants who went through the prevention program showed movement in their readiness for change, with decreases in items reflecting lower stages of change such as precontemplation or denial, and increases in scores on items more reflective of contemplation or action stages. What is more, these stage-of-change scores were related in significant ways to various outcome measures, with participants who had higher scores on later stages of change and lower scores on earlier stages more likely to report that they had engaged in prosocial behavior to end sexual violence, less likely to believe rape myths, more likely to feel effective as prosocial bystanders, and more likely to see positive reasons to intervene as a bystander.

Furthermore, there were some interesting patterns of relationships between stages of change and various demographic variables. Women were more likely to endorse items reflecting higher stages of change than men.

This is consistent with other research on sexual assault that has found women less likely to endorse rape myths and more knowledgeable about sexual assault (e.g., Banyard et al., 2007). Individuals who had higher contemplation scores were more likely to also indicate that they felt more control in both interpersonal situations as well as sociopolitically. Again, this makes sense, given that items on the control scales reflect perceptions of one's ability to effect change more broadly in one's community or society. Interestingly, the action subscale did not show many patterns of significance. This may have to do with the way this scale was constructed and the particular sample used in this study. In particular, a key item in the action subscale stated that "I am involved in projects to end sexual violence." In this study, two thirds of the participants were involved in a prevention program concerning sexual violence. Many may have seen that as an action they were taking to end sexual violence and thus may have scored high on this scale, even though they would not truly be in the action phase because they were not actively seeking these activities on their own. More research on this issue is needed.

The current study also had a number of limitations. In particular, the sample was rather restricted by age and ethnic diversity, given the location where the study was conducted. Future research should seek to replicate and extend these findings in a variety of communities. In addition, expansion of the scale to include additional items may facilitate the use of these measures in understanding variability among individuals and their readiness to engage in change efforts to end sexual violence: whether those changes are at the individual or broader community level. Furthermore, consistent with much prior research on sexual violence prevention, the outcome measures used in this study were predominantly attitudinal. Although research does show links between rape-supportive attitudes and myths and rape proclivity (e.g., Chiroro et al., 2004; O'Donohue et al., 2003), future research using more behavioral outcomes is clearly needed.

As a first specific application of the TTM to the primary prevention of sexual violence, however, the current study illustrates the utility of this model for designing program specifics and potentially for program evaluation. Although the next step is more research using a bigger sample to confirm the psychometric properties of the measures, the results of this exploratory study suggest that future prevention efforts might benefit from tailoring aspects of prevention programs to where people are in the model of readiness for change. For example, those in the precontemplation stage may need to spend more time focusing on the problem of sexual violence and debunking rape myths, while those in the stage of action can focus on next steps: practicing skills as bystanders and developing ways to pass these skills along in their peer groups

and communities. The program used as an example here has components that address the needs of participants at every stage of development. It would not be difficult, therefore, to divide participants into groups on the basis of stage of development and implement the aspects of the program that best fit their needs. In essence, it may provide the opportunity to meet program participants at the ideal entry point of their understanding and ability. Furthermore, the relationship between readiness for change and gender should be further explored. Because women tend to enter the program at a higher stage of change than men, it may be beneficial to explore if there are certain aspects of the program that are better suited for one gender as opposed to the other, while maintaining the overarching bystander theme. The findings of the present study undoubtedly provide further opportunity to explore how community-based programs foster individual change and how understanding the needs of participants can assist in tailoring the specific ways in which such programs are taught.

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