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How do we know if it works? Measuring outcomes in bystander-focused abuse prevention on campuses

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Abstract

Objective: To address acknowledged limitations in the effectiveness of sexual and relationship abuse prevention strategies, practitioners have developed new tools that use a bystander framework (Lonsway et al, 2009). Evaluation of bystander-focused prevention requires measures, specific to the bystander approach, that assess changes over time in participants' attitudes and behaviors. Few measures exist and more psychometric analyses are needed. We present analyses to begin to establish the psychometric properties of four new measures of bystander outcomes and their subscales. *Method:* We collected data from 948 first year college students on two campuses in the northeast United States. Items assessing attitudes and behaviors related to bystander helping responses in college campus communities for situations where there is sexual or relationship abuse risk were factor analyzed. *Results:* Measures of readiness to help (assessed specifically with scales representing taking action, awareness, and taking responsibility), intent to be an active bystander, self-reported bystander responses, and perceptions of peer norms in support of action all showed adequate reliability and validity. *Conclusion:* The study represents a next step in the development of tools that can be used by researchers and practitioners seeking both to understand bystander behavior in the context of sexual and relationship abuse and evaluating the effectiveness of prevention tools to address these problems. The measures investigated will be helpful for prevention educators and researchers evaluating the effectiveness of sexual and relationship abuse education tools that use a bystander intervention framework.

Key words: measurement, bystander behavior, bystander attitudes, sexual and relationship abuse

Bystanders are those who are present in situations of escalating risk for sexual or relationship abuse or who are in a position to support survivors after an incident has occurred. To address acknowledged limitations in the effectiveness of sexual and relationship abuse prevention strategies, tools that aim to build bystander capacity and motivation to intervene are proliferating along with studies to evaluate their effectiveness (e.g., Banyard, Moynihan & Plante, 2007. Assessing the effectiveness of bystander prevention efforts is an important next step for the field to establish to what extent a bystander framework actually addresses the limitations of previous prevention efforts. There is currently a paucity of developed and tested measures in the field for such evaluation research. In the current study, we present preliminary psychometric analyses of four new measures designed to address the current shortfalls found in the field. Measures were developed based on key variables for promoting bystander action.

Latané and Darley (1969) outline four steps that lead an individual to decide whether or not to help and that can serve as components of a bystander evaluation toolkit. The first step to helping is noticing the event and labeling it as a problem. This has most often been studied with laboratory research methods where a situation is staged and participants are observed to examine whether they pay attention to it (e.g. Latané and Darley, 1969). It is less clear how to study this outside of a lab unless some sort of naturalistic observation of individuals is designed – a challenging strategy for trying to examine risk for sexual or relationship abuse. Burn (2009)'s self-report item asked survey respondents to reflect on their ability to notice while other research used knowledge of sexual violence as a proxy for noticing (Banyard, 2008). Self-reports of rape myth acceptance have been used to assess a dimension of noticing and labeling the problem (McMahon, 2010). Banyard, Eckstein, and Moynihan (2010) created and investigated a measure of readiness for change related to becoming a more engaged bystander to prevent sexual abuse

and to more directly assess how much individuals think that sexual and relationship abuse happen in their community. Their measure was based on work by Prochaska and DiClemente (1984) and was designed to capture awareness of the problem of sexual abuse. For example, Banyard et al.'s measure of precontemplation, the first stage of change, included items that captured attitudes of denial of the problem of sexual abuse.

A person must feel a sense of personal responsibility for doing something about the situation if they are going to take action. Latané and Darley (1969) describe how this sense of duty is heavily influenced by victim empathy and by norms about helping and responsibility. In traditional social psychology and sociology experiments, feelings of responsibility are often manipulated through the presence or absence of other bystanders. Given that it is difficult to simulate risk for sexual or relationship abuse in the lab, researchers have developed self-report assessments. Burn (2009) created a multi-item measure of barriers to intervention that captures what she termed "failure to take intervention responsibility" (p.789). Banyard et al.'s (2010) measure of readiness for change also included a subscale to capture the contemplation stage with items that reflect a participants' agreement with statements indicating that doing something about sexual violence was their responsibility. Chekroun and Brauer (2002) examined "to what extent they personally suffered the consequences of [norm violating] behavior" (p.857). When the situation was characterized by high personal impact, individuals intervened whether or not other bystanders were present, perhaps due to a greater felt investment in the outcome of the situation.

Finally, if the individual decides that he/she possesses the skills to help, the person must form an intention to help and then decide specifically what action to take. Again, this step involves a variety of attitudes related to reviewing personal capacity for helping including confidence as a helpful responder, barriers to intervention, including threats to personal safety,

and willingness or intent to help. Self-report measures of bystander confidence, perceived barriers to intervention and intent to help appear in the literature (Banyard, 2008; Burn, 2009) but few studies have directly examined the psychometric properties of assessing these constructs.

Taking bystander action has been the most researched aspect of the situational model. One assessment method has been laboratory and community-based simulations (e.g., Chekroun & Brauer, 2002). Chabot, Tracy, Manning, and Poisson (2009) used hypothetical vignettes but were thus assessing attitudes, not actual behaviors. Self-reports of helpful bystander intervention also appear in the literature but are understudied (Banyard, 2008).

Current Study

The aim of the current study was to advance the assessment of prevention programs' impacts on participant attitudes and behaviors. We performed more in-depth psychometric analyses on several newly-developed measures of bystander attitudes and behaviors created the measures to fill the niches noted above, where few scales specific to a given step in the situational model exist. The scales focused on bystander intervention related to the continuum of sexual and relationship abuse on a college campus. We began with the following hypotheses:

1. Items reflecting each component of a) bystander attitudes (awareness, responsibility, efficacy, peer norms about helping), and b) bystander helping behaviors would separate out into valid and interpretable subscales using exploratory factor analyses.
2. Scales would demonstrate adequate reliability and construct validity. Nunnally and Bernstein (1994) state that for basic research, reliabilities of about .70 may be sufficient. We hypothesized that the intercorrelations between measures would be significant, with measures reflecting each step of the situational model related to each other and to bystander behaviors as a first step in establishing criterion-oriented validity.

Method

Participants

Participants were 948 first year college students who were involved in a longitudinal study of the effectiveness of a sexual and relationship abuse prevention program on two campuses in northeastern United States. The sample was approximately evenly distributed between men and women (51.5% male N = 489, 47.8% female N = 454, with three participants identifying as transgender). At pretest, 85.2% of the sample was White (of these, 15 participants indicated Hispanic on a separate question); 3% were African American, 5% were Asian, and 3% indicated more than one race. These numbers are consistent with the demographics of the campuses. In addition, 73.2% of the sample reported father's education of at least some college, and 76% reported mother's education as at least some college. (Moreover, 20% of the sample reported having fathers and 17.3% reported having mothers who had graduate or professional degrees.) Most participants were living on campus (89.6%). Because we recruited first year students specifically, the mean age was 18.17 years (*SD* = 0.49).

Procedure

Participants were recruited during the first semester of their first year in college. Recruitment was conducted via flyers, recruitment tables at dining halls, announcements in general education classes and weekly meetings with Resident Advisors (RAs), and email announcements. Recruitment materials contained information advertising a study of community and relationship problems. Interested participants were randomly assigned to either the control group (N=482) (took a series of surveys over the course of a year) or program group (N=466) (received a prevention education program after taking the first survey). Data were collected over three years from 2008 to 2011 from three cohorts of first year students at Campus 1 and two

cohorts of students at Campus 2.

Of this sample, 305 participants who were in the control group returned two to three weeks after the pretest to take the posttest (this is a 63% retention rate given that the 466 program participants could not be included in test-retest analyses since they had experienced an intervention in the intervening time period). It is this subsample that was used to compute test-retest correlations in the current analyses. There were no significant differences between the full pretest and posttest samples on demographics (chi-square and independent-samples t-tests) except that the posttest sample contained a greater percentage of women ($p = .001$).

A number of years before using the items in the current study, professionals in the violence prevention field and college students were involved in the early stages of measurement asking them to generate and review items. Qualitative research helped generate lists of relevant bystander behaviors and attitudes (See Banyard, 2008 for more information about preliminary scale development). The current study was an opportunity to perform further analyses on the scales since their revisions using a large sample size across two campuses.

Measures

Measures of readiness for change (as a measure of taking action to address the problem, identification of the problem (hereafter referred to as "awareness") and, as a separate subscale, a measure of taking bystander responsibility), perception of peer helping, behavioral intent, and bystander behavior are presented below in the results section where they are described in detail. They are discussed in the order of the situational model. They are summarized briefly here.

A revised, 36 item version of Banyard et al.'s (2010) assessment of readiness for change, renamed *readiness to help* for the current study,[1] was designed to capture four of the stages of

[1] This scale was renamed *readiness to help* for the current study.

change outlined by Prochaska and DiClemente (1984) that pertain to level of awareness of the problem and responsibility for change. Participants responded to a series of 12 parallel items separately in relation to sexual abuse, relationship abuse, and stalking. A shorter version of this measure focused solely on sexual abuse showed good reliability (Banyard et al, 2010). It should be noted that in the current study, one cohort received a somewhat shorter version of this measure that did not include stalking items but given high item intercorrelations, missing data was addressed by using mean score calculations on total scores, though factor analyses of these scales are thus computed on a slightly smaller subsample than for other scales in this study. Perception of peer helping was a new series of 20 items asking participants to indicate how likely their friends were to perform a series of helping behaviors. This new measure was created because past measures focused more on peer norms supporting coercion in relationships rather than peer support for being a helpful bystander. Intent to help friends and strangers was assessed with 79 items based a shorter 51-item scale by Banyard (2008) that showed good reliability and construct validity (Cronbach's alpha of .94). Finally, bystander behavior was assessed using a set of 98 bystander behaviors (49 related to helping friends and 49 related to helping strangers) that one might do in situations of risk for sexual or relationship abuse. An earlier, shorter version of this scale (that did not include parallel items for helping friends and strangers) showed good reliability and construct validity (Cronbach's alpha was .89 for the full scale in previous research (Banyard, 2009)). In addition to these measures, three measures that were established in the literature and were theoretically indicated to be related to the measures studied here were used to examine criterion-oriented validity.

Illinois Rape Myth Acceptance Scale – Short form (Payne, Lonsway, & Fitzgerald, 1999). The original 20-item scale (which includes three filler items) was developed to assess

participants' endorsement of a variety of common myths about sexual assault. Seventeen of the original 20 items appeared on the scale used in the current study (the filler items were excluded). An example item is, "If a woman is raped while she is drunk, she is at least somewhat responsible for letting things get out of control." Participants indicated on a 5-point scale (from *not at all agree* to *very much agree*) the extent to which they agreed with each item and the mean across items was the score for the scale. Higher scores indicate greater rape myth endorsement. For the current sample the mean was 1.64, *SD* = .54, range = 1- 4.59, and Cronbach's alpha was .89.

Bystander Efficacy Scale (Banyard, 2008). This scale, used previously in studies to evaluate prevention efficacy, includes 18 statements that assess the participant's confidence that they could perform various bystander actions. A participant rates her or his confidence to perform the behaviors on a scale from 0 *can't do* to 100 *very certain* that he or she do. For example, "Ask a friend if they need to be walked home from a party" or "Criticize a friend who says they had sex with someone who was passed out." The mean across all 18 items becomes the total score used. The Cronbach's alpha on this scale for this sample was .93. Previous research established the construct validity of this measure (Banyard, 2008; Banyard & Moynihan, 2011). For the current sample, *M* = 72.60, *SD* = 17.64, and range = 0-100.

Social Desirability (Stöber, 2001). This scale consisted of 16 of the original 17 items; following Stöber, item #4: "I have tried illegal drugs (for example, marijuana, cocaine, etc.)" was excluded from this measure. Participants scored 1 for *true* or 0 for *false*; a number of items were reverse scored. An example of one of the items in the scale read, "In traffic I am always polite and considerate of others." The Cronbach's alpha for the current sample was .63 which is low. However, given that social desirability is only being used as a control variable, we retained this measure in the study. Scores were computed by taking the mean across items. Higher scores

indicate greater socially desirable responding. The mean for the current sample at pretest was .53, *SD* = .19, range = 0-1.

Data analysis

To investigate the first hypothesis, exploratory principal components factor analyses were computed using SPSS 20.0. Variables were examined and assumptions for factor analysis were met. Oblique rotation was used for all given the likelihood that factors would be related to one another. The full set of data from the pretest surveys was used. Following recommendations outlined by Zwick and Velicer (1986) and Warner (2012), the following steps were taken to make decisions about number of factors and specific items retained in each exploratory factor analysis. In addition to specifying retention of factors with eigenvalues greater than one in the analysis, the scree plot for each analysis was inspected to avoid overestimates of number of retained factors. In addition, when possible, theory was also used to inform specification of the number of factors. Retained factors had to have at least three items with large factor loadings. The criterion for "large" was a loading of .40 or above in absolute value; this is slightly higher than the .32 minimum criterion suggested by Tabachnick and Fidell (2001). Items had to be meaningful when taken together as a group. In other words, conceptual meaningfulness of factors was an important consideration when deciding on the number of factors to retain in each analysis. Items that did not load on theoretically meaningful factors or that were factorially complex (with loadings above an absolute value of .4 on more than one factor) were dropped.

Internal consistency was assessed for each retained factor by computing Cronbach's alpha coefficients as well as inspecting the change in alphas with any given item removed. Next, pretest and posttest data from the subset of participants who were not exposed to prevention programming were used to compute test-re-test reliabilities for each of the measures. Finally,

correlations among bystander attitude and behavior measures and measures of social desirability, rape myths, and efficacy were computed for the full sample using pretest data; these correlations were examined as a preliminary investigation of criterion-oriented validity (given the absence of other measures of bystander constructs, content and criterion-oriented validity were the focus of the current study). Listwise deletion of missing data was used in each analysis.

Results

Bystander Attitudes

Noticing, labeling the situation, and taking responsibility. Banyard et al.'s (2010) measure was expanded to include items related to sexual abuse, relationship abuse, and stalking and assessed attitudes related to awareness of the problem, sense of responsibility, and taking action. Banyard et al. refer to the scale as readiness for change, but as noted above, we renamed the scale *readiness to help* in the current study to more accurately reflect how the subscales are meant to capture the first steps of the situational model. A principal components factor analysis with Promax rotation was computed for the 36 items developed to assess attitudes toward engaging in prevention of sexual abuse, relationship abuse, and stalking. Participants responded on a 5-point scale ranging from *not at all true* to *very much true* to report the degree to which each statement was true of them.

Prochaska and DiClemente's (1984) model was used to inform item development for four stages of change (precontemplation, contemplation, preparation and action). The number of factors was not initially specified in the analysis. The initial solution contained 10 factors, though inspection of the scree plot indicated that a three factor solution was indicated. The analysis was re-run specifying a three factor solution that accounted for 50.8% of the variance (Table 1).

After rotation, the first factor explained 23.17% of the variance and included twelve

items that describe taking action against sexual abuse, relationship abuse and stalking. This first factor mirrored what Prochaska and DiClemente (1984) described as the preparation and action stages as the items described individuals actively preparing for or engaged in abuse prevention efforts. This subscale is called *action* as it assesses a participant's recent activities to prevent sexual abuse, relationship abuse, and stalking. The second factor (17.02% of the variance) included nine items that most closely mirrored the contemplation stage for change. As these items reflected a clear sense of a participant taking responsibility for the problem, it was labeled *taking responsibility* to correspond to Latané and Darley's (1969) model. The three items "I am planning to learn more about…." were designed to capture the preparation stage of the model. These items loaded more clearly on the factor with contemplation items and seemed to better represent the construct of *taking responsibility*. Factor 3 included 15 items (10.65% of variance) which described the precontemplation stage for change. These were items that indicated no awareness of the issues as problems and no sense that the individual needs to be concerned with these issues. This factor was labeled *no awareness* to be consistent with models of bystander helping (Latané and Darley). Total scores for each of the subscales based on the three factors were created by taking the mean across items for that subscale.

Cronbach's alphas were calculated for each of the three subscales. Factor 1, the *action* subscale had an excellent Cronbach's alpha of .93 (M = 1.31, SD = .72, range = 1-5) as did factor 2 *taking responsibility* (α = .91; M=2.78, SD = .83, range = 1-5). Factor 3, *no awareness*, had a good Cronbach's alpha of .85; when the three lowest loading items were removed, the alpha improved to .87. Furthermore the decision was made to drop these three items from the factor, given that conceptually, the three items "I have not yet done anything to learn more about stalking," "I have not yet done anything to learn more about sexual abuse," and "I have not yet

done anything to learn more about intimate partner abuse" did not seem closely related, and given that they were more behavioral items whereas the other 12 items were more attitudinal. For Factor 3 *M* = 2.54, *SD* = .69, range = 1-5. Re-running factor analysis with Promax rotation excluding these three items, the variance explained by each factor improved: Factor 1, *action* = 24.91%; factor 2 = *responsibility* = 18.40%; and factor 3 = *no awareness* = 11.05% of variance.

Perceptions of peer helping. A list of 20 items was generated to examine *perceptions of peer helping*, descriptive norms of how a participant viewed their friends as active bystanders. This list was generated by a group of researchers in the field to reflect a range of bystander behaviors related to sexual and relationship abuse that college students might encounter on campuses. In creating this list of items, the researchers drew heavily from previous research on bystander behaviors in this context (Banyard, 2008). Most items were very specific to sexual and relationship abuse. However, several questions about helping distressed friends were also included. These items seemed to be a key foundation to assessing peer attitudes toward helping those in distress since responding to that distress can be what precipitates awareness that sexual or relationship abuse was happening. Items were worded to examine perceptions of how likely a participant's friends were to engage in the particular helpful bystander behavior. Participants responded to overall instructions stating "Please use the following scale to rate how likely YOUR FRIENDS are to do each of the following behaviors." Each item was then presented using a 5-point rating scale from *not at all likely* to *extremely likely*. Table 2 displays the list of all 20 items. Principal components factor analysis using oblique Promax rotation on the 20 items yielded a three factor solution. Inspection of the scree plot indicated a one factor solution was a more parsimonious fit, and theory and past research did not indicate that we would expect subscales for this construct. The model was rerun specifying extraction of only one factor, the

variance explained by that factor was 51.34%. Cronbach's alpha was .95 for the 20 item scale. The total score was calculated as the mean across the 20 items (M = 3.38, SD = .81, range = 1-5).

Intent to help. Theories of bystander behavior suggest that relationship to the person in need of help may be an important factor in helping (Bennett, Banyard, & Garnhart, in press). Therefore, separate but parallel items were created for intent to help "people you know" and "people you don't know," and separate factor analyses were conducted on each set of items. Because types of helping were hypothesized to correlate with one another, Promax rotation was used. Initially, the eigenvalue > 1 default decision rule was the basis for the number of factors retained. This was followed by inspection of the scree plot.

Initial factor analyses. The first principal components factor analysis with Promax rotation of the 38 items on the intent to help friends scale produced a six factor solution accounting for 67.72% of the variance. However, subsequent inspection of the scree plot indicated that a one factor solution was the most parsimonious solution. The analysis was run specifying extraction of one factor. This factor accounted for 45.65% of the data. The component matrix indicated that all but one item had a value of .4 or greater. The one item, "talk with people I know about sexual abuse and intimate partner abuse abuse as issues for our community" had a value of .39 and so was retained.

Principal components factor analysis using Promax rotation for the 41[2] intent to help stranger items (people you don't know) also produced a six factor solution initially (with 72.11% of the variance explained). Inspection of the scree plot supported choosing a one factor solution. The

[2] It should be noted that parallel sets of 41 items had been created for helping friends and helping strangers but a data collection error programmed into the web survey resulted in only 38 usable items for the friend subscale for this dataset. Given the ultimately more important utility of the briefer measures that did not include these items, we consider use of this dataset for the current purposes is still warranted.

analysis was performed specifying extraction of one factor which accounted for 51.17% of the variance. For the full set of items, the Cronbach's alpha across 38 items for intent to help friends was .97 (*M* = 3.79, *SD* = .72, range = 1-5) and across the 41 items for intent to help strangers Cronbach's alpha was .98 (*M*=3.09, *SD* = .87, range = 1-5).

Creating an alternate short form. The intent to help are long measures, particularly if assessment of both intent to help friends and strangers is desired, so creation of a briefer measure was sought. Ten items were identified from the first factor of the initial factor analysis for both intent to help friends and intent to help strangers as a potential useful briefer version of the intent measures, a measure we call *brief intent to help*. Table 3 presents the 10 items with rotated loadings of .4 or above from the first factor for friends. For the 10-item short version for intent to help friends the Cronbach's alpha was .93 (*M* = 3.96, *SD* = .79).

The set of eight items that loaded with values of .4 or above for strangers had some overlap with items for helping friends but were also different, reflecting that how helping friends and strangers may differ. Table 3 also presents the items for helping strangers. One item, "I express concern to someone I don't know who has unexplained bruises that may be signs of abuse in their relationship," was a complex item that loaded above .4 on two factors. It was not included in the table or in description of the brief measure. Cronbach's alpha was .94 for the eight-item intent to help strangers scale (*M* = 2.58, *SD* = 1.02).

Bystander Behavior. Forty-nine items describing active bystander behavior across the continuum of sexual and relationship abuse were used based on past research (Banyard, 2008). Content validity was achieved by generating items in collaboration with research and practitioner experts in the field of violence prevention and sexual and relationship abuse as well as earlier pilot testing with student samples. For each behavior, participants were asked whether they had

engaged in that behavior in relation to helping friends and then separately, for helping strangers. It should be noted that all behavior questions were also asked a third time in relation to acquaintances, however, the correlation between total helping friends and total helping acquaintances scores was .81 suggesting that they were capturing the same behaviors, thus for parsimony, analysis of acquaintance behaviors was dropped.

Two principal components factor analyses using Promax oblique rotation were computed separately for items relating to behaviors regarding helping friends and helping strangers. Theoretical work by McMahon and Banyard (2012) and empirical work by Banyard and Moynihan (2011) suggested that meaningful subtypes of bystander behavior existed in four to five subscales. For exploratory purposes the number of factors retained was initially based on the SPSS default rule to retain factors with eigenvalues > 1.

Analysis of behaviors aimed at helping friends produced a five factor solution accounting for 72.56% of the variance. Inspection of the scree plot, however, indicated that one to three factors should be retained. Inspection of rotated factor loadings of items using a criteria of loadings of at least .4 identified four meaningful factors that were consistent with previous work cited above (one item was factorially complex, loading on two factors while three items did not load .4 or higher on any factors).

Items regarding strangers produced a seven factor solution (accounting for 65.33% of the variance). Inspection of the scree plot indicated that a one to three factor solution was best for this data. We examined rotated factor loadings of items in the pattern matrix and found items meeting criteria of an eigenvalue of at least .4 clustered on factors that were similar to those for helping friends and five of the factors were theoretically and conceptually meaningful (three items were factorially complex and two did not load at .4 or above on any factors though these

specific items were different from those identified in the analysis of helping friends).

Conceptually we considered it was important to retain parallel items for helping friends and helping strangers so that researchers could directly compare scores for these two types of helping. We retained a more parsimonious four factor model for both behaviors aimed at helping friends and behaviors aimed at helping strangers. The names of the scales were based on the best description of the category of behavior the items on the factor described and were informed by the typology of bystander opportunities described by McMahon and Banyard (2012).

A principal components factor analysis with Promax rotation was rerun for bystander behaviors focused on friends and strangers and a four factor solution was specified. All items were retained for this second set of analyses (we waited to delete factorially complex items until the factor analysis was re-run). In these analyses there were two problematic items among the friend scale (one item "I refused to remain silent when a friend asked me to keep quiet about an instance of sexual abuse or intimate partner abuse that I knew about" was factorially complex and loaded on the first and second factors, and "I indicated my displeasure when I heard sexist, racist, homophobic jokes or catcalls made by a friend" did not load at a value of .4 or above on any factor). There were also three problematic items on the stranger scale: "I watched a stranger's drinks at a party" did not load on any factor at a level above .4, and "I made sure a stranger left the party with the same people he/she came with" and "I spoke up if I heard 'she deserved to be raped" were factorially complex loading above .4 on two different factors. These five items were omitted and the four factor solution was rerun.

The analysis for bystander behavior to help friends explained 71.69% of the variance in total. The first factor dominated the analysis by explaining 55.36% of the variance. However, given that factors 2 (7.28%), 3 (4.85%), and 4 (4.21%) were conceptually meaningful and

mapped well onto theoretical models (McMahon & Banyard, 2012), they too were retained. Table 4 lists bystander behavior items for helping friends and helping strangers using the four factor models together with rotated factor loadings from the pattern matrix output in SPSS 20.0.

For the first factor of bystander behavior toward friends, 19 items had eigenvalues above the .4 criteria. These items were conceptually similar to what McMahon and Banyard (2012) identified as secondary intervention or *risky situations*. These items included behaviors to confront problem behaviors by potential perpetrators and interrupting situations where risk for sexual and relationship abuse seemed to be escalating.

Eight items had loadings of .4 or greater on Factor 2 and conceptually these resembled McMahon and Banyard's (2012) tertiary category or more specifically actions for accessing resources to help which was named *accessing resources*. This factor included items related to calling for professional helpers (e.g., calling 911 or contacting a crisis center).

Items with eigenvalues at or above .4 on Factor 3 (10 items) fit well with situations McMahon and Banyard (2012) described as proactive and we applied the label *proactive behaviors* to this factor. It included behaviors related to making a plan in advance of being in a risky situation, and talking with others about issues of sexual and relationship abuse.

Six items had eigenvalues above .4 on the fourth factor. These items, for example "I talked with friends about going to parties together and staying together" represented *party safety*. One item "I shared information or resources about sexual assault and/or intimate partner violence with friends" was complex, loading at .3 on the first two factors, and was omitted from Table 4.

The four factor solution for bystander behaviors to help strangers explained 59.06% of the variance. Again, the first factor was dominant (45.10%), though the other three factors (factor 2 5.90%, factor 3, 4.55%, and factor 4, 3.51%) were retained because they were conceptually

meaningful and because there was utility in creating parallel scales for behaviors to help friends and help strangers. Seventeen out of the 19 items that had loadings above .4 for *risky situations* for friends also had values above .4 for strangers. In addition, three items had values of above .4 on this factor for strangers but not for friends. Factor 2 *access resources* was identical for friends and strangers, with correspondence on eight items except that one additional item had a value of .4 for strangers. The items with values of .4 of above on Factor 3 *proactive behavior* and Factor 4 *party safety* were most discrepant between friends and strangers. Table 4 indicates items that did not load on the same factors for strangers. Conceptually and theoretically, the items fit better following the factor structure of bystander behaviors directed at friends and so this pattern of items was used for both. We include the Sum of Squared Loadings from the pattern matrix for each factor in Table 4. For the full 49 item scales, Cronbach's alpha was .98 for behavior to help friends (*M*=.43, *SD* = .35, range 0-1) and .97 for behavior to help strangers (*M*=.16, *SD* = .23, range=0-1). Scores on each subscale were computed by taking the mean across items in that subscale such that the range of scores for all were 0 -1. Cronbach's alphas were good to excellent for all four subscales. For behaviors aimed at helping friends: *risky situations* (factor 1) = .98, *M* = .43, *SD* = .42; *accessing resources* (factor 2) Cronbach's alpha= .98, *M* = .27, *SD* = .41; *proactive behavior* (factor 3) α = .92, *M* = .36, *SD* = .35; *party safety* (factor 4) α = .87, *M* = .65, *SD* = .37. For behaviors aimed at helping strangers the Cronbach's alphas were also adequate though somewhat less strong. *Risky situations* = .95, *M* = .17, *SD* = .27; Cronbach's alpha = .94 for *accessing resources*, *M* = .11, *SD* = .26; α =.87 for *proactive behavior*, *M* = .14, *SD* = .23; α =.79 for *party safety*, *M* = .18, *SD* = .27.

Intercorrelations between behavior subscales varied and ranged from *r* = .27 to *r* = .77. Highest correlations were for scales within behaviors items specific to helping friends or

behavior items specific to helping strangers. Correlations between scales assessing behavior toward friends and behavior toward strangers ranged from .27 to .64.

Test-retest reliability. Using the control group only (N=305), we computed test-retest correlations for the interval between the pretest and posttest. The test-retest correlation was r = .41, $p < .001$ for precontemplation, r = .49, $p < .001$ for contemplation, and r = .34, $p < .001$ for action. For the total intent to help friends r = .71, $p < .001$ and for intent to help strangers r = .72, $p < .001$. The test-retest correlation for perception of peer helping was .62, $p < .001$, though N = 113 as there was a great deal of missing data at posttest on this scale.

It was not possible to calculate a true test-retest correlation for the behavior subscales. Posttests were done two to three weeks after the pretests. The time frame for the behavior scale is two months to give opportunity to perform the behaviors. Administering the behavior measure at posttest would provide a score that overlaps with the pretest bystander measure. The behavior scale was not administered at the posttest.

Preliminary construct validity analyses. Using the pretest dataset containing both experimental and control group participants, Pearson correlations were computed between all attitudinal subscales and the measures of social desirability, rape myth acceptance, and bystander efficacy as a preliminary investigation of criterion-oriented validity (Table 5). Content validity was established in creation of items in collaboration with both practitioner and research experts in the field of bystander intervention and sexual and relationship abuse. Attitude measures were correlated in expected ways with rape myths and efficacy such that more positive bystander attitudes were related to lower endorsement of rape myths. Lack of awareness (higher scores on this scale) was related to greater rape myth endorsement and lower efficacy. Greater perceived bystander efficacy was related to greater expressed intent to help friends and strangers, greater

perception of peer helping, greater sense of responsibility and action. Social desirability scores were unrelated to the attitude measures of awareness and responsibility but were significantly related to higher scores on taking action, and intent to help both friends and strangers (though the magnitude of the correlations was small). Finally, Pearson correlations computed between bystander attitudes and behaviors (Table 6). Self-reports of bystander behaviors across subscales were related in predicted ways to attitudes about being a bystander. Lack of awareness of sexual and relationship abuse was related to lower self-reported bystander behavior across all measures of behavior. Attitudes more supportive of taking responsibility, taking action, intent to help friends and intent to help strangers, as well as greater perceived peer helping were related to great self-reported bystander behaviors across subscales.

Discussion

Evaluation of sexual violence prevention program effectiveness is a public health priority (Tharp et al, 2011). A bystander intervention approach to sexual and relationship abuse prevention, however, is a relatively new contribution to the field. While these programs are theoretically grounded, measurement development of theoretical constructs has not kept pace with the proliferation of programs in the field. In the current study, we described the development of new evaluation tools for assessing bystander response to sexual and relationship abuse. We presented psychometric analyses, including reliability and initial construct validity data on measures of awareness, sense of responsibility, perceptions of peer helping, intent to help friends and strangers, and self-reported types of bystander behaviors. Our two hypotheses were supported in that the items associated with most constructs did contain meaningful subscales and preliminary assessments of reliability and criterion-oriented validity suggested that the measures hold promise for future research. The tools capture key facets of bystander helping and

demonstrated good internal consistency, test-retest reliabilities that were reasonably high, low correlations with social desirability, and a factor structure that showed good face validity. Preliminary analyses of construct validity showed expected relationships among measures of attitudes and between attitudes and behaviors.

The current study was conducted only with college students in their first semester at school and with a predominantly white and relatively socioeconomically privileged sample, so the measures need additional testing with a wider variety of samples. Helping will clearly look different across cultural contexts. For example, most of the bystander behavior or intent to help items involve behaviors that might take place at a campus party. These behaviors and situations would need to be modified for a community sample, an important next step for measurement research in this area. As other measures of bystander constructs become available to the field, next steps in psychometric analyses (convergent and other forms of validity) can be conducted. The current measure of behavior assessed how many different types of behavior a person self-reports to have engaged in. Perhaps assessing the frequency with which each behavior was performed would increase validity, particular for use as a prevention outcome measure. It may be equally important to have people performing a small number of types of bystander behaviors many different times as to have them just perform a wide range of different types (a few times).

The current study represents a next step in research to establish a set of measures that can be used to better evaluate bystander-focused prevention tools. The unique nature of interpersonal abuse makes many established measures of bystander behavior of limited utility in this context. Further measurement development is important not only for program evaluation but also for developing a more nuanced understanding of how and why bystanders intervene to prevent the continuum of sexual and relationship abuse.

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Table 1: Factor Loadings for Readiness to Help: Principal Components with Promax Rotation

	Factor 1 Action	Factor 2 Responsibility	Factor 3 No awareness
Item description			
1. Recently attended a program about sexual abuse	.423		
2. Recently attended a program about intimate partner abuse (IPA)	.525		
3. Recently attended a program about stalking	.647		
4. Actively involved in projects to deal with sexual abuse on campus	.809		
5. Actively involved in projects to deal with IPA on campus	.849		
6. Actively involved in projects to deal with stalking on campus	.844		
7. Recently volunteered on projects focused on ending sexual abuse on campus	.776		
8. Recently volunteered on projects focused on ending IPA on campus	.839		
9. Recently volunteered on projects focused on ending stalking on campus	.849		
10. Have been/currently involved in efforts to end sexual abuse on campus	.848		
11. Have been/currently involved in efforts to end IPA on campus	.852		
12. Have been/currently involved in efforts to end stalking on campus	.865		
13. Sometimes I think I should learn more about sexual abuse		.782	
14. Sometimes I think I should learn more about IPA		.767	
15. Sometimes I think I should learn more about stalking		.752	
16. I think I can do something about sexual abuse		.720	
17. I think I can do something about IPA		.713	
18. I think I can do something about stalking		.686	
19. Planning to learn more about the problem of sexual abuse on campus		.787	
20. Planning to learn more about the problem of IPA on campus		.783	
21. Planning to learn more about the problem of stalking on campus		.786	
22. Don’t think sexual abuse is a problem on campus			.640
23. Don’t think IPA is a problem on campus			.606
24. Don’t think stalking is a problem on campus			.589
25. Don’t think there is much I can do about sexual abuse on campus			.607

26. Don’t think there is much I can do about IPA on campus			.617
27. Don’t think there is much I can do about stalking on campus			.594
28. Not much need for me to think about sexual abuse on campus			.675
29. Not much need for me to think about IPA on campus			.669
30. Not much need for me to think about stalking on campus			.681
31. Doing something about sexual abuse is the job of a rape crisis center			.531
32. Doing something about IPA is the job of a domestic violence shelter			.528
33. Doing something about stalking is the job of a domestic violence shelter or a rape crisis center			.492
34. Have not yet done anything to learn more about IPA*			.466
35. Have not yet done anything to learn more about sexual abuse*			.449
36. Have not yet done anything to learn more about stalking*			.472
Extraction Sums of Squared Loadings Total	8.34	6.13	3.83
Percent Variance	23.17	17.02	10.65

Note: Selected factor loadings are presented. Loadings are reported by factor on which the high loading was obtained rather than all loadings for all factors.

* Item dropped from final 12 item version of the “taking responsibility” scale.

Table 2
List of items for perceptions of peer helping

1. Ask a stranger if they need to be walked home from a party or get their friends to do so.
2. Criticize a friend who says they had sex with someone who was passed out or didn't give consent.
3. Do something to help a very intoxicated person who is being brought upstairs to to a bedroom by a group of people at a party.
4. Do something to help a person who has had too much to drink and is passed out.
5. Tell a campus or community authority if they see a person who has had too much to drink and is passed out.
6. Do something if they to see a woman surrounded by a group of men at a party who looks very uncomfortable.
7. Express discomfort/concern if someone makes a joke about a woman's body or about gays/lesbians or someone of a different race.
8. Knock on the door to see if everything is all right if they hear sounds of fighting or arguing through dorm or apartment walls.
9. Go to an RA or RHD, other campus or community resource for advice on how to help if they suspect someone they know is in an abusive relationship.
10. Accompany a friend to the police department or other community resource if they needed help for an abusive relationship.
11. Ask a stranger who looks very upset at a party if they are okay or need help.
12. Ask a friend if they need to be walked home from a party.
13. Talk to people they know about the impact of using language that is negative toward groups like gays/lesbians/women/people of color.
14. Speak up to someone who is making excuses for using physical force in a relationship.
15. Speak up to someone who is calling his/her partner names or swearing at them.
16. Contact a community resource (e.g., counseling center, RA) to discuss concerns about a friend who may be in distress.
17. Educate themselves about sexual abuse and intimate partner abuse prevention and share this information with others
18. Approach a friend if they thought s/he was in an abusive relationship to let them know they were there to help
19. Step in and say something to someone they knew who was grabbing or pushing their partner
20. Go to a community resource (crisis center, counseling center, police, professor, supervisor, etc.) if they saw someone grabbing or pushing their partner

Table 3
Items comprising brief intent to help friends and brief intent to help strangers scales

Item	Rotated factor loading
Intent to Help Friends: Brief Version	
1. I approach someone I know if I thought they were in an abusive relationship and let them know I'm here to help	.913
2. I let someone who I suspect has been sexually assaulted know I'm available for help and support	.837
3. I ask someone who seems upset if they are okay or need help	.767
4. If someone said they had an unwanted sexual experience but don't call it rape I express concern or offer to help	.731
5. I express concern to someone I know who has unexplained bruises that may be signs of abuse in relationship	.713
6. I stop and check in on someone who looks intoxicated when they are being taken upstairs at party	.701
7. I see a guy talking to a woman I know. He is sitting close to her and by look on her face I can see she is uncomfortable. I ask her if she is okay or try to start a conversation with her	.666
8. I see someone and their partner. Partner has fist clenched around the arm of person and person looks upset. I ask if everything is okay	.633
9. Ask someone who is being shoved or yelled at by their partner if they need help	.591
10. Tell someone if I think their drink was spiked with a drug	.463
Intent to Help Strangers: Brief Version	
1. I talk with people I don't know about sexual abuse and intimate partner abuse as issues for our community	.999
2. I talk with people I don't know about going to parties together and staying together and leaving together	.866
3. I talk with people I don't know about watching each other's drinks	.861
4. I talk with people I don't know about what makes a relationship abusive and what warning signs might be	.718
5. I express concern to someone I don't know if I see their partner exhibiting very jealous behavior and trying to control them	.706
6. I share information or resources about sexual assault and/or intimate partner abuse with someone I don't know	.652
7. I approach someone I don't know if I thought they were in an abusive relationship and let them know that I'm here to help	.531
8. I let someone I don't know who I suspect has been sexually assaulted know that I am available for help and support	.496

Table 4 Rotated Factor Loadings for Bystander Behaviors directed at friends and strangers

Item	Friend	Stranger
Factor 1: Risky situation		
1. I saw a/n _____ and their partner. They were in a heated argument. I asked if everything was okay	.902	.653
2. If a/n _____ was being shoved or yelled at by their partner, I asked if they needed help	.891	.786
3.*I let a/n _____ I suspect has been sexually assaulted know that I was available for help and support* [A]	.845	.551
4. I approached a/n _____ if I thought they were in an abusive relationship and let them know that I was there to help	.841	.518
5. I stopped and checked in with a/n _____ who looked very intoxicated when they were being taken upstairs at a party or home with someone they just met	.840	.606
6. If I saw a/n _____ grabbing or pushing their partner, I said something to them	.836	.725
7. *I expressed concern to a/n _____ if I saw their partner exhibiting very jealous behavior and trying to control them* [A]	.828	
8. If a/n _____ said they had an unwanted sexual experience but they don't call it 'rape' I expressed concern and/or offered to help	.827	.677
9. I heard a/n _____ talking about using physical force with their partner, spoke up against it and expressed concern for their partner	.814	.723
10. I confronted a/n _____ who made excuses for abusive behavior by others	.808	.537
11. If I saw a/n _____ taking a very intoxicated person up to their room, I said something and asked what the _____ was doing	.806	.596
12. I supported a/n _____ who wanted to report sexual assault or intimate partner abuse that happened to them even if others could get in trouble	.771	.604
13. I heard a/n _____ talking about forcing someone to have sex with them, spoke up against it and expressed concern for the person who was forced	.760	.784
14. I told a/n _____ if I thought their drink may have been spiked with a drug	.746	.772
15. I expressed disagreement with a/n _____ who said having sex with someone who is passed out or very intoxicated is okay	.736	.807

16. I saw a man talking to a female_____. I could see she was uncomfortable. I asked her if she was okay or tried to start a conversation with her	.709	.766
17. If I heard sounds of yelling and fighting coming from a/n _____'s dorm room or other residence walls I knocked on the door to see if everything was okay	.772	.494
18. If I heard a/n _____ insulting their partner, I said something to them	.658	.602
19. *I expressed concern to a/n _____ who has unexplained bruises that may be signs of abuse in their relationship* [A]	.452	
Factor 2: Access resources		
20. I called 911 because of suspicion that a/n _____ had been drugged	.927	.861
21. I called 911 or authorities when I heard sounds of yelling and fighting	.895	.797
22. I accompanied a/n _____ to a local crisis center	.891	.806
23. I called a crisis center or community resource for help when a/n _____ told me they experienced sexual or intimate partner abuse	.891	.816
24. I called 911 or authorities because someone was yelling for help	.882	.800
25. I called 911 or authorities when a/n _____ needed help because of being hurt sexually or physically	.836	.823
26. When I heard that a/n _____ was accused of sexual abuse or intimate partner abuse, I came forward With what I knew rather than keeping silent	.823	.854
27. I went with a/n _____ to talk with someone (community resource, police, crisis center, etc.) about an unwanted sexual experience or intimate partner abuse	.778	.793
Factor 3: Proactive behavior		
28. *I got further training in skills to confront and prevent sexual abuse and intimate partner abuse*[A]	.747	
29. *I got advice from others about how to help someone who has experienced sexual abuse or intimate partner abuse*[A]	.743	
30. *I developed a specific plan for ways I might safely intervene as a bystander if I see sexual abuse or intimate partner abuse happening around me*[A]	.700	
31. I educated myself about sexual abuse and/or intimate partner abuse and what I can do about it	.699	.767
32. *I thought through the pros and cons of different ways I might help if I saw an instance of sexual abuse or intimate partner abuse*[A]	.685	
33. I encouraged others to learn more and get involved in preventing sexual or intimate partner abuse	.649	.646

34. I talked with a/n _____ about sexual and/or intimate partner abuse as an issue for our community	.613	.899
35. *I tried to get others to help me before trying to do something about sexual abuse or intimate partner abuse that I saw going on*[A]	.608	
36. *I refused to remain silent about instances of sexual abuse or intimate partner abuse I knew about*[A]	.583	
37. I talked with a/n _____ about what makes a relationship abusive and what warning signs might be	.445	.649
38. *I shared information or resources about sexual assault or intimate partner violence with* [A]		.605
Factor 4: Party safety		
39. I made sure I left the party with the same people I came with	.877	
40. I made sure a/n _____ didn't leave an intoxicated friend behind at a party	.817	
41. I talked with a/n _____ about going to parties together and staying together and leaving together	.801	
42. If a/n _____ had too much to drink, I asked them if they need to be walked home from the party	.718	
43. I walked a/n _____ home from a party when they had too much to drink	.668	
44. I asked a/n _____ who seems upset if they were okay or needed help	.503	

[A] *and italics* denotes items that loaded at values of .4 on different factors for friends and strangers.

Note: For strangers, factor loadings reported for items where values were at least .4 on specified factor.

Table 5

Correlations between Attitude Outcome Measures and Rape Myths and Social Desirability

Variable	1	2	3	4	5	6	7	8	9
1. Rape myths	-	-.25***	-.04	.09**	-.12***	.28***	-.18***	-.26***	-.16***
2. Efficacy		-	.08	-.04	.28***	-.24***	.46***	.65***	.55***
3. Social Desirability[a]			-	.10*	.06	-.06	.09*	.08*	.17***
4. Action				-	.18***	-.06	.00	-.04	.07*
5. Taking responsibility					-	-.31***	.32***	.40***	.38***
6. No awareness						-	-.17***	-.25***	-.23***
7. Perception of peer helping							-	.62***	.55***
8. Full scale intent to help friends								-	.66***
9. Full scale intent to help strangers									

* $p < .05$ ** $p < .01$ *** $p < .001$

[a] For correlations with social desirability only time 2 participants available so N is approximately 605.

Due to listwise deletion of missing data, Ns for other correlations range from 879 to 940

Table 6

Correlations between Bystander Attitudes and Behaviors (*N*=879 – 904)

Behavior Subscale	Action	Taking responsibility	No awareness	Peer helping	Intent Fr[a]	Intent Str[b]
Help Directed at Friend						
Risky Situation	.05	.09**	-.07*	.06	.01	.10**
Access Resources	.10**	.12***	-.08**	.04	-.03	.10**
Proactive	.14**	.22***	-.20***	.12***	.10**	.20***
Party Safety	.01	.09**	-.10**	.11***	.20***	.09**
Help Directed at Strangers						
Risky Situation	.07*	.17***	-.10**	.20***	.13***	.27***
Access Resources	.08*	.14***	-.10**	.15***	.06	.16***
Proactive	.12***	.21***	-.18***	.23***	.14***	.30***
Party Safety	.06	.15***	-.13***	.23***	.16***	.29***

[a] Intent to help friends – full version

[b] Intent to help strangers – full version

*$p < .05$ ** $p < .01$ ***$p < .001$