Research Article

Psychometric Evaluation of an Instrument to Measure Hispanic Mothers' Normative Beliefs, Intentions, Past Experience and Past Behavior Related to the Discussion of Sex-Related Topics with their Adolescent Daughters

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Abstract

Aim: The aim of this project was to describe the psychometric properties of a recently developed instrument that measures Hispanic mother normative beliefs, intentions, past experience, and past behavior regarding the Discussion of Sex-Related Topics (DSRTs) with their adolescent daughters.

Background: The DSRTs between Hispanic mothers and their adolescent daughters is important because this interaction has been found to be a protective factor against the daughter's risk for STDs and unintended pregnancy. Hispanic mother talk less with their daughters about sex-related topics (SRTs) than other ethnic groups. The Rodriguez Normative Belief Instrument (RNBI) has been established to measure normative beliefs, normative beliefs, past behavior, and past experience regarding Hispanic mothers' DSRTs with their adolescent daughters.

Method: The 44-item RNBI was developed based on the Theory of Planned Behavior and the Parent-Based Expansion Theory of Planned Behavior. A convenience sample of 119 Hispanic mothers of adolescent females grades 6 through 8 from two Midwestern Catholic Middle Schools was enrolled completed the instrument. Paper and pen instruments were administered in the language of the participant's choice, English or Spanish.

Results: The entire RNBI and each of the four subscales demonstrated acceptable internal consistency (Cronbach'salpha ≥ .70). The overall reliability of the RNBI was .82 with the normative beliefs subscale of .85, intentions .88, past behavior .89, and past experience .88. Confirmatory factor analysis validated the four subscales.

Conclusion: Psychometric analyses indicated that the RNBI demonstrates acceptable validity and reliability for this sample.

Keywords: Hispanic mothers; Adolescent female; Discussion of sex-related topics

Introduction

The Center for Disease Control (CDC) estimates that half of all new STIs in the United States occur among adolescent men and women ages 15-24 [1,2]. STIs cost the American healthcare system almost $16 billion each year. As well as financial considerations, STIs can lead to potentially severe physical repercussions for the affected individuals such as infertility and cervical cancer [2]. It is well established that Hispanic adolescent females have disproportionately high STIs when compared with white non-Hispanic adolescent females [3]. In addition to STIs, teen pregnancy also has unfavorable effects on society. Only about 50% of teen mothers earn their high school diploma by age 22 [4]. Despite the fact that teen birth rates have declined in the United States they still remain high, especially among Hispanic teens [5,6]. These effects can be decreased if appropriate interventions are designed and executed that reduce STIs and teen pregnancy. These interventions, while ultimately aimed at female adolescents' intentions and behaviors, may include interventions to increase parents' intentions and behaviors involving the discussion of Sex-Related Topics (DSRTs) with their daughters. The parent behavior of DSRTs has a direct influence on adolescent beliefs, which are directly associated with the adolescents' intentions to do something (in this case, to engage in sexual risk behaviors). The adolescents' intentions ultimately influence the adolescent behavior [7].

While adolescent sexual behavior is influenced by peers, media, professionals (teachers, health care professionals, religious leaders) [8] parents have the most significant influence on their adolescent children's sex-related attitudes, intentions, and behaviors [7,9]. Although parents have the most significant influence on their child's sex related attitudes, many parents have not discussed SRTs with

their adolescent children [10-13]. Some reasons parents provide for not discussing SRTs with their adolescent children include language and cultural barriers between the parents and their children, [10] the perception the child is too young, [13] not knowing what to say, and parent or child embarrassment [12,13]. Guilamo-Ramos, Jaccard, Dittus, and Collins [12] found that the more mothers perceived important people in their lives approved of them talking about sex, and the greater the number of parents they thought did so, the more frequent were the DSRTs with their children. Despite the fact that parents are known to influence their adolescents' intentions and decisions regarding sexual activity, studies have shown that Hispanic mothers rarely engage in DSRTs with their adolescent daughters [8,14,15]. Hispanic mothers talk less with their daughters about SRTs when compared to other ethnic groups [8]. Thus understanding the background factors and the normative beliefs affecting the intention of Hispanic mothers regarding the discussion of SRTs with their adolescent daughters is the first step toward developing an effective intervention to increase discussion of SRTs among this group.

A theoretical framework frequently used to explain behavior, including DSRTs behavior, is Ajzen's Theory of Planned Behavior (TPB) [16]. The TPB and an expanded variation, the Parent-Based Expansion of the Theory of Planned Behavior (PBETPB) were the guiding frameworks for the study and were used to explain mothers' intentions regarding the DSRTs with their adolescent females [7]. According to the PBETPB, parental behaviors are external influences on adolescent behaviors [7]. Behavioral beliefs, normative beliefs and control beliefs influence behavioral intentions that in turn are the best predictors of actual behavior [16]. These beliefs are influenced by background factors, which are factors that influence the beliefs people hold [17]. According to the TPB, normative beliefs are beliefs that an individual holds about performing a behavior, that important people in their life (normative referents) either approve or disapprove of, and that these important people perform or do not perform the behavior [16]. Normative beliefs are important determinants of behavioral intention and engaging in a specific behavior [17]. According to TPB, normative referents may include friends, parents, spouse, co-workers, and depending upon the behavior, physicians or others [16]. In this study, normative referents included the subject's mother, father, sister and close female friends, husband or daughter's father, doctor or health care provider, priest or religious advisor, and daughter's godmother (Comadre or "co-mother"). A study performed by Askelson, et al. [18] using TPB as the framework found that mothers who reported they had important persons in their lives supporting communication were more likely to intend to communicate about SRTs, which illustrates the importance studying normative beliefs. Thus, the current study measured normative beliefs in order to understand what influence select important persons have on Hispanic mothers' intentions to discuss SRTs with their adolescent daughters.

While numerous investigations have examined adolescents' intentions and behaviors, there is little research utilizing the TPB framework examining Hispanic mother's intention to discuss SRTs with their adolescent daughters. There were no instruments available based on TPB to measure intention of mothers regarding DSRTs, past experience with DSRT, past DSRT behavior, nor are their instruments to measure Hispanic mothers' normative beliefs including reference to specific family members on DSRTs. This study aim of this project

was to describe the psychometric properties of a recently developed instrument that measures Hispanic mother normative beliefs, intentions, past experience, and past behavior regarding the DSRTs with their adolescent daughters.

Instrument development

The review of the literature indicated that no established instrument exists to measure normative beliefs, intentions, past behaviors, and past experiences relevant to DSRTs among Hispanic mothers of adolescent girls. As a result, the 44-item Rodriguez Normative Beliefs Instrument (RNBI) was developed to address this need for a comprehensive instrument to evaluate Hispanic mothers' normative beliefs, intentions, past behaviors, and past experiences related to DSRTs. The RNBI was created based on Ajzen's Theory of Planned Behavior (TPB) [16,19] and Parent-Based Expansion of the Theory of Planned Behavior (PBETPB) [7], following the recommendations for questionnaire construction by Ajzen [20]. As recommended by Ajzen, [20] first the behavior of interest, the DSRTs, was defined in collaboration with experts in adolescent sexuality. Time elements in which SRTs were to be discussed was "within the next three months" as it is enough time for the behavior to take place but not too much time where life circumstances may cause a change in intention. The DSRTs in the current study refers to discussions about menstruation, sexual intercourse, oral sex, abstinence, pregnancy, STIs, emotional consequences of sex, religious beliefs about sex, cultural beliefs about sex, and/or beliefs about birth control.

The initial versions of the RNBI were reviewed by three doctoral prepared nurses, who were involved with the Hispanic community, for content and face validity. They were asked to read the instrument to examine whether the English and Spanish versions made sense and whether all relevant SRTs and normative referents were included. Suggestions were aggregated and the appropriate revisions were made to the instrument. Then the RNBI was reviewed by two nurses who provided suggestions in modifying the instrument to a sixth grade reading level. The RNBI was then translated to Spanish by a native Spanish speaker and subsequently reviewed by a bilingual Doctoral Student in nursing. The instrument was then back translated from Spanish to English to ensure accuracy of the initial translation. Finally the instrument was pilot tested with a small group of mothers (n=20) for face validity and study feasibility including a pilot focus group to get feedback on the instrument. Minor revisions were made based on the feedback from the focus group. This pilot study supported the feasibility of the proposed approach to gathering data and supports the face validity of the RNBI. The pilot study further demonstrated that the mothers would complete the questionnaire and that they were able to understand the questions. It also provided initial support for the content validity of the RNBI because mothers who discussed SRTs in the past exhibited higher normative beliefs. Due to the small sample size of this preliminary study, the next logical step in development of this tool was to administer it to a much larger sample in order to further evaluate the psychometric characteristics of the instrument. Thus the research questions that were addressed by the proposed methodology included:

RQ1: What is the internal consistency of the overall RNBI and the subscales?

RQ2: What is the construct validity of the four theoretically derived subscales of the RNBI?

The RNBI consists of four subscales (normative beliefs, intention, past behavior, and past experience). The 11-item RNBI normative belief subscale (items 1-11) includes a series of statements concerning what the participant believes important people in their lives would think of them engaging in DSRTs with their daughter. The first version of the normative belief subscale (items 1-10) included important people in their lives as the mother's mother, the mother's father, health care provider, and priest. After the pilot focus group was conducted it was evident an additional normative referent needed to be added, and daughter's godmother (comadre). An 11th normative belief item was added to the normative belief subscale. The subject responds to each item on a 7-point Likert scale with 1 as *strongly disagree* and 7 as *strongly agree.* An example of an item is as follows: "My *mother* would approve of me talking about sexual topics with my daughter within the next three months." The items have the same root, replacing *mother* with other important people (father, sister and close female friends, husband or daughter's father, doctor or health care provider, priest or religious advisor, and daughter's godmother (Comadre or "co-mother")) in their lives. The item responses are then summed to result in a normative beliefs score ranging from 11-77, with greater numbers indicating a higher degree of normative beliefs.

The 11-item RNBI intention subscale (items 12-22) queries mothers' intentions to discuss the various SRTs within the next three months with their adolescent daughter. Responses to the 11-item intention subscale are also made on 7-point Likert scale with 1 as disagree and 7 as agree and were summed with scores ranging from 11-77. An example of the items is as follows: "I plan to talk with my daughter in the next three months about *menstruation (her period)*." Each consecutive statement includes the same stem but replaces the italicized portion with one of the afore mentioned sexual topics. The item responses are then summed to result in an intention score ranging from 11-77, with greater numbers indicating a higher degree of intention to engage in the discussion of SRTs.

The 11-item RNBI past behavior subscale (items 23-33) asks the respondent to indicate if they have previously engaged (yes or no) in a discussion with their adolescent daughter about a variety of SRTs. The first item of the subscale is as follows, "*In the past three months, have you discussed at least one sexual topic from this list with your daughter*?" Then, each of the following items begin with the stem, "In the past three months, have you talked with your daughter about *menstruation*?" Each item substitutes the italicized portion with the same sexual topics as in the intention subscale. The responses (1=yes, 2=no) to items in the subscale were summed to arrive at a past behavior score ranging from 11-22, with higher scores indicating fewer previous attempts to engage in DSRTs with their daughter.

The 11-item RNBI past experience subscale (items 34-44) is almost identical to the past behavior subscale but asks the respondent to indicate if their own mother discussed with them (yes or no) when they were adolescents, a variety of SRTs. The responses (1=yes, 2=no) to items in the subscale were summed to arrive at a past experience score ranging from 11-22, with higher score indicating fewer discussions with their own mothers regarding SRTs.

Methods

G*Power [21] was used to calculate the sample size for a linear regression model with a medium effect size of 0.15 and 8 predictors [22]. With a significance level of 0.05 and 80% power, 109 participants were needed for the analysis. A sample size of 119 was collected to account for 10% incompletion rate. A convenience sample of Hispanic mothers of 6th to 8th grade girls was recruited from two Catholic middle schools in the Midwest. A convenience sample was appropriate because the sample sufficiently represented the target population and thus was necessary in order to address the purpose [23]. The two middle schools include an enrollment of 99% Hispanic students. Both schools are located in the inner city and serve a majority of students who are at or below the Federally designated poverty level. The schools are located within two miles of one another. The first school has 67 sixth grade girls, 64 seventh grade girls, and 52 eighth grade girls for a total of 183 potential subjects. Ninety-nine percent of the students at this school are part of the School Choice program, which means they receive a voucher from the state to utilize for the private school. Similarly, 99% percent of the students at the first school take part in the Federal Free and Reduced Lunch Program. The School Choice Program and the Free and Reduced lunch program are both indicators of the low socioeconomic status of the schools. The second middle school (grades 5th – 8th) is an all girls Catholic Middle School and has 117 students in grades 6 through 8. Ninety-four percent of the students participate in the School Choice program and 90% participate in the Free and Reduced Lunch Program. Inclusion criteria for the study was as follows: Mothers or primary female caretakers were included in the study if they identified themselves as Hispanic, if they speak Spanish or English, and if they have a daughter in grades 6th through 8that one of the two schools. Primary female caretakers (legal guardians) were included if they live with the adolescent daughter as the primary caretaker of the child.

Procedure

Data collection occurred from October 2013 through December 2013 following written permission being obtained from school administrators. A pre-notice letter was sent home with all female students in each middle school one week prior to data collection announcing the study and asking mothers to come to the school to complete the questionnaire during the designated before or after school timeframes. A verbal announcement was made to the students the day prior to data collection by the principal encouraging the students to remind their mothers about the study.

Mothers were invited to come to school 20-30 minutes prior to the start of school or over a four-hour period after school, on a date agreed upon by school administrators to engage in the study. During this time they had the opportunity to complete the consent form and the quantitative instruments. A second date was offered a week later for mothers who were unable to attend the first date. During the scheduled data collection sessions, a research assistant (RA) who has been trained and approved by the Institutional Review Board (IRB) assisted the primary investigator in answering any questions the mothers have during the consent process. The quantitative instruments were completed in secluded rooms in the school. Eligibility for the study was determined by the investigator or the RA asking the participants two screening questions: Are you Hispanic? Are you the mother or primary caretaker of a 6th to 8th grade girl? If they met the screening criteria, they were consented and then completed the questionnaire packet.

After this initial recruitment effort elicited only 40 mothers, an addendum was added to the IRB proposal that modified the recruitment by having secretaries at the first school call mothers utilizing an IRB approved script to schedule appointments for the mothers to come and complete the data collection instruments. The script included the assurance that their participation was completely voluntary and would in no way impact their daughter's academic success. The RA or PI was present during the appointments in order to answer questions. An additional 79 mothers were recruited in this manner.

Mothers who completed the questionnaire received a $10 gift card. Completing the questionnaire and consent took approximately 20 minutes. After the forms were completed, they were anonymously deposited into a locked survey box.

Results

Sample characteristics

Participants were 119 Hispanic mothers of 6th-8th grade adolescent girls from two inner city Catholic schools. All of the participants self-identified as Hispanic and as the primary caretaker of a 6th to 8th grade girl enrolled in one of the two schools. One hundred ten participants were recruited from the first school (92.4%) and 9 were recruited from the second school (7.6%). All of the participants from both schools self-identified as Hispanic. Since these two groups were both Hispanic mothers of middle schools girls from Catholic schools located in the same neighborhood they were both included in the total sample consisting of 119 participants.

Participants ranged in age from 28-50 (x = 37.1, SD = 5.2). Participants' daughters' average age was 12 years (SD =1.5). One hundred eight participants identified as Mexican (90.8%), 1.7% identified as Puerto Rican, and one participant identified as Honduran and one as Costa Rican. The rest of the participants identified as "other" (n=7). In terms country of birth, 77.8% reported they were born outside of the United States. One hundred eight participants (90.8%) chose to complete the questionnaire in Spanish while 11 (9.2%) completed it in English. Sample characteristics are described in Table 1.

To address the first research question, Cronbach's coefficient alpha was computed for the RNBI as a whole and for each of the four RNBI subscales (normative beliefs, intention, past experience, and past behavior) [24]. Subscales with an alpha greater than .70 were considered a priori to exhibit adequate internal consistency and measure an underlying construct [25]. Cronbach's alpha calculation (See Table 2) revealed that the Rodriguez Normative Belief Instrument (RNBI) total score (.82) and the four subscales (.85-.89) exhibited acceptable internal consistency.

To address research question two, the hypothesis testing approach was used [26]. It was hypothesized that according to the Theory of Planned Behavior, mothers' scores on the normative beliefs subscale would be directly correlated with their scores on the intention subscale. Spearman's rank correlation was used because the data did not meet the assumptions of normality, despite attempts to transform the data. Using Spearman's Rho correlation coefficients, since mothers' scores on the normative beliefs subscale have a significant moderate positive correlation with their scores on the intention subscale (.42,

Table 1: Sample Characteristics: Quantitative Portion (N=119).

Patient Characteristics	N	%	Mean	Range
Relationship to adolescent girl				
Biological mother	117	98.4		
Grandmother	1	.8		
Other	1	.8		
Age			37.1+5.2	28-50
Highest Completed Level of Education				
<High school	79	66.5		
High School	21	17.6		
Some College (or technical school)	12	1.1		
College Graduate	4	3.4		
Graduate Degree	1	.8		
Missing	2	1.6		
School				
School 1	110	92.4		
School 2	9	7.6		
Survey Language				
Spanish	108	9.8		
English	11	9.2		
Ethnic Group				
Mexican	108	9.8		
Puerto Rican	2	1.7		
Honduran	1	.8		
Costa Rican	1	.8		
Other	7	5.9		
Born outside of the U.S. y/n				
Yes	91	76.5		
No	26	21.8		
Missing	2	1.7		
Marital Status				
Married	86	72.3		
Single	23	19.3		
Divorced	9	7.6		
Missing	1	.8		
Church Attendance				
>once/week	11	9.2		
Once/week	36	3.3		
1-3 times/month	38	31.9		
Less than once/month	23	19.3		
Never	9	7.6		
Missing	2	1.7		
Catholic y/n				
Yes	116	97.5		
No	2	1.7		
Missing	1	.8		

$p<.001$), there is preliminary evidence of the construct validity of the RNBI. As mothers' normative beliefs increase, their intention to engage in the DSRTs also increases. Further evidence was construct validity was demonstrated by the significant negative correlation between past behavior and normative beliefs ($r= -.26$, $p<.05$). Past behavior refers to whether the mothers had discussed SRTs with their daughters in the past. As participants' past behavior scores decrease, normative beliefs increase. Lower behavior scores indicate that the behavior has taken place. In other words, mothers who have engaged in the behavior of discussing SRTs to a greater extent, report greater normative beliefs regarding the DSRTs. There was also a significant negative correlation ($r= -.26$, $p<.05$) between past experience scores

Table 2: RNBI Cronbach's Alpha Reliability Estimates and Scale Descriptive Statistics (N=119).

Measure	No. of Items	Range	Mean (SD)	α
Normative Beliefs	11	33-77	61.29 (9.37)	.85
Intentions	11	34-77	66.33 (8.32)	.88
Past Behavior	11	11-22	16.66 (3.31)	.89
Past Experience	11	11-22	2.31(2.56)	.88
Entire RNBI	44		164.6(13.64)	.82

Table 3: Regression Coefficient Table for Normative Beliefs Predicting Intention.

	b	SE b	β
Constant	54.61	2.60	
Normative Beliefs	.003	.001	.40***

Note: R^2 = .15.8. *** $p<.001$
Intention = 54.61 + .003 (normative beliefs).

and normative belief scores. Lower past experience scores indicate that they have had more experience (responses to each item was 1=yes, 2=no) regarding the DSRTs with their own mother. In other words, participants' whose mothers have discussed SRTs to a greater extent have greater normative beliefs regarding the DSRTs. Also hypothesized by the TPB, mothers' intentions to engage in the DSRTs with their adolescent daughters would be predicted by their normative beliefs. Thus, a simple linear regression was used to assess the ability of normative belief scores to predict intention to engage in DSRTs. It was found to be consistent with the TPB in that mothers' intentions to engage in the DSRTs with their adolescent daughters were indeed predicted by their normative beliefs (R^2= .16). The total variance of intention in the sample explained by normative beliefs was 15.8%, $F (1, 117) = 21.95$, $p< .001$. See Table 3. Thus, the aforementioned relationships are consistent with the models of TPB and PBETPB, again, supporting the construct validity of the RNBI scale.

Confirmatory factor analysis with a varimax rotation was performed to validate the hypothesized theoretical constructs of the questionnaire including normative beliefs, intentions, past behavior, and past experience. Prior to initiating the factory analysis, preliminary analyses were undertaken to assess the factorability of the RNBI. The Kaiser-Meyer-Olkin (KMO) index of sampling adequacy was .776 and Barlett's test of sphericity was statistically significant ($p<.001$) [27]. Thus, the data was amenable to factor analysis. Factor analysis demonstrated four factors, which were consistent with the four hypothesized theoretical constructs This analysis exhibited construct validity because each subscale item loaded on its predicted factor. The factors are normative beliefs, intentions, past behavior, and past experience. This table indicates that items 1-11 loaded on factor three and all of these items were developed to assess the construct of normative beliefs; items 12-22 loaded on factor four and all of these items were developed to assess the construct of intention; items 23-33 loaded on factor one and all of these items were developed to assess the construct of past experience; and items 34-44 loaded on factor two of which all of the items were developed to assess the construct of past behavior factor. All of the factors are consistent with constructs from the Theory of Planned Behavior.

The rationale for forcing the factor analysis to identify four factors was based by the theoretical underpinnings of the instrument development; the factor analysis findings support this decision. According to Polit (2010) there are a number of tests that can be done to determine the number of factors. First, by examining the

Table 4: Rotated Component Matrix Based on Confirmatory Factor Analysis with Varimax Rotation for the 11-item Normative Belief Subscale from the Rodriguez Normative Beliefs Instrument (RNBI) (N=119).

	Component			
	1	2	3	4
Normative Belief 1	-.044	-.001	.445	.098
Normative Belief 2	-.009	-.094	.573	-.005
Normative Belief 3	-.013	.084	.545	.01
Normative Belief 4	-.075	.159	.737	.023
Normative Belief 5	-.143	-.161	.65	.013
Normative Belief 6	-.203	-.106	.592	.197
Normative Belief 7	-.047	.109	.793	.062
Normative Belief 8	.037	.018	.623	.092
Normative Belief 9	-.04	-.276	.576	.171
Normative Belief 10	-.08	-.133	.578	.162
Normative Belief 11	-.024	-.028	.697	.115

proportion of variance accounted for by a factor it was determined that there are four factors that account for more than 5% of the total variance in the data matrix which is consistent with the four subscale factors. Next, when examining factors based on the Kaiser-Guttman rule (Eigenvalue > 1) there are 11 factors [27]. The 11- item model was not consistent with the theoretical constructs and then when forcing 4 factors, the items aligned well with the subscales. Finally, based on the scree-test, it appears that a break in the slope occurs between factors four and five suggesting again, that four factors should be retained. Thus, a majority of the findings point to four factors.

In examining the rotated component matrix, factor one included the items that identified past experience, factor two consisted of items that defined past behaviors, items that loaded high for factor three was the normative beliefs, and factor four items appeared to be intentions. With the exception of a few items, most of the items loaded on one unique component again re-enforcing a four-factor instrument. See Tables 4-7 for the rotated component matrix for each subscale.

Discussion

These results support the psychometric properties of a new instrument to assess Hispanic mothers' normative beliefs about discussing SRTs their adolescent daughters. The psychometric properties will be discussed according to the research questions.

RQ1: What is the internal consistency of the overall RNBI and the subscales?

Table 5: Rotated Component Matrix Based on Confirmatory Factor Analysis with Varimax Rotation for the 11-item Past Experience Subscale from the Rodriguez Normative Beliefs Instrument (RNBI) (N=119).

	Component			
	1	2	3	4
Past Experience 1	.719	-.016	-.085	.083
Past Experience 2	.526	.01	-.18	.023
Past Experience 3	.769	.11	-.009	.158
Past Experience 4	.492	.141	.58	-.022
Past Experience 5	.694	.211	.003	-.256
Past Experience 6	.758	.143	.056	-.209
Past Experience 7	.578	.149	-.145	.183
Past Experience 8	.689	.086	-.081	-.040
Past Experience 9	.710	.053	-.129	-.191
Past Experience 10	.696	.027	-.092	-.189
Past Experience 11	.773	.094	-.004	.031

Table 6: Rotated Component Matrix Based on Confirmatory Factor Analysis with Varimax Rotation for the 11-item Intention Subscale from the Rodriguez Normative Beliefs Instrument (RNBI) (N=119).

	Component			
	1	2	3	4
Intensions 1	-.086	-.028	.567	.239
Intensions 2	.056	-.075	.399	.351
Intensions 3	-.032	-.198	.332	.498
Intensions 4	.123	-.392	.131	.394
Intensions 5	-.027	-.090	.280	.617
Intensions 6	.017	-.148	.148	.791
Intensions 7	-.007	-.183	.154	.808
Intensions 8	-.094	-.29	.043	.763
Intensions 9	-.099	-.156	.172	.794
Intensions 10	-.068	-.176	.156	.724
Intensions 11	-.092	-.143	.320	.690

Table 7: Rotated Component Matrix Based on Confirmatory Factor Analysis with Varimax Rotation for the 11-item Past Behavior Subscale from the Rodriguez Normative Beliefs Instrument (RNBI) (N=119).

	Component			
	1	2	3	4
Past Behavior 1	.056	.432	-.011	-.053
Past Behavior 2	-.010	.089	.460	-.064
Past Behavior 3	.094	.817	-.098	-.147
Past Behavior 4	-.027	.611	.094	.042
Past Behavior 5	.161	.701	-.095	-.168
Past Behavior 6	.156	.562	-.229	-.186
Past Behavior 7	.132	.765	-.075	-.090
Past Behavior 8	.077	.724	.068	-.192
Past Behavior 9	.289	.658	-.111	-.228
Past Behavior 10	.244	.701	-.105	-.245
Past Behavior 11	.120	.777	-.022	-.192

Analysis of the internal consistency of the RNBI and its subscales was conducted in order to determine if the instrument measures the constructs that it intended to measure based on the Theory of Planned Behavior. The results from this study provided evidence for the validity and reliability of the RNBI. The Cronbach's alpha coefficient indicated acceptable internal consistency of the items on the entire instrument (.82) and the four subscales (.85-.89).While there are no prior studies utilizing the RNBI, the internal consistency indicates that this instrument is valid and may be appropriate in future studies. This analysis indicated that the reliability of the total instrument and its subscales could not be markedly improved by deleting any item from the instrument.

RQ2: What is the construct validity of the four theoretically derived subscales of the RNBI?

The RNBI scale demonstrated evidence of construct validity. This evidence includes the normative beliefs of the participants being significantly correlated with mothers' intentions to engage in the DSRTs (r = .42), which is consistent with the TPB framework. Also, background factors (past behavior, past experience) were correlated with normative beliefs. These findings are consistent with the models of PBETPB and TPB and thus demonstrate construct validity of the RNBI. Further, construct validity was demonstrated because, theoretically, background factors influence normative beliefs, control beliefs, and behavioral beliefs and a combination of the three beliefs influence intentions. Consistent with the TPB, mothers' intentions to

engage in the DSRTs with their adolescent daughters were predicted by their normative beliefs (R² = .16).

Convergent validity of subscale items was supported through factor analysis. The four pre-determined subscales consistent with the TPB were confirmed through factor analysis. When four factors were forced, each of the factors emerged with the highest loadings on the theoretically anticipated factors, demonstrating that the items converged on the same construct, which contributes to evidence of construct validity. This study includes a number of limitations. First the sample included a convenience sample of Hispanic mothers of adolescent females from two Midwestern Catholic middle schools. The relative homogeneity of the sample limits the generalizability of the findings to mothers of adolescent females in non-Catholic schools. Second, although most items loaded high on each factor, there was one factor that loaded low (.089) on the past behavior scale. The item was, "In the past three months, have you talked about menstruation (her period) with your daughter?" Since it did not load on any of the factors, it could be discarded in order to reduce the scale. While one may want to know if a mother has talked about menstruation with her daughter, an item asking if she has ever talked with her daughter about her period might be more useful than in the past three months because most girls in 6th to 8th grade have already started their menses. This item should be examined and possibly removed for use in future studies. In contrast, the items relating more to sex should have the three-month timeframe, as they require more breadth and repetition and are more sensitive topics [27]. A third potential limitation of the RNBI is that items were grouped by subscale on the questionnaire for the current study. Due to the number of items and the similar question stems, it is possible some participants did not read each item and may have circled the same answer for all items in the subscale. To prevent this, items could be re-ordered but this may also increase the length of time required to complete the survey. A fourth potential limitation of the study is the omission of the TPB constructs of behavioral beliefs and control beliefs as constructs of the TPB which were not measured in this study because it was determined that normative beliefs would be most important in the Hispanic population. Given the small amount of variance in mothers' intentions to engage in the DSRTs with their adolescent daughters and normative beliefs (R² = .16), it is clear that other constructs also influence intention to discuss SRTs. It is possible that behavioral beliefs and control beliefs may also significantly influence intention among to this population. Fifth, although the RNBI exhibits acceptable internal consistency, the stability of the instrument over time through a test-retest was not assessed. However, the nature of the questions on the instrument may be a treatment itself by motivating the respondent to change their behavior prior to the retest assessment and thus test-retest may not be the best approach to assessing stability.

Future research with this instrument should include psychometric analysis with it used in other samples such as Hispanic mothers whose daughters attend public school. Use with replication samples would help determine whether the subscales can be condensed and refine. Also, behavioral beliefs and control beliefs subscales should be developed and analyzed. The RNBI can be used to evaluation intervention studies that aim to increase the DSRTs between Hispanic mothers and their adolescent daughters. The instrument can be administered prior to the intervention and then the mothers'

behavior can be measured three months after the intervention. Future research should also consider stability of the instrument.

Conclusion

These analyses indicated that four distinct factors were underlying the Hispanic mother's responses to the RNBI and that the factors were internally consistent. The findings from this study suggest that the RNBI is a valid and reliable instrument to identify Hispanic mothers' normative beliefs, intentions, past experience and past behavior regarding DSRTs with their adolescent daughters. Further studies in varying samples of Hispanic mothers are needed to establish stronger psychometric properties for the questionnaire.

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