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## The likelihood of participation in clinical trials can be measured: The Clinical Research Involvement Scales (CRIS)

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### Abstract

**Objective**—We developed the Clinical Research Involvement Scales (CRIS) to assess clinical trial willingness-to-participate.

**Study Design and Setting**—Diverse populations (N=919) aged  $\geq 18$  years from Atlanta, Georgia were included in comprehensive testing of the 41-item CRIS instrument. The formative phase focused on item content for the new measures (n=54). Questionnaires from potential vaccine trial participants (n=865) collected at multiple timepoints resulted in evaluation of scale reliability and validity (i.e., attitudes, behavioral and normative beliefs, perceived social support for clinical research participation, social norm compliance, perceptions of the clinical research organization, and perceived relevance of the research endeavor).

**Results**—Qualitative testing revealed adequate comprehension and content validity of the initial item set. The subjective norms domain (n=3) initially exhibited poor internal consistency in pilot testing (Cronbach's  $\alpha = 0.525$ ), yet rewording of the items resulted in consistently stable measurement improvement (Cronbach's  $\alpha = 0.850$ ). Each of the CRIS subscales demonstrated extremely high reliability, ranging from 0.734 – 0.918. Confirmatory factor analysis verified item-factor relationships and determined construct and convergent validity (RMSEA=.068; CFI=0.835).

**Conclusions**—CRIS is a reliable instrument for measuring community attitudes toward participation in biomedical research studies. Results of this study support the use of these scales to recruit diverse populations to clinical trials.

### Keywords

HIV Psychometrics; HIV Vaccines; Patient Selection; African Americans; Women

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## Introduction

The achievement of diverse participation in clinical trials is critical to the attainment of new therapies and prevention products [1,2]. Although evidence exists on underrepresentation of specific groups in clinical studies [3,4], there is a dearth of information on how communities become engaged in clinical research and on the development of tools to systematically measure public opinion [5–8]. Moreover, little attention has been given to theoretically-driven measurement of social and network-level factors that may influence study recruitment [2,9].

Important policies have been implemented to address inclusion of underrepresented groups in research [10]. For example, studies funded by the United States National Institutes of Health (NIH) are subject to the 1994 mandate specifying inclusion of women and minorities in sponsored research [11–15]. Despite support for the community engagement in clinical studies, the development of psychometric measures to assess acceptability of clinical research has not been the focus of empirical investigations. We were able to locate two studies that conducted psychometric analyses to assess willingness-to-participate among minorities [16,17]. Yet, we were unable to locate any valid and reliable instruments that measure predisposing attitudes, perceptions, and beliefs toward clinical research participation that can be administered in a variety of field settings, and that are appropriate for diverse populations.

Our previous findings indicated that constructs from established behavioral theory including the Theory of Reasoned Action (TRA) may be useful in predicting clinical trial involvement among African Americans [18]. Among racial and ethnic minorities, willingness-to-participate extends beyond reasoned appraisal of the research endeavor (i.e., perceived benefit of a new product to self and community) to affective considerations (i.e., trust in researchers) [19–21]. Previous studies of minorities' clinical trials participation and other forms of elective health behaviors (i.e., bone marrow donation) suggest that decisional pathways are complex and have strong emotional components [7,22,23]. Although participation of women and minorities in research may be hindered by many issues, there are factors that may facilitate greater involvement of those who may not have considered participating in clinical trials [19,21,24,25]. Favorable appraisal of the clinical research organization and its community interactions, demonstrated respect for study participants, and other organizational attributes may serve as motivators for minorities to participate in studies [26–29].

We developed and evaluated our measures to specifically understand the factors driving community participation in HIV vaccine research, as it is generally more difficult to accrue study volunteers in this field compared to other types of clinical research [30,31]. Under these rigorous conditions, our study sought to identify the predictive validity of the CRIS instrument to gauge participatory intentions of those whose involvement is needed.

## Methods

### Study design and sample

There were five waves of recruitment for this study spanning from March 2007 to January 2008 resulting in a sample of 919 participants. A convenience sample of 54 individuals from a community-based HIV educational event, the “African American Outreach Initiative,” participated in the formative phase of this study (phase one). This two-day annual forum focuses on HIV/AIDS education tailored to the needs of African Americans. This event provided an opportunity to test the preliminary instrument for length acceptability and to

assess any potential literacy challenges that could have contributed to nonresponse bias in the absence of this pilot testing process.

In subsequent phases, a venue-based sampling strategy was utilized for recruitment to occur during randomly selected blocks of time. This method has proven successful in obtaining representative populations in cross-sectional survey samples [32]. Our target populations included those whose participation is sought in HIV vaccine research including men-who-have-sex-with-men, transgender persons, and minority women. Venues were selected by study staff and partner agencies that hosted HIV vaccine-related functions in these settings. The study staff determined venue suitability based upon discussions with agency staff, target population observation at the locations, and other considerations (e.g., safety). Project assistants performed recruitment and data collection based on a master schedule of monthly activities. The sampling frame included 28 locations including churches, bookstores, educational forums, health fairs, community meetings, and special events such as Pride festivals that demonstrated the potential to recruit an adequate number of participants within identified timeframes.

Study settings were located throughout metropolitan Atlanta, Georgia. Persons were eligible for this study if they were  $\geq 18$  years of age and could read and speak English. Approximately 1,100 people were invited to participate and 919 provided written informed consent (response rate =84%). A health promotion incentive was offered for participation. The Emory University Institutional Review Board approved the study protocol prior to study implementation.

## Procedures

The scale items were developed based on previous quantitative and qualitative research findings, literature review, and HIV clinical and community experience [27,33–38]. Qualitative research focusing on HIV trial issues among women and minorities was content analyzed to form the basis of questions regarding beliefs and attitudes [33,39,40].

New items were developed for most of the domains based on recommendations by TRA theory progenitors [41,42]. Variables included willingness to participate in clinical research, subjective norms, attitudes, motivations, and beliefs about engaging in clinical research. A team of clinicians, psychometricians, and behavioral researchers reviewed the instrument for adequacy of the measures.

## Scale Measures

The following briefly describes each CRIS domain. The CRIS inventories used the summative response format, a 5-point Likert scale (1-strongly agree to 5-strongly disagree), to assign meaningful values to an underlying continuum of ratings [43].

**Attitudes**—Much of the literature has focused on the importance of the attitudinal domain for study recruitment, looking at factors like negative attitudes toward health research, its role in the community, and the benefits arising from clinical study participation [5,29,40,44].

**Subjective Norms**—Participants were asked if they thought people, including family and friends, would support their participation. Favorable social opinion of research involvement is theorized to increase participatory intention.

**Behavioral Beliefs**—Beliefs about medical research favoring participatory behavior should increase intentions to become a study volunteer.

**Outcome Evaluations**—Issues related to HIV vaccine trial participation such as concerns related to time and trouble related to study participation, fear of needles, risk aversion, and potential problems arising from vaccine-induced seropositivity were measured by this domain.

**Normative Beliefs**—Participant beliefs about the effects of research on a community should influence subjective norms and participatory intentions.

**Motivation to Comply**—The theorized influence of family, friends, and others on behavioral performance will exert social pressure to act or engage in avoidance of performing the behavior (i.e., rejecting opportunity to become a study volunteer). Greater self-agency should lead to greater participatory intention.

**Organizational Involvement**—These items measure perception of the clinical research site and the extent to which persons identify with its research agenda. We adapted the items from marketing literature measuring “brand involvement” (i.e., engagement with entities producing consumer products) [45–48] and theorized their independent prediction or mediation on subjective norms and intentions [41,42].

**Personal Relevance of Volunteerism**—The marketing “involvement” construct is closely linked to values and interests, along with inherent needs [49]. We renamed consumer “involvement” as “personal relevance” which may exert influence on behavioral intention.

### Statistical Analysis

In the first phase, an exploratory factor analysis with varimax rotation was conducted with 51 items resulting in a 13-factor solution that explained 85.4% of overall variance. Factor loadings identified cognitive domains, low item communalities, and facets that could be enhanced in future iterations.

The second phase included a principal components factor analysis with varimax rotation resulting in an eight-factor solution. Reliability estimates were obtained for all CRIS factors. We determined that a Cronbach alpha reliability estimate of  $\geq 0.70$  would support reliability of each CRIS subscale [50–53].

Lastly, we included a check for multicollinearity followed by confirmatory factor analysis. Bivariate correlations were computed for all indicators as a first step in factor structure validity. This study included a confirmatory factor analysis of measurement fit to establish the components of the factors by estimating the strength of the relationships between indicators and constructs with 486 complete cases that did not contain any missing outcome data (i.e., intention to become an HIV vaccine study volunteer) [54]. One indicator per construct was fixed to define the scales of the indicators. An *a priori* alpha level was set at  $p < .05$  for all factor patterns.

This study generated fit indices for the measures. A chi-square statistic was produced along with the Standardized Root Mean Square Error of Approximation (RMSEA). Values less than 0.08 are acceptable [43]. We also used the comparative fit index (CFI) as an ideal measure in structural equation modeling research [43]. CFI good fit guidelines suggest that a good fit is  $> 0.90$ , an adequate/marginal fit is 0.80 to 0.90 [43,55].

## Results

### Subjects

Table 1 details population characteristics by testing phases. The population characteristics were similar for phases two and three with the exception of gender ( $t=2.3$ ,  $p=.022$ ) and age ( $t=5.77$ ,  $p<.001$ ). The first AAOI sample was demographically different than the other venue-recruited samples except for age ( $t=1.28$ ,  $p=.205$ ). The similarities between the other two samples ensured stability of scale estimates which were remarkably consistent across all phases.

### Phase One: Formative Phase

The first instrument was tested with participants of the “African American Outreach Initiative” in March 2007 to assess item phrasing and respondent understanding. Study staff was available to answer any potential inquiries and were instructed to catalogue participant comments for instrument evaluation. The questionnaire Flesch Reading Ease (62.7) and Flesch-Kincaid (6.8) scores were acceptable, corresponding with a 6 – 8<sup>th</sup> grade reading level fluency [56].

In this first phase, participants ( $n=54$ ) completed a questionnaire that included 75 questions inclusive of CRIS scale items. The formative results indicated difficulty with questionnaire completion given participant fatigue and time constraints; therefore, the resulting questionnaire reduced scale items to 41 from the original 51 items.

### Phase Two: Pilot Phase

The second phase of data collection occurred from May 2007 to July 2007. Two study team members evaluated the merit of each item and made changes to the instrument. We were able to reduce the reading level (6.7) and reading ease (61.8) scores. The completion time was also reduced from 25 minutes to  $\leq 20$  minutes.

The results indicated that, with the exception of "subjective norms" (Cronbach's  $\alpha = 0.525$ ), the reliabilities of the initial subscales had moderate to high internal consistency (Cronbach's  $\alpha = 0.714$ –  $0.925$ ) (Table 3). Assessment of the "personal relevance" ( $n = 7$  items) resulted in the highest level of internal consistency among scales (Cronbach's  $\alpha = 0.925$ ). Item total correlations ranged from 0.708 to 0.811. Construct validity was assessed for the "personal relevance" scale and the subsequent factor analysis confirmed the unidimensional nature of the measure, with a distinct factor of 7 items that explained 70% of the variance in the data.

### Phase Three: Instrument Validation

**Reliability Analysis**—Phase three data ( $n=653$ ) was analyzed with three groups, to examine if reliability measures for the 41 items held constant among similar samples and over different time periods. In this phase we were able to gather a more representative age-eligible population of potential study participants for HIV vaccine studies (mean age = 35.9 years) as the studies typically enroll those ages 18 to 50 years. This population more reasonably approximated a pool of study-eligible volunteers. Each of the 8 scales demonstrated strong reliabilities, with standardized Cronbach's alpha statistics that ranged from 0.734 to 0.918. After rewriting the subjective norms items, reliability increased from 0.525 to 0.851. Personal relevance exhibited the strongest reliability over time with consistent alpha values of 0.912 to 0.927. When the total sample was analyzed, the standardized Cronbach's alpha reliabilities ranged from 0.734 to 0.918. Examination of the subsets of women and minorities resulted in similar alphas for these groups (0.754 to 0.920).

**Measurement Model Testing**—Bivariate correlations were computed for factor structure validity. A subsequent check of factor correlations validated the unidimensionality of each domain. Correlations of the eight factors' composite scores indicated that multicollinearity was not a concern for individual items or the factor structure with the intercorrelation threshold set at  $\geq 0.85$  [57]. The subset included in the model testing (N=486) was remarkably similar to the larger sample (N=657) on all demographic characteristics (e.g., gender:  $\chi^2_{(3)}=3.94$ ,  $p=.268$ ; race:  $\chi^2_{(1)}=.993$ ,  $p=.334$ ).

Factor analysis results support the validity of the constructs. Loadings were consistent with most items in the range of  $\geq .448$  to  $\leq .867$ . The only low factor loading ( $\leq .50$ ) was the attitude measure of HIV being a serious community concern (Table 3). The confirmatory factor analysis results showed an acceptable model fit to the data (RMSEA = .068; CFI = 0.835) demonstrating construct validity.

## Discussion

This study applied six concepts of the Theory of Reasoned Action in addition to two adapted scales to assess individual readiness for clinical research. Specifically, we uncovered important pathway effects that favor diverse community participation in HIV vaccine research. Although we assessed broader clinical trial concerns such as health issue relevance and concerns about peer perceptions in this study, it is important to note that we also assessed aspects that are relevant to healthy, uninfected persons' decision-making on participation in HIV vaccine trials (e.g., vaccine-induced seropositivity). Understanding the critical factors that promote women and minorities' engagement in this type of clinical research is an important step in the formulation of community engagement efforts. Measuring community sentiment over time will enable study teams to develop tailored programs that hone in on contextual issues to facilitate timely recruitment.

Phase one demonstrated the steps in an effective instrument development process. The second phase was useful in developing the factor structure and gauging preliminary reliability estimates. The final Clinical Research Involvement Scales (CRIS) consist of 41 items that exhibit good internal consistency ( $\alpha$  range = 0.730–0.917). This instrument provides a tool to further explore the personal and socio-community factors that promote community engagement in clinical research with healthy persons.

## Study Limitations and Strengths

This theory-based instrument provides multidimensional measures of factors that affect willingness-to-participate in health studies. Construct validity was established for the domains associated with trial participation. The information obtained from the CRIS can help community educators, outreach staff, and study investigators establish evidence-based priorities for community engagement activities and therefore design more effective and efficient programs in a variety of field settings.

We acknowledge the limitations in this study. The instrument would benefit from further reliability testing. The design of this study did not allow for test-retest reliability. Further replications with different populations other than lower-income Southern populations should be conducted. CRIS should be adapted for use outside of the realm of HIV biomedical prevention field in order to confirm the factor structure found in our analysis. Predictive or criterion validity was also not tested given the lack of instrumentation available in this arena.

## Conclusions

The CRIS is a reliable and valid questionnaire for measuring multiple psychosocial determinants of study participation unique to clinical research. Development of this instrument will encourage and enable further evaluation efforts of community efforts to promote biomedical research, in addition to providing a model for other community engagement measures.

### What is New?

#### Key Finding

The "Clinical Research Involvement Scales" (CRIS) instrument is a reliable and valid questionnaire for measuring multiple determinants of study participation for clinical research. This study builds upon what is known about clinical trial recruitment challenges and the factors contributing to underrepresentation of specific groups in clinical studies by offering a measurement tool to systematically assess willingness-to-participate in clinical research.

#### What is the Implication

The CRIS questionnaire enables researchers to measure the likelihood that individuals will participate in clinical research studies.

#### What Should Change Now

Use of this questionnaire will help community educators, outreach staff, and investigators establish evidence-based priorities for community engagement activities and therefore design more effective and efficient recruitment programs.

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**Table 1**

Multiphased Development of the Clinical Research Involvement Scales, Atlanta, Georgia, 2007–2008 - Participant Demographics (N=919)

	<b>Phase I (n=54) (Total %)</b>	<b>Phase II (n=212) (Total %)</b>	<b>Phase III (n = 653) (Total %)</b>
<b>Age</b> (mean age)	43.9 years	41.7 years	35.9 years
18–29	6 (12.2)	42 (19.8)	228 (36.0)
30–39	7 (14.3)	51 (24.1)	159 (25.1)
40–49	22 (44.9)	45 (21.2)	157 (24.8)
50–59	12 (24.5)	52 (24.5)	71 (11.2)
60 and over	2 (4.1)	12 (5.6)	18 (2.8)
<b>Gender</b>			
Male	30 (58.8)	63 (30.6)	267 (41.5)
Female	21 (41.2)	142 (68.9)	366 (56.8)
Transgendered: M→F	0 (0.0)	1 (0.5)	7 (1.1)
Transgendered: F →M	0 (0.0)	0 (0.0)	4 (0.6)
<b>Race</b>			
White	5 (9.8)	66 (32.2)	177 (28.0)
Non-white	46 (90.2)	139 (67.8)	486 (72.0)
<b>Ethnicity</b>			
Asian/Asian-American/Pacific Islander	1 (2.0)	5 (2.5)	31 (4.9)
Hispanic/Latino/Chicano	3 (5.9)	6 (2.9)	19 (3.0)
African-American/Black	42 (82.4)	120 (58.8)	362 (56.7)
Caucasian/White	3 (5.9)	56 (27.5)	170 (26.6)
Native American/American Indian/Alaskan Native	1 (2.0)	2 (1.0)	4 (0.6)
Multiracial/Multicultural	1 (2.0)	15 (7.4)	52 (8.2)
<b>Sexual Orientation</b>			
Straight (heterosexual)	25 (49.0)	128 (61.5)	406 (62.8)
Lesbian, Gay, Bisexual, Queer, Questioning (LGBTQQ)	26 (51.0)	80 (38.5)	240 (37.2)
<b>Educational Attainment</b>			
K-12 grade	23 (46.0)	53 (25.8)	201 (31.3)
Technical/Vocational/ Associates	13 (26.0)	42 (20.5)	154 (24.0)
Bachelor	4 (8.0)	60 (29.3)	172 (26.7)
Master's	10 (20.0)	39 (19.0)	79 (12.3)
Doctorate	0 (0.0)	11 (5.4)	37 (5.8)
<b>Household Income</b>			
Less than \$40,000	35 (77.8)	99 (49.0)	340 (53.6)
\$40,001– \$60,000	5 (11.1)	42 (20.8)	114 (18.0)

	<b>Phase I (n=54) (Total %)</b>	<b>Phase II (n=212) (Total %)</b>	<b>Phase III (n = 653) (Total %)</b>
\$60,001– \$80,000	3 (6.7)	27 (13.9)	76 (12.0)
\$80,001– \$100,000	1 (2.2)	18 (8.9)	36 (5.7)
Over \$100,000	1 (2.2)	15 (7.4)	68 (10.7)

**Table 2**  
Clinical Research Involvement Scales (CRIS) Reliability Measures from Final Testing Phase Groups, Atlanta, Georgia, 2007–2008 (N=653)

	Attitudes	Behavioral Beliefs	Outcome Evaluation	Subjective Norms	Normative Beliefs	Motivation to Comply	Organization Involvement	Personal Relevance
Items (n)	5	7	5	3	6	5	3	7
<i>Group 1: N = 221</i>								
Cronbach's $\alpha$	.675	.839	.854	.825	.785	.865	.822	.914
Standardized $\alpha$	.675	.838	.856	.827	.789	.866	.822	.915
<i>Group 2: N = 205</i>								
Cronbach's $\alpha$	.731	.846	.787	.851	.791	.825	.767	.912
Standardized $\alpha$	.737	.849	.791	.854	.792	.825	.766	.912
<i>Group 3: N = 227</i>								
Cronbach's $\alpha$	.764	.867	.769	.871	.768	.753	.739	.926
Standardized $\alpha$	.768	.869	.774	.870	.775	.757	.738	.927
<i>Total: N = 653</i>								
Cronbach's $\alpha$	.730	.851	.810	.850	.782	.822	.797	.917
Standardized $\alpha$	.734	.852	.812	.851	.784	.823	.797	.918

Descriptive Statistics for Factor Scales, Factor Loadings, Alpha Reliability Estimates, and Subscale Items for Study Enrollment Intention, Atlanta, Georgia, 2007 (n = 486)

Table 3

Factor	Mean	SD	Min	Max	Factor Loading
<i>Behavioral Beliefs</i> ( $\alpha = 0.858$ )					
1. My community would really benefit from (an HIV vaccine).*	1.505	0.775	1.00	4.00	.526
2. My actions can inspire other to act.	1.805	0.762	1.00	4.00	.666
3. My participation in a (HIV vaccine) study would be very good.*	2.079	0.884	1.00	4.00	.784
4. I benefit from health science research.	1.677	0.772	1.00	4.00	.555
5. My involvement in this cause will result in more ethical research.	2.063	0.870	1.00	4.00	.763
6. My involvement in this cause will improve my community's trust in medical research.	2.100	0.905	1.00	4.00	.777
7. I would participate in a (HIV vaccine) research study because it would help to prevent (AIDS).*	2.036	0.988	1.00	4.00	.707
<i>Outcome Evaluation</i> ( $\alpha = 0.820$ )					
1. My participation in a (HIV vaccine) research study would be more trouble than it's worth.*	2.482	1.136	1.00	5.00	.754
2. Even if I wanted to participate in a (HIV vaccine) research study, I just don't have the time.*	2.857	1.124	1.00	5.00	.692
3. Participating in a (HIV vaccine) research study seems risky.*	2.893	1.216	1.00	5.00	.774
4. I would participate in a (HIV vaccine) research study, but I don't like needles.*	2.810	1.270	1.00	5.00	.575
5. I am concerned that a (HIV vaccine) would cause me to test positive for (HIV).*	2.492	1.301	1.00	5.00	.680
<i>Normative Beliefs</i> ( $\alpha = 0.795$ )					
1. I think my doctor would approve of my involvement in (HIV vaccine) research.*	2.283	0.903	1.00	4.00	.540
2. I think my work colleagues would approve of	2.338	0.905	1.00	4.00	.602

Factor	Mean	SD	Min	Max	Factor Loading
my involvement in this cause.					
3. My immediate family is supportive of my involvement in (HIV vaccine) research.*	2.595	0.851	1.00	4.00	.715
4. Most people important to me think my involvement in (HIV vaccine) research is good.*	2.431	0.843	1.00	4.00	.793
5. Most people important to me usually support my interests.	1.883	0.715	1.00	4.00	.563
6. If my pastor supported (HIV vaccine) research, I would be inclined to get involved.*	2.640	0.893	1.00	4.00	.590
<i>Motivation to Comply</i> ( $\alpha = 0.840$ )					
1. I tend to be concerned about what people think of me, even if I don't know them.	2.381	1.214	1.00	5.00	.779
2. I generally do what my family expects of me.	2.787	1.249	1.00	5.00	.643
3. I would not want to do something my friends disapproved of.	2.455	1.150	1.00	5.00	.756
4. If my superiors told me to do something I disagreed with, I would obey their wishes.	2.448	1.125	1.00	5.00	.646
5. Sometimes I do what my friends say to do, even though I know they are wrong.	2.104	1.078	1.00	5.00	.760
<i>Attitudes</i> ( $\alpha = 0.736$ )					
1. I like to do good for others.	1.373	0.591	1.00	4.00	.548
2. I like getting involved with (HIV vaccine) research.	2.194	0.907	1.00	4.00	.691
3. (HIV) is a serious concern in my immediate community.*	1.673	0.877	1.00	4.00	.448
4. (HIV) testing is a benefit of a (HIV vaccine) study.*	1.661	0.762	1.00	4.00	.578
5. I would benefit from the medical care associated with a (HIV vaccine) study.*	2.107	0.988	1.00	4.00	.624
<i>Subjective Norms</i> ( $\alpha = 0.842$ )					
1. Most people who are important to me think I should participate in the (HIV vaccine) effort.*	2.693	0.857	1.00	4.00	.710
2. Most people who are important to me would	2.271	0.857	1.00	4.00	.867

Factor	Mean	SD	Min	Max	Factor Loading
approve of my involvement in this cause.					
3. Most people who are important to me would support my interest in this cause.	2.135	0.857	1.00	4.00	.833
<i>Organization Involvement</i> ( $\alpha = 0.812$ )					
1. Being active with the (clinical research site) would help me to express who I am.*	2.589	0.807	1.00	4.00	.801
2. Hearing that somebody else is involved with the (clinical research site) tells me a lot about that person.*	2.474	0.827	1.00	4.00	.773
3. Others would view me favorably if I volunteered for a study at the (clinical research site).*	2.571	0.788	1.00	4.00	.726
<i>Personal Relevance</i> ( $\alpha = 0.921$ )					
1. Being involved with the (clinical research) site helps me to feel empowered.*	2.531	0.798	1.00	4.00	.758
2. I experience a sense of community in this cause.	2.233	0.778	1.00	4.00	.845
3. I feel a sense of belonging through my participation in this effort.	2.428	0.792	1.00	4.00	.829
4. My involvement is helping to protect the rights of others.	2.218	0.794	1.00	4.00	.781
5. I am advancing the public's health and well-being through my support of this cause.	2.089	0.758	1.00	4.00	.754
6. Getting involved in the (HIV vaccine) effort is liberating.*	2.461	0.807	1.00	4.00	.772
7. I feel a sense of purpose in this cause.	2.131	0.766	1.00	4.00	.801

\* study topic, health issue, clinical research site names may be substituted on these items