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Personality and intimate partner aggression in Gorakhpur, Uttar Pradesh, India

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PERSONALITY AND INTIMATE PARTNER AGGRESSION IN GORAKHPUR, UTTAR PRADESH, INDIA

by

Leigh Allison Sharma

An Abstract

Of a thesis submitted in partial fulfillment of the requirements for the Doctor of Philosophy degree in Psychology (Clinical Psychology) in the Graduate College of The University of Iowa

December 2011

Thesis Supervisor: Professor Emeritus Lee Anna Clark

ABSTRACT

The goals of the study were threefold: to examine, in a sample of Hindi-speaking Indian women, (1) the internal consistency reliability and psychometric validity of a broad assessment of intimate partner aggression (IPA) that previously has been used in multiple languages in the public-health domain; (2) the extent to which the trait structure of a widely used personality measure conforms in this sample to the personality structure that has been found in many other cultural and geographic groupings and across many languages; and (3) relations between personality traits and the experience of IPA, including physical, psychological and sexual IPA. A sample of rural, north Indian women were recruited and asked to complete several psychological measures, including one of personality and one of their experience as a recipient of IPA. The data suggest that the structure of IPA, but not personality, in this sample is consistent with that commonly found in western samples. Reasons for the lack of replication in personality structure are discussed. Nonetheless, the relations between personality and IPA domains found in this sample suggest that personality is related to these women's experience of IPA, but in ways that differ somewhat from western samples.

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Thesis Supervisor

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CERTIFICATE OF APPROVAL

PH. D. THESIS

This is to certify that the Ph. D. thesis of

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has been approved by the Examining Committee for the thesis requirement for the Doctor of Philosophy degree in Psychology (Clinical Psychology) at the December 2011 graduation.

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CHAPTER I. STUDY 1: INTRODUCTION

Cross-cultural comparative psychological research is intended to generate knowledge about universal versus specific psychological processes, often using assessments developed by American and/or western European researchers with non-American, non-western-European participants (Matsumoto & Yoo, 2006). Some researchers, however, have argued that this type of research is "culture-bound, value-laden and [possesses] limited validity" (Kim, Yang & Hwang, 2006, p. 4), which necessitates the development of new psychological approaches that explicitly consider the context of psychological phenomena, allowing for a more nuanced and measured view of these processes.

In contrast to cross-cultural comparative research, indigenous psychological research, such as what is known as "native anthropology," aims to measure psychological phenomena from the perspectives of specific geographic, ethnic and/or cultural groups using theories, concepts, hypotheses, and instruments generated by and for those within the group (Yü, 2006). In other words, indigenous psychology investigates psychological phenomena in specific contexts, which are incorporated into the research design (Kim et al., 2006). The distinction between these two approaches is often referred to as etic (non-native, nomothetic, generally applicable) versus emic (native, idiographic, specifically applicable); some researchers have argued that bridging this gap and reconciling the two approaches is a necessary next step in culturally relevant psychological research, requiring the "enactment of hybridity" (Narayan, 1993, p. 671).

Others have stated that, in reconciling these approaches, *indigenous* psychology increasingly has become *indigenized* psychology (psychology specific to one, usually

western, culture made more appropriate to another, usually non-western culture; Yü, 2006). These researchers describe the indigenization process as one in which a non-native psychological theory and/or methodology is transformed to become appropriate to the new context through four stages: importation, implantation, indigenization, and perpetuation of the new discipline through the training of new scientists (Adair, 1999; Kim et al., 2006). The ultimate goal of this type of research is "transformation of the imported discipline into a mature, self-sustaining scientific discipline addressing the needs of the country and culture" (Adair, 2004, p. 1). In other words, indigenized psychology seeks to distinguish the portion of an imported psychological theory, construct or measure that can be retained and the portion that needs adapting or indigenizing.

It is important to acknowledge that the extent of adapting or indigenizing likely is not universal across countries or even population groups within a country, making necessary a careful study of psychological phenomena within, as well as between, countries (Adair, 2006). It also is critical for researchers to avoid investigating what they consider 'culturally unique' constructs and processes without first considering (1) how commonly they occur, (2) how they integrate with other phenomena, and (3) how meaningful they are to individuals within the sample under consideration (Adair, 2006). In short, studies from an indigenous or indigenized perspective require careful forethought and consideration of how both the variable and the population under study are conceptualized and defined in the research design.

To that end, it is worth considering briefly the construct of "culture" and how it is defined in the current study. Culture commonly is considered a homogenous entity

composed of beliefs and values shared, adhered to, and perpetuated by individuals within it. However, many anthropologists and some psychologists have argued convincingly that culture can be understood better as unbounded by geography or politics, fluid, and open to change; they also argue that the development of culture is a dynamic process (Kim et al., 2006; Merry, 2006). Further, culture and cultural practices often include ideas and institutions that are contested by members within the culture and can be used as a vehicle in competitions over power (Merry, 2006). As such, conversations about cultural practices need to take into account the broad context, so the understanding of these practices can change as the cultural context that produced them changes. Merry (2006) also has argued that one must consider who speaks for a particular culture, defined in the more traditional sense. Individuals of diverse backgrounds likely have very different experiences of a given "culture," regardless of whether they come from the same geographic location and political, educational or social sphere. As such, it is best to be as specific as possible when defining and conceptualizing a sample under study in order to be clear about the extent to which findings may or may not generalize to a broader context.

Finally, cross-cultural researchers must balance the potentially necessary modification of theory and/or method with maintaining sufficient similarity to the original theory and/or methodology to allow for cross-cultural comparison (Clark, 1987). In other words, scientists must avoid both viewing the imported approach as an indigenous or indigenized one simply for the sake of maximally adhering to the original theory and/or methodology, and also being so sensitive to indigenous views that the adapted approach departs too far from the original, making cross-cultural comparison

invalid. The ideal approach to indigenizing a theory and/or method, then, allows for sufficient similarity to the original theory and/or construct to allow for comparison while simultaneously incorporating culture-specific variance (Rogoff, 2003).

The studies conducted for this thesis approach the issues of personality and domestic violence or intimate partner aggression (IPA) from the perspective of indigenized psychology and begin to address stages one and two of the indigenization process. I seek to import an American measure of personality and a western measure of IPA to India for use with a rural, north Indian sample of women from the villages around Gorakhpur, Uttar Pradesh, India. I then seek to understand the extent to which the pattern of results obtained with these instruments in this sample is consistent with results obtained with these measures in other linguistic, geographic, ethnic and cultural groupings, versus demonstrate variance specific to this sample. Considerable sample-specific variance would suggest that these measures might require further adaptation or indigenization for future use in similar samples.

Before describing the studies, I review relevant previous research in three steps. First, I review definitions of IPA proposed by American and western European psychological researchers and Indian researchers, with the goals of understanding similarities and reconciling differences. Based on this review, I hypothesize that the construct of IPA, as defined by these two groups of researchers, shares fundamental similarities and that the importation of a western measure of IPA may assess the phenomenon defined by Indian researchers adequately. Second, I consider the cross-cultural and cross-linguistic applicability of the Five-Factor Model of Personality (FFM), paying particular attention to the investigation of this model in Indian samples, and I

hypothesize that the model will generalize to the sample used in the present study. Third, I review research on relations between a woman's personality and her experience of being the target of IPA. To date, the literature on these last links is minimal. As such, the study described below, undertaken to examine these relations in a sample of married women from North India, is intended (1) to demonstrate the potential utility of the study's personality and IPA measures in an Indian sample, (2) to offer further evidence for the links between these two constructs, and (3) to begin the indigenization process for these personality and IPA measures to Gorakhpur, Uttar Pradesh, India.

This study is intended to address the second step in the indigenization process, specifically: importation. To import a measure, one first must investigate whether the patterns of results obtained with that measure in the target sample are consistent with results obtained in other linguistic, geographic, ethnic and cultural groupings. With regard to the present study, to be relatively confident that there is a consistent structure of both IPA and personality in western research, it is important first to demonstrate agreement among researchers with regard to the components of these constructs, and then to ensure that the measures used to assess these constructs are psychometrically reliable and valid. If these measures are psychometrically sound and produce a consistent structure, there will be a 'baseline' structure to which the results obtained in the married Indian female sample can be compared. Deviations from this structure then potentially may be considered meaningful and suggest that adaptation or indigenization of this measure may be necessary.

Domestic Violence and Intimate Partner Aggression in Western Research

Definitions and Conceptualization

Domestic violence (DV) and IPA have been described variously in American and other western research. In early research, DV was conceptualized narrowly as any act performed with the intention or perceived intention of causing pain or injury to another (Straus, 1979). This narrow definition subsequently was broadened to include threats of, attempted, or completed behaviors that were likely to cause physical injury or pain (Weis, 1989). Still later definitions took into account perpetrators' intentions, defining DV as "the acts a husband [sic] directs toward his wife which are intended, or are perceived as being intended, to physically or psychologically harm his wife, or coerce her without regard for her rights" (Rodenburg & Fantuzzo, 1993, p. 206). Even more recently, researchers have expanded the DV definition by arguing that DV need not be restricted to husband-wife partners, nor to husbands' behaviors directed towards their wives, but instead can exist within any intimate relationship and thus is better labeled IPA than DV; these researchers also argued that certain parameters within IPA (e.g., types, severity, frequency, and meaning of potentially abusive behaviors) also should be explored (Hegarty, Sheehan & Shonfeld, 1999).

Among the most comprehensive definitions of the IPA construct is that proposed by the Centers for Disease Control (CDC; Saltzman, Fanslow, McMahon & Shelley, 2002), which argues for four main types of IPA that can exist in any intimate relationship: (1) *Physical violence* is the intentional use of physical force with the potential for causing death, disability, injury, or harm. (2) *Sexual violence* includes (a)

the use of physical force against unwilling individuals to force, or try to force, them into a sexual act, (b) attempted or completed sexual acts against individuals unable to understand the act, who decline to participate in the act, or communicate that they are unwilling to participate and (c) abusive sexual contact. (3) *Threats of physical or sexual violence* include both verbal threats and threats with a gesture or weapon that communicate the intent to do violence. And (4) *psychological/emotional violence* includes trauma as a result of violent acts and threats of acts or coercive tactics; the CDC definition also stipulates that this violence often occurs in the context of a relationship currently and/or previously characterized by physically or sexually violent threats or acts.

In this review, I use the term IPA to refer to both DV and IPA, unless otherwise noted. However, it is important to acknowledge that not every aggressive or violent behavior (Hegarty et al., 1999) nor psychologically aggressive act (Ro & Lawrence, 2007) is conceptualized by given measures as necessarily constituting IPA (e.g., Composite Abuse Scale; CAS; Hegarty et al., 1999). For example, some authors have noted that the acts included in their measures are only psychologically aggressive if they take place within the context of a relationship characterized by physical aggression (Shepard & Campbell, 1992), similar to the distinction made above in the CDC definition of psychological IPA.

In recent years, western IPA researchers have shifted their focus from examining the core construct of IPA behaviors to more nuanced interpretations and explanations of the IPA environment. Among the more frequently addressed aspects of this environment are the psychological consequences of IPA (e.g., Arias, Lyons & Street, 1997), female targets' responses to IPA (e.g., Dutton, Goodman & Bennett, 2001), trajectory of change

in IPA (e.g., Lawrence & Bradbury, 2007), effects of mediating and moderating variables on IPA (e.g., Leonard & Roberts, 1998), personality predictors of IPA perpetration (e.g., Langer & Lawrence, 2008), cross-cultural aspects of IPA (e.g., Kim, Park & Emery, 2009) and IPA targets' perception of IPA (e.g., Winstok & Perkis, 2009).

For the field to progress to this point, it was necessary first to examine the IPA construct thoroughly. That is, this broad, contextual research developed based on a clear and consensual understanding of what behaviors are central to IPA, and on valid and reliable measures of this construct. As addressed later in this review, in contrast to the western consensus, psychological researchers in India currently do not share a common understanding of IPA behaviors, and there is no demonstrated psychometrically reliable and valid assessment of IPA in Hindi, the most commonly spoken language in India.

Measures

This review begins with an examination of the most frequently used IPA assessment instruments in western psychological research. It is restricted to female self-report, quantitative assessments of heterosexual, male-to-female IPA that examine specific and concrete acts of IPA and violence. Notably, it does not include measures of either targets' or perpetrators' understanding of the acts, perpetrators' intentions, or antecedents of or contexts in which the acts occurred. These selection criteria were used to focus on the *behavioral* acts that western researchers consider either integral or more tangential to the construct of IPA. This review is the first step in comparing the construct of IPA developed by western versus Indian researchers.

A cross-measure review is critical because an individual who experiences specific acts of IPA that are not included in a given instrument cannot be considered a

target of IPA according to that instrument (Waltermaurer, 2005). For example, as mentioned, until approximately the early 1990s, IPA measures solely addressed physically aggressive acts. However, later researchers acknowledged that this narrow definition excluded a great many individuals who were experiencing psychological or sexual IPA. By comparing across measures, it is possible to minimize the idiosyncrasies of each measure and determine which IPA acts are cited most frequently, and as such are most central to the IPA construct in western research.

It is important to note that some researchers integrally include the severity of IPA behaviors (e.g., which acts are considered moderately vs. mildly severe) as part of their definition, whereas others criticize such *a priori* distinctions, arguing that what is considered severe by the instrument may not be considered severe by the target (e.g., Smith, Smith & Earp, 1999; Waltermaurer, Ortega & McNutt, 2003). As this review is concerned with the acts themselves, not interpretations of these acts, I do not consider severity further, except for noting which measures specifically quantify IPA severity (e.g., Severity of Violence Against Women Scales; SVAWS; Marshall, 1992).

Most current, western, empirical measures of IPA include three facets: physical, psychological/emotional/verbal and sexual aggression. These facets are composed of core behaviors unique to each, but there also is wide variation in the operational definitions of these facets across measures. Researchers developed the specific lists of acts included in these measures in various ways, such as using behaviors (1) cited in the family violence literature (e.g., SVAWS), (2) considered abusive by expert opinion (e.g., Conflict Tactics Scales; CTS; Straus, 1979), (3) cited in Temporary Restraining Orders filed by clients in a program for abused women (e.g., Measure of Wife Abuse; MWA;

Rodenburg & Fantuzzo, 1993), (4) generated by targets of IPA to open-ended questions (e.g., Abuse Within Intimate Relationships Scale; AWIRS; Borjesson, Aarons & Dunn, 2003) and (5) drawn from qualitative assessment (e.g., Abusive Behavior Inventory; ABI; Shepard & Campbell, 1992).

Physical Aggression

Table 1 lists the physical IPA acts included in the most commonly used western measures of IPA; the measures are arranged from most to least recent publication date. Table 2 provides the percent of measures from Table 1 including each specific act (if included in more than one measure). Across measures, the most commonly included acts are kicked (88% of measures), slapped (88%), hit with object (75%), punched (75%), shoved (75%) and pushed (63%). However, some measures further refine these broad acts. For example, the Moderate Violence subscale of the SVAWS separates 'slapped' into 'slapped with palm of hand,' 'slapped with back of hand,' and 'slapped around face and head.' Moreover, it is noteworthy that these acts are not mutually exclusive, and the SVAWS allows multiple checks for the same behavior, meaning that one incident of physical IPA may result in a respondent checking both 'slapped with palm of hand' and 'slapped around face and head.'

Given the overlapping nature of the SVAWS items, a deeper investigation of the scoring procedures of this measure is warranted. The SVAWS is scored on a four-point Likert-type scale; the respondent indicates how often their partner has performed the behavior in the past 12 months, from never (1) to many times (4). The original SVAWS publication (Marshall, 1992) offers scoring weights based on the severity (physical and emotional impact) of each specific act, determined from student and nonstudent samples.

These weights are multiplied by the frequency of each act, and the weighted items are summed to yield subscale scores. Interestingly, the physical and emotional impact scoring weights for the three items mentioned above are significantly different ('slapped with palm of hand' = .767 and .894, 'slapped with back of hand' = .872 and .889, 'slapped around face and head' = .921 and .956, respectively, Marshall reported all *p*s < .001 across items). These data suggest that the severity of a slap may be determined more by where than how it was given.

Notably, the Severe Combined Abuse subscale of the CAS, the Injury subscale of the Revised Conflict Tactics Scales (CTS2; Straus, Hamby, Boney-McCoy & Sugarman, 1996), the Physical Abuse subscale of the ABI, and the Physical subscale of the Index of Spouse Abuse (ISA; Hudson & McIntosh, 1981) include items relevant to forced sexual acts or intercourse. It appears that in the early 1990s researchers began to include a sufficient number of items assessing sexual aggression in IPA scales to form a discrete sexual IPA subscale. Before that (e.g., ABI; ISA) only one or two items regarding these acts were included in the physical IPA subscales. The Injury Scale of the CTS2 is a notable exception to this trend, having been developed after the early 1990s, yet still combining items relevant to sexual and physical IPA in the same scale. The reason for this may be that the scale was intended to capture the consequences of all types of aggression, including physical and sexual aggression, and thus considers the two part of the same domain.

Further, the Severe Combined Abuse subscale of the CAS and the Physical subscale of the ISA each include items that may be more relevant to psychological IPA (e.g., controlling behavior and verbally abusive behavior). With regard to the CAS, its

authors (Hegarty, Bush & Sheehan, 2005) argue that women who are the target of at least one episode of Severe Combined Abuse either alone or in combination with other types of abuse may represent a distinct category of IPA. As such, the Severe Combined Abuse behaviors were grouped according to severity, and represent acts performed by perpetrators of this most severe type of IPA. In contrast, the ISA was developed using factor analysis, and three of the items included on the Physical subscale ('My partner screams and yells at me,' 'My partner acts like a bully towards me,' 'My partner frightens me') show significant cross loadings on the Nonphysical subscale, suggesting that they may be markers of both the Physical and Nonphysical subscales. Given that the constructs of physical and psychological IPA are moderately correlated, as discussed further below, such cross-loadings are expected. Thus, it appears that the non-exclusivity of physical IPA content in these measures is due either to the theoretical standpoint of the scale in question (e.g., injuries may result from many different types of IPA) or the method of empirical development used for the measure (e.g., factor analysis). Finally, the earlier measures demonstrate considerably more overlap in content than later measures, suggesting that researchers are moving toward developing more discrete physical, sexual and psychological scales and subscales.

However, despite the inclusion of some items perhaps more relevant to psychological or sexual IPA, Tables 1 and 2 demonstrate that certain acts of physical IPA are included consistently across western measures of this construct. These data support the ideas that there may be a consensus among western researchers as to the core of this construct, and that a comparison between this construct and the physical IPA construct developed by Indian researchers may offer insight into the indigenization of a physical

IPA measure to northern India. This point is considered further below.

Psychological Aggression

Table 3 lists the psychologically aggressive acts included in the most commonly used western measures of IPA, again arranged from most to least recent publication date. Table 4 offers a preliminary rational sorting of these acts into broad categories, and provides the average number of acts within these categories per measure, as well as the percent of measures that include at least one act from the given category. A measure may include several acts from each category and each act included is counted as one occurrence. It is possible that several of these categories could be collapsed into broader dimensions (e.g., Restricted Physically and Restricted Socially), but this will need to be determined through future research. For the purposes of this review, I adopted the conservative approach of only grouping acts that clearly belonged together.

Across measures, the most commonly cited acts are in the Belittled/Criticized category, with an average of 3.33 acts per measure from this category and 92% of measures including at least one such act. The most common types of insults included are those directed at the target's physical appearance and personal worth. The second and third most commonly included types of acts are Threatening Behavior (1.75 acts, 82% of measures) and Angry Behavior (1.92 acts, 64% of measures). Interestingly, although few measures included acts from the categories of Restricted Physically, Harassed and Betrayed, those measures that did include acts from these categories each included several acts. For example, only the CAS and MWA included acts from the category Restricted Physically, but the CAS included 4 acts and MWA included 6 acts.

As can be seen in Tables 3 and 4, the construct of psychological IPA is quite

broad. Among the least common, and thus presumably more tangential, aspects of psychological IPA in the measures reviewed are Harassed and Betrayed. Other measures include acts which, taken alone, may not be considered abusive. For example, the Test of Negative Social Exchange (TENSE; Ruehlman & Karoly, 1991) Interference subscale includes item content such as, 'distracted target when he/she was doing something important.' As stated previously, some IPA researchers argue that the acts included in these measures are only psychological IPA if performed within the context of a relationship characterized by physical IPA (Shepard & Campbell, 1992).

Researchers also have distinguished the construct of psychological IPA from negative communication patterns. Ro and Lawrence (2007) examined the CTS2 Psychological Aggression subscale, the Multidimensional Measure of Emotional Abuse (MMEA; Murphy & Hoover, 1999), and the TENSE in newlyweds (modified for use in romantic relationships). They found the correlations of these three measures with measures of negative communication among newlywed wives were moderate to moderately high: for the CTS2, MMEA and TENSE, respectively, *r*s = .38, .55 and .53 with Problem Solving Communication and .35, .45 and .51 with Affective Communication. These data suggest that the construct of psychological IPA, at least as instantiated in these three measures, is somewhat distinct, but not wholly independent, from negative communication. However, it also is important to acknowledge that this study used a relatively normative sample; the constructs of negative communication and psychological IPA may be more distinct in samples with higher levels of psychological IPA.

Tables 3 and 4 suggest that there are two types of psychological IPA scales: eight

measures are part of a larger IPA inventory (e.g., CAS Emotional Abuse) and four are specifically measures of psychological IPA (e.g., Follingstad Psychological Aggression Scale, FPAS). Importantly, with one exception per type (PMWI and CTS), all measures in Table 3 include at least one item from two of the top three most cited categories in Table 4. Further, both types of IPA measures have one or more measures with at least one item from all of the top three most cited categories (e.g., CTS2 and MMEA). The two inventories that have only one item across the top three categories are among the oldest psychological IPA scales developed, and one (the CTS) has been updated and refined since its original publication. Finally, of the categories outlined in Table 4, there are no categories whose items come exclusively from the stand-alone psychological IPA measures; in contrast, the categories of Restricted Physically, Harassed and Suicidal/Self-Harming Behaviors draw content from the subscales of broader IPA measures alone.

Taken together, these data suggest that despite the exclusivity in content of those measures developed specifically to assess psychological IPA, these measures are neither broader nor better able to assess the core acts of the psychological IPA than the subscales of a broader IPA measure. Further, neither the date of publication nor the number of psychological IPA subscales included in the measure affects the broadness of content assessed by the scale or subscale. There appears to be no consistent reason for measures to include or not include specific acts except for (a) the method used to select items (as described earlier; e.g., cited in the family violence literature) and (b) the theoretical approach taken to develop the measure (e.g., the TENSE assesses more verbal than nonverbal behavior; the SVAWS assesses primarily threatening behavior), both of which vary markedly across measures. Regardless, there is a core set of acts included in almost

all measures, and these acts together may be considered to form the core of the psychological IPA construct.

Sexual Aggression

Table 5 lists the sexually aggressive acts included in the most commonly used measures of IPA arranged, as before, from most to least recent publication date. Table 6 provides the percent of the measures from Table 5 including each specific act, for acts that are included in more than one measure. Across measures, the acts fall into two broad categories: sexual acts and coercive sexual methods. The most commonly included sexual acts are forced sexual intercourse (71% of measures), forced fondling (43%), forced sex with an object (43%) and forcibly inserting foreign objects into target's vagina (43%). However, like the physical IPA acts described above, some measures specify acts to a much greater detail than others. The two most detailed measures are the Sexual Experiences Survey (SES; Koss et al., 2007) and the Coercive Sexuality Scale (CSS; Rapaport & Burkhart, 1984). Unsurprisingly, these two are measures of sexual aggression alone, as opposed to a subscale of a broader IPA measure. Among the less common acts addressed are those included in the MWA (e.g., 'cut pubic hair,' 'prostituted,' 'forced sex with animals'). Recall that the MWA was developed using acts drawn from Temporary Restraining Orders filed by abused women, and thus may represent very infrequent, severe acts.

Coercive sexual methods, beyond pressuring (57% of measures) and threatening (29% of measures), are unique to the SES. Many of the methods included in this measure are similar to the psychological IPA acts listed in Tables 3 and 4. Specifically, the SES includes lying, showing displeasure, criticizing sexuality/appearance and getting angry,

although in responding to the SES, these behaviors are to be considered only when performed in connection with sexual IPA. Nonetheless, these behaviors may be part of a broader pattern of behavior that is not limited to this context. That is, perpetrators who use these methods in connection with sexual IPA also may be likely to use these behaviors outside of sexual IPA and to perpetrate psychological IPA against their partner. At least one study offers preliminary support for this hypothesis, linking sexually coercive behaviors to an index of psychological IPA (Starratt, Goetz, Shackelford, McKibbin & Stewart-Williams, 2008).

Unlike the psychological IPA measures described above, it appears that the stand-alone sexual IPA measures are notably broader in content than the sexual IPA subscales of broader IPA measures. However, both types of measures include both sexual acts and coercive sexual methods, suggesting a core to the sexual IPA construct.

Psychometric Properties of IPA Measures

Table 7 presents an overview of the psychometric properties of the instruments described in Tables 1, 3 and 5, divided into physical, psychological and sexual IPA scales and subscales. Within each section, measures used in multiple studies are presented first. Table 8 presents the characteristics of the studies included in Table 7, listing separately the measures characterized as indices of either convergent or discriminant validity by the cited studies. In general, authors considered measures of the same, a similar, or a domain hypothesized to be related as indices of convergent validity. These measures included other indices of IPA, measures of problems potentially caused by IPA (e.g., depression, low self-esteem), reverse-keyed indices of relationship satisfaction and real-life outcomes of IPA (e.g., abuser's arrest history). Thus, the operationalization of convergent validity

was fairly broad. Authors considered measures of presumably unrelated domains indices of discriminant validity, including problems in other life domains (e.g., work, friends), indices of socially desirable responding, psychiatric symptoms not hypothesized to be related to IPA (e.g., anxiety, hostility) and stereotyping sex roles and sexual conservatism. The primary goal of this part of the review is to determine the extent to which the western measures used to assess IPA are sufficiently psychometrically reliable and with sufficient convergent and discriminant validity to provide an appropriate 'baseline' IPA structure to which results obtained in the current study can be compared.

In general, the physical IPA scales demonstrate moderate to high internal consistency reliability (α_M = .84, range = .68 to .94; IIC_M = .45, range = .27 to .67). These scales also demonstrate moderate convergent validity (r_M = .55) and good discriminant validity (r_M = .11). Finally, in general, the physical IPA subscales correlate moderately with other subscales from the same measure, with one exception: ISA Physical and Nonphysical Abuse correlated quite strongly (r = .92). Although the SVAWS subscales may demonstrate higher than ideal interrelations (r_M = .69; range = .34 to .88), it is worth noting that these relations are averaged across all of the subscales and it should be expected that the four physical IPA subscales in this measure would be more highly related, raising the overall inter-scale correlation.

In general, the psychological IPA scales demonstrate psychometric properties very similar to those of the physical IPA scales. Specifically, the psychological IPA scales have moderate to high internal consistency reliability (α_M = .83, range = .65 to .98; IIC_M = .42, range = .15 to .62). The convergent validity of these scales is moderate (r_M = .46), and the discriminant validity is excellent (r_M = .01; for both sources of validity, the

absolute values of the original correlations were converted using the *r*-to-*z* transformation, weighted by sample and averaged). Finally, these scales also correlate moderately (r_M = .54; range = .34 to .74) with other scales from the same measure, although there are far fewer studies reporting these relations than for the physical IPA scales.

The sexual IPA scales, in general, show slightly less adequate psychometric properties than the physical and psychological IPA scales. Notably, the internal consistency reliability (α_M = .67, range = .32 to .95; IIC_M = .31, range = .04 to .73) and convergent validity (r_M = .32, range = .09 to .57) of these scales is lower than the other two sets of scales. The convergent validity of the SES Sexual Coercion scale has been investigated in only one sample (inmates, N = 65), whereas the Sexual Contact scale has been investigated in two (undergraduates [N = 62] and inmates). It is worth noting that the low internal consistency reliability and convergent validity values for both scales come from the inmate sample, whereas the undergraduate sample's convergent validity value is much more consistent with those presented in the rest of the table.

It is not entirely clear why this is so. Cook (2002) stated that she specifically chose to study an inmate sample because they likely experienced the sexually aggressive "behavior and related risk factors frequently" (p. 561). The rate of Sexual Contact in this sample was significantly higher (21%) than in the undergraduate sample, which endorsed more normative rates (8.8%, the difference is significant at $p < .05$). Further, the inmate study used the CTS2 as a measure of the convergent validity of the SES, whereas the undergraduate sample used the CSS, a measure more similar to the SES than the CTS2. Cook (2002) investigated relations between various measures of sexual IPA and social

desirability (r_M = -.10; range = -.04 to -.20) and found the highest relations with the SES scales (r_M = -.16). Although the inmates were relatively willing to disclose their sexual IPA behaviors, their responses still may have been somewhat minimized due to social desirability concerns.

It appears that some measures are more vulnerable to socially desirable responding than others. Walker, Rowe, and Quinsey (1993) hypothesized that social desirable responding is more frequent in self-reports of violence against women than of general violence, as the emotional consequence of admitting these behaviors is greater in the former. Cook (2002) hypothesized that the interviewer's sex may affect socially desirable responding and may moderate the relation between social desirability and disclosure. Specifically, in a male prison context, social desirability may decrease or increase reports depending on whether inmates reported to men or women, respectively. Relevant to the point above, Cook (2002) had both men and women interviewers, whereas Ouimette and colleagues (2000) did not report interviewers' sex. Although Cook (2002) did not find the hypothesized moderator relationship, the sample size was small and the relations between social desirability and IPA rates were low. Variables that may impact disclosure rates are important to investigate as they impact the reliability and validity of measures. Specifically, these variables may potentially skew reported rates of certain behaviors, removing the presumed link between self-reported and actual behavior. It is a question for future research whether this hypothesis is borne out in future research in more heterogeneous, larger samples.

Although not every scale has data to support the relations among its subscales, in general the data presented in Table 7 suggest that IPA measures' subscales are moderately

interrelated and thus may be assessing aspects of a single, underlying construct. Some factor-analytic data support this hypothesis. Specifically, Bjoresson and colleagues (2003) found that a hierarchical five-factor model fit their data AWIRS best, with higher order physical and psychological abuse factors that split into overt violence and restrictive violence and into emotional abuse, deception and verbal abuse, respectively (r = .88 between the two higher order factors). Further, Hegarty and colleagues (2005) found that the four scales of the CAS formed one higher order "abuse dimension," empirically distinct from a "conflict dimension" in a principal components analysis with a varimax rotation. Finally, Marshall (1992) conducted a second-order factor analysis of the nine SVAWS scales and found two higher order dimensions: Actual Violence (Mild, Minor, Moderate, Serious and Sexual Violence) and Threats of Violence (Mild, Moderate and Serious Threats and Symbolic Violence). These data suggest that the various dimensions of IPA are moderately related and may be components of a higher order construct. The structural data specific to the CTS2, perhaps the most investigated IPA measure, is explored further below.

As noted above with the SES scales' psychometric properties, it is important to consider two factors when reviewing the above data. First, the particular samples or types of samples studied may affect the measures' validity and reliability indices, although the reasons for, and nature of, this are unclear and require further investigation. For example, a sample of male chemical dependency patients and their female partners with admitted physical abuse (Shepard & Campbell, 1992) and a female waiting room sample (Zink, Klesges, Levin & Putnam, 2007) yielded different internal consistency reliabilities for the ABI. Second, the measures used to examine an instrument's

convergent and discriminant validity affect the results obtained. Instruments that more specifically assess IPA generally demonstrate higher convergent validity with measures of IPA than those instruments that assess theoretically related, but dissimilar constructs (e.g., marital satisfaction). However, together the above data demonstrate that the commonly used western IPA measures show generally adequate psychometric properties and their component scales show consistent interrelations suggestive of distinct-but-related domains that likely emerge from a single higher order construct.

Summary of Western IPA Measures

The above review highlights that certain physical, psychological and sexual IPA acts commonly are included in western IPA measures, specifically (1) among physical IPA acts: kicked, slapped, hit with object, punched, shoved and pushed; (2) among psychological IPA acts: belittled/criticized, threatening behavior and angry behavior; and (3) among sexual IPA acts: forced to have sex and pressured to have sex in a way that the target did not like or want. Thus, this content analysis of western IPA measures has identified those acts that are considered most central to the western construct of IPA, thereby facilitating a comparison with those acts considered most central to Indian researchers' construct of IPA. If the acts included in the western and Indian constructs are similar, an investigation into the single western IPA instrument that has been translated into Hindi has merit to the extent it adequately measures these acts central to the western IPA construct. This measure is based largely on the CTS2, so I next examine this scale more closely.

Further, the scales used to assess the IPA construct in western psychological literature show adequate psychometric properties and suggest that the dimensions of IPA

are components of a single, underlying construct, providing a consistent structure to which the data obtained in the Indian sample can be compared. This hypothesis also will be considered further below with regards to the CTS2.

The Revised Conflict Tactics Scales

Content

The CTS was developed originally in 1979 (Straus, 1979) and revised in 1996 (Straus et al., 1996). It was designed to assess both violent and non-violent methods that families use to resolve conflict. The CTS2 is widely used: A PsycInfo search conducted in April, 2011, indicated that Straus et al. (1996) had been cited 1243 times. Many authors call the CTS2 the "gold standard" of IPA measurement (e.g., Fals-Stewart, Lucente & Birchler, 2002, p. 123; Hegarty et al., 1999, p. 401; Zink et al., 2007, p. 923). As mentioned previously, this review is focused on behavioral acts of IPA, so the CTS Reasoning scale and the CTS2 Negotiation scale are not considered here. Thus, the relevant CTS2 scales are Physical Assault, Injury, Psychological Aggression and Sexual Coercion.

The revision addressed many drawbacks of the original measure. Among the most major changes were the addition of Sexual Coercion and Injury scales, and transforming the measure from an interview to a self-report questionnaire. More minor changes included the addition of items to the Psychological Aggression and Physical Assault scales, improved wording of items (e.g., changing "his/her" or "him/her" to "my partner"), and interspersing items of different types rather than administering them grouped by category. Among the strengths of the CTS and CTS2 is that both are brief enough to be used in situations with limited assessment time, yet possess sufficiently

diverse content for an adequate sampling of IPA behaviors. Finally, although the CTS and CTS2 can be scored from both the perpetrators' and targets' perspectives, this review's focus is on women who have been the targets of IPA, so only data from the targets' perspective are considered.

Reliability Data

The internal consistency reliabilities of the CTS2 subscales range from moderate to high (Psychological Aggression α = .54 to .84 [α_M = .72]; Physical Assault α = .62 to .94 [α_M = .81]; Sexual Coercion α = .74 to .87 [α_M = .80]; Injury α = .81 to .95 [α_M = .87]), and the mean inter-item correlations (IIC_M) largely fall within the .15 to .50 range recommended by Clark and Watson (1995) (Psychological Aggression IIC_M = .17 to .40 [mean = .24]; Physical Assault IIC_M = .23 to .57 [mean = .39]; Sexual Coercion IIC_M = .29 to .48 [mean = .36]; Injury IIC_M = .42 to .75 [mean = .53]; Calvete, Corral & Estévez, 2007; Connelly, Newton & Aarons, 2005; Lucente, Fals-Stewart, Richards & Goscha, 2001; Newton, Connelly & Landsverk, 2001; Ro & Lawrence, 2007; Straus et al., 1996). The high IIC_M of the Injury subscale suggests it taps a relatively narrow range of content. Corrected item-total correlations range from .35 to .66 for the Psychological Aggression scale, .39 to .70 for the Physical Assault scale, .34 to .74 for the Sexual Coercion scale and .74 to .92 for the Injury scale (Straus et al., 1996). Finally, 9-week test-retest reliabilities indicate that the scales are moderately stable (Psychological Aggression *r* = .69; Physical Assault *r* = .76; Injury *r* = .70; Vega & O'Leary, 2007).

Validity Data

Factor Structure

One of the most commonly cited limitations of the CTS2 is its unstable or

unreplicable factor structure (e.g., Calvete et al., 2007). Researchers have examined whether the measures' four rationally derived content scales are consistent with an empirically-based factor structure using a variety of factor-analytic methods, most commonly confirmatory factor analysis (e.g., Newton et al., 2001). Although some studies have produced item-level factor structures incongruent with the rationally derived scale structure (Calvete et al., 2007; see below for details of this study), in general, the analyses show a similar empirically based structure, which is considered further below.

Confirmatory Factor Analyses

Newton and colleagues (2001) examined the factorial validity of the CTS2 in a sample of women at high risk for experiencing IPA using confirmatory factor analysis with maximum likelihood estimation methods. They did not consider the Sexual Assault or Injury scales in their analyses, and tested a three- (Negotiation, Physical Assault and Psychological Aggression) and a five-factor (Negotiation, Minor and Severe Physical Assault, and Minor and Severe Psychological Aggression) model; their data supported the five-factor model.

Calvete and colleagues (2007) used confirmatory factor analysis to compare three models of the Spanish CTS2 in Spanish-speaking women: (1) a five-factor model composed of the CTS2 Negotiation, Physical Assault, Psychological Aggression, Injury, and Sexual Coercion scales, (2) a 10-factor model composed of rationally derived emotional negotiation, cognitive negotiation, minor psychological aggression, severe psychological aggression, minor physical assault, severe physical assault, minor sexual coercion, severe sexual coercion, minor injuries, and severe injuries constructs), and (3) a hierarchical factor structure, with the five scales of Model 1 composed of the 10 first-

order factors of Model 2, which best fit the data. Correlations among the higher order factors ranged from .82 (Injury and Physical Assault) to .54 (Psychological Aggression and Sexual Coercion), with an average correlation of .62. Although correlations this high suggest the possibility of a single, third-order factor, the authors did not test that model.

The authors also examined the scale score differences between victims and nonvictims of IPA. Those receiving social-service help for IPA victimization reported higher prevalence rates (the authors did not specify how this variable was calculated) of Psychological Aggression, Physical Assault, Sexual Coercion and Injury (all differences $p < .005$). The effect sizes for these differences were small for minor psychological aggression and minor sexual coercion (Cohen's $d = .34$ and .39, respectively) and large for all other forms of IPA (Cohen's *d*s ranged from .92 to 1.26).

Other Factor Analytic Methods

Lucente and colleagues (2001) stated that they conducted a confirmatory multiple-groups factor analysis of the CTS2 in a group of incarcerated women with a history of substance abuse. However, there was no mention of additional groups and the data presented appeared to be the result of an exploratory factor analysis (i.e., they reported only factor loadings and no model-fit statistics).

Three of the eight Psychological Aggression items loaded most strongly on factors other than that labeled Psychological Aggression (two on a Sexual Coercion factor and one on a Physical Assault factor). All of the items showed significant cross loadings, and only three loaded on Psychological Aggression with a greater than .10 difference from the next highest loading. All of the Physical Assault items loaded most highly on the Physical Assault factor, although these items also showed significant cross-

loadings. Among the Sexual Coercion items, each loaded most highly on a Sexual Coercion factor, and five of the seven items showed a greater than .10 difference with their next highest loading. Finally, among the Injury items, four of the six loaded most highly on an Injury factor, two loaded most highly on a Psychological Aggression factor, and four of the items showed greater than .10 differences with their next highest loading. Together, these data suggest that what appears to be an item-level factor analysis may not produce a structure consistent with the rationally derived content scales. However, these authors appear to have mislabeled their analytic procedure, so, it seems best to consider these data with caution.

Connelly and colleagues (2005) examined the factor structure of the CTS2 among self-identified Latina women, who completed the instrument in either English or Spanish. They analyzed the Psychological Aggression and Physical Assault subscales separately, and reported that two-factor solutions with Minor and Severe dimensions provided the best fit to the data in each case. Finally, the loadings were comparable across language of administration, suggesting that the two-factor models for Psychological Aggression and Physical Assault are cross-lingually similar.

Construct Validity

Ro and Lawrence (2007) examined the convergent and discriminant validity of the CTS2 Psychological Aggression scale with the TENSE, MMEA and several measures of both positive and negative communication using a normative sample of newlyweds. The CTS2 Psychological Aggression scale demonstrated moderate to moderately high correlations with the TENSE, MMEA, and CTS2 Physical Assault scale (*r*s = .51,.69, and .55, respectively). This scale also showed moderate correlations with a measure of

positive communication, two measures of negative communication, and a measure of depressive symptoms (*r*s = -.29, .38, .35, and .28, respectively), demonstrating some external validity, although it was unrelated to a measure of marital satisfaction.

To examine the external validity of the CTS2, Sugihara and Warner (2002) investigated relations among income, education, dominance (as assessed by the Dominance Scale; Hamby, 1996) and IPA behavior. They found that income was associated negatively with being the target of physical and psychological IPA among women ($p < .001$ and .05, respectively), and with inflicting injury among men ($p < .05$). Education did not differ between those who reported IPA and those who did not. These authors did not report correlations, only significance values, limiting the conclusions that can be drawn from these data.

Zink and colleagues (2007) examined a normative sample of women drawn from primary-care waiting rooms who completed both the CTS2 and the ABI. ABI Psychological Abuse and CTS2 Psychological Aggression were highly correlated ($r = .74$), as were ABI Physical Abuse and CTS2 Physical Assault ($r = .71$), demonstrating good convergent validity, but the discriminant, cross-correlations between the scales were not provided. Further, the CTS2 discriminated well between women who did and did not experience IPA, in contrast to the ABI, which had a tendency to overclassify women as "at-risk for DV."

Finally, to help create a short-form version of the CTS2, Straus and Douglas (2004) examined the external validity of the CTS2 among introductory psychology students at a New England university. These authors reported partial correlations between the CTS2 scales and anger management, couple conflict, criminal history,

negative attributions and violence approval, after controlling for socioeconomic status, social desirability, and gender. The authors reported controlling for these variables due to possible confounding of these variables with the risk factors and the CTS2 scales; the original relations were not reported. All of the correlations were significant ($p \leq .05$), but low, ranging from .05 (Psychological Aggression and criminal history) to .22 (Sexual Coercion and violence approval).

Summary of CTS2 Reliability and Validity Data

In general, the data presented above support the reliability and validity of the CTS2 as a measure of IPA. The CTS2 has shown moderate to high internal consistency and moderately high test-retest reliability. Further, the factor structures obtained from the CTS2's four rationally derived IPA content scales were generally consistent. Some evidence supported separating the Physical Assault and Psychological Aggression factors into Minor and Severe factors, respectively, but these may simply be "difficulty" factors as frequency and severity of IPA are negatively correlated. There also was some evidence to support a hierarchical structure of IPA, as the correlations found among the CTS2 scales ranged from moderate to high across studies (r_M = .57; e.g., Calvete et al., 2007; Jones et al., 2002), although no studies specifically examined the existence of a higher order factor underlying all the scales. However, these data, taken together with the data on the other IPA scales presented above, suggest the potential existence of a hierarchical structure of IPA, with a higher order dimension comprised of lower order physical, psychological and sexual IPA dimensions. Finally, across the studies described above, the CTS2 has demonstrated moderate to high convergent (r_M = .60 among reported relations) and criterion-related validity (*p*s all < .05 among reported relations),

and moderate discriminant validity (r_M = .32 among reported relations; several other relations were reported only as nonsignificant).

Cross-Cultural Utility

Because the proposed study is concerned with the use of a CTS2-based measure in Gorakhpur, Uttar Pradesh, India, it also is necessary to consider the cross-cultural utility of the CTS2. The CTS and CTS2 have been translated and used in such diverse geographic areas as South Africa (Mathews et al., 2009), Myanmar (Kyu & Kanai, 2005), Canada (Cormier & Woodworth, 2008), China (Chan, 2009), New Zealand (Fergusson, Boden & Horwood, 2008), France (Lejoyeux, Fichelle & Saliou, 2007), Spain (Calvete et al, 2007), Russia (Lysova & Douglas, 2008), Mexico (Rios, Rey, Sáinz & Juárez, 2008), Poland (Doroszericz & Forbes, 2008), Palestine (Haj-Yahia & Abdo-Kaloti, 2008), Bangladesh (Naved, Azim, Bhuiya & Persson 2006) and with Somali refugees (Nilsson, Brown, Russell & Khamphakdy-Brown, 2008) and Nepali immigrants (Thapa-Oli, Dulal & Baba, 2009) in America. Importantly, translated versions of the CTS and CTS2 also have been used in the development of other "emic" IPA measures as a target for assessing construct validity (e.g., Au et al., 2008), and items from the CTS and CTS2 have been used as a basis for creating indices of IPA to be used in cross-cultural comparative research (e.g., Castro, García, Ruíz & Peek-Asa, 2006). Although both the CTS and CTS2 have been used in India, neither has been translated into Hindi nor used with a Hindi-speaking Indian sample. However, the measure used in this study is based on the CTS2, and has been translated into Hindi and used with Hindi-speaking samples in India (discussed further below).

Use in India

Straus (2004) examined the cross-cultural reliability and validity of the CTS2 among university-student dating couples, sampling 33 universities across 17 countries, including Marathi-speaking students from Pune, India. He found high internal consistency reliabilities (Psychological Aggression $\alpha = .81$; Physical Assault $\alpha = .93$; Sexual Coercion $\alpha = .90$; Injury $\alpha = .92$) comparable to those found in western samples. Further, the scales' correlations with an index of social desirability were nonsignificant (*r*s range -.03 to -.07), suggesting that participants' responses were not determined by their willingness to disclose potentially socially undesirable behaviors and beliefs.

Stanley (2008) reported IPA data using a Tamil translation of the CTS2 among wives of alcoholics and non-alcoholics from Tamil Nadu, India. The wives of alcoholics reported higher levels of Psychological Aggression, Physical Assault, Injury and Sexual Coercion (all *p*s < .001) than wives of non-alcoholics. Further, among the wives of alcoholics, Psychological Aggression correlated .56 and .59 with Physical Assault and Injury, respectively, and Physical Assault correlated .25 with Injury. None of the scales correlated significantly with Sexual Coercion. As evidence of construct validity, the authors reported that Psychological Aggression was related mildly but significantly to a measure of communication apprehension ($r = .26$), and both Psychological Aggression and Sexual Coercion were related mildly but significantly to a measure of danger assessment (*r*s = .25 and .33, respectively).

Kumagai and Straus (1983) reported data on the English version of the CTS among high-school seniors in Bangalore, India. These authors used principal-factors factor analysis with varimax rotation, and found a three-factor solution of Verbal Aggression, Violence, and Reasoning, the same factor solution found in the American

and Japanese samples examined in the study. The Verbal Aggression and Violence scales were correlated moderately highly in all three samples (r = .61, .64, and .57 in India, Japan, and America, respectively). The Spearman-Brown split-half reliabilities for Verbal Aggression and Violence were high (r = .93 and .95, respectively), as were the average uncorrected item-total correlations (r_M = .71 and .79 for Verbal Aggression and Violence, respectively). Finally, although no site-specific data were reported beyond IPA prevalence rates, data have been collected using a Bengali translation of the CTS2 (Hines, 2007) and a Punjabi translation of the CTS (Gulati & Dutta, 2008).

Together, these data support similar levels of validity and reliability among Indian samples as among other samples investigated with the CTS2. Further, there were consistent inter-scale correlations at levels similar to those found in non-Indian samples, although Sexual Coercion showed nonsignificant relations with the other CTS2 scales in the one Indian sample reporting these relations.

Limitations of the CTS2

The three most commonly cited limitations of the CTS2 are (1) it ignores the context of IPA, (2) its factor structure is unclear, and (3) it assesses psychological IPA inadequately. In the initial publication of the CTS2, however, Straus and colleagues (1996) argued that the measure's focus on specific acts of IPA, as opposed to context, cause and consequence variables, was deliberate. These authors stated that the measure is intended for use in conjunction with other measures that assess those variables, and that the CTS2's focus on specific acts is one of its greatest strengths, as it allows for a deeper assessment of the IPA construct.

Moreover, the criticism of unstable factor structure does not appear to be well

founded. Although some authors have stated that the factor structure of the CTS2 may change depending on whether the population under investigation has low versus high rates of IPA (Jones, Ji, Beck, & Beck, 2002), the data reported earlier on the factor structure of the CTS2 does not support this hypothesis. These samples ranged from women at high risk for IPA, to incarcerated women with a history of substance abuse, to normative samples. Three of the four analyses support Minor and Severe Psychological Aggression factors, and Minor and Severe Physical Assault factors. Two of the four analyses did not consider the Injury or Sexual Coercion scales, though there is preliminary evidence to support Minor and Severe Sexual Coercion and Minor and Severe Injury factors, as well. Regardless, the data suggest that the CTS2 rationally derived content scales are consistent with an empirically derived factor structure and these data suggest more similarities than differences across studies.

Further, the factor structures found with the CTS2 are similar to those found with the other IPA measures cited above. Specifically, the factor analyses cited support the structural distinction of physical, psychological and sexual aggression, and the relations among these factors (and scales) across measures are consistently moderate to high, suggesting the potential for an underlying higher order IPA dimension. In general, these data support the existence of a consistent, empirically derived IPA structure in western psychological literature. The implications for this structure are considered further below.

Regarding the third criticism, Hegarty and colleagues (2005), for example, argued that the CTS2 Psychological Aggression scale, although improving on the CTS Verbal Aggression scale, does not include emotional abuse items that are often aspects of IPA, specifically social isolation and harassment. It is true that the CTS2 Psychological

Aggression scale primarily assesses verbal aggression (e.g., criticism, threats) as opposed to nonverbal, psychological aggression. Thus, the criticism of the inadequate assessment of psychological IPA in the CTS2 appears well founded.

However, and importantly, the current study did not use the CTS2, but instead a modified version of the CTS2 (the Domestic Violence Module [DVM]; MEASURE DHS, 2005) that previously had been translated into Hindi. Among the modifications made in developing the DVM was the inclusion of several psychological IPA items that specifically tap nonverbal psychological IPA (this is addressed in greater detail subsequently). Further, the current study was not intended to investigate the causes, context or consequences of IPA, but rather the construct of IPA behaviors. As such, the focus on acts of IPA of both the CTS2 and DVM are strengths of these measures from the perspective not only of its authors but also of this study's research focus.

Summary of Domestic Violence and Intimate Partner Aggression in Western Research

As stated earlier, this study is intended to address importation of a psychological measure, the second step in the indigenization process. To import a measure, one first must investigate whether the pattern of results obtained with that measure in the target sample is consistent with results obtained in other linguistic, geographic, ethnic and cultural groupings. With regards to the present study, we can be relatively confident that there is a consistent structure of IPA in western research because the above review demonstrated (1) agreement among researchers with regards to the components of that construct; (2) that the measures used to assess this construct, including the CTS2 (the "gold standard" of IPA assessment), are psychometrically reliable and valid; and (3) that

these measures produce a reasonably consistent, empirically derived structure of distinguishable but related physical, psychological and sexual dimensions, with evidence supporting a potential underlying higher order IPA construct. Together, these data offer reassurance that there is a 'baseline' IPA structure to which the results obtained with the imported sample can be compared. Deviations from this structure may be meaningful and suggest that adaptation or indigenization of this measure may be necessary.

Intimate Partner Aggression in Indian Research

Intimate partner aggression has been described variously in Indian psychological and public health research. This construct has been assessed using a single question (e.g., Koenig et al., 2006), multiple questions (e.g., Verma & Collumbien, 2003), and a definition determined by the respondent (e.g., Ramanathan, 1996). The frequency of IPA behaviors assessed include: at least once in the respondents' lifetime (USAID India, 2000), at least once in their marriage (ICRW, 1999), and at least once in the last year of their marriage (Koenig et al., 2006). Moreover, some studies do not report the frequency of IPA behaviors assessed (Jeyaseelan et al., 2007), and in others respondents offer a free response indicating only the last time the behavior occurred (Verma & Collumbien, 2003). Finally, studies measure differing types of IPA, including physical IPA (Verma & Collumbien, 2003), physical and psychological IPA (ICRW, 1999; Jeyaseelan et al., 2007; USAID India, 2000), physical and sexual IPA (Koenig et al., 2006), or physical, psychological and sexual IPA (NFHS, 2005; Ramanathan, 1996).

Definitions of IPA, as assessed in Indian psychological research, are listed in Table 9. Table 10 presents the frequency with which physical IPA acts are included across Indian measures, with parallel data across western measures provided for

comparison. Among the most striking aspects of Tables 9 and 10 are (1) sexual IPA is assessed either little or not at all in the Indian measures and (2) assessment of psychological IPA ranges across Indian measures from broad to not at all. However, Table 10 also demonstrates the marked similarities between the Indian and western constructs of physical IPA, as instantiated in these measures: the correlation between the two sets of frequencies is .80.

The two physical IPA acts most commonly included in Indian and western measures are the same (kicked and slapped); furthermore, the five most commonly included Indian physical IPA acts are included in half or more of western measures. Notably, the NFHS Domestic Violence Module (DVM; 2005) definition of physical IPA includes 10 of the west's 16 most commonly included physical IPA acts. Only two acts in Indian measures are not included in western measures, one of which ('tried to hurt') is a very broad act that is a milder version of the broad 'physically hurt/abused' item included in five of the six western IPA measures. Taken together, these data indicate that the Indian and western constructs of physical IPA are reasonably similar.

However, there are a few discrepancies between the western and Indian representations of psychological and sexual IPA. That four of the six Indian measures include at least one item addressing either psychological or sexual IPA suggests many Indian psychological researchers recognize these as part of the IPA construct. However, only one measure (the DVM) included more than one sexual IPA item (M = 1.17 acts per measure) and the number of psychological IPA behaviors ranged from zero to 18 (M = 5.67 acts per measure). These data suggest that the sexual and psychological IPA constructs may be less elaborated and play a less prominent role in Indian representations

of the IPA construct; nonetheless, there are notable similarities in those manifestations that are included in the Indian measures.

Importantly, the sexual IPA behavior most commonly included in Indian measures is also the most commonly included in western measures, namely forced sexual intercourse. Further, the psychological IPA behaviors included in the Indian measures can be placed easily into the categories described in Table 4. Across Indian measures, five behaviors each fall into Belittled/Criticized, Threatening Behavior, and Restricted Socially. Three belong in Restricted Physically, two in Angry Behavior, and one each in Embarrassed/Humiliated, Harassed, Jealous/Suspicious, and Destroyed. Again, only a few behaviors mentioned in the Indian IPA measures are not in the western measures (e.g., took another wife) and these appear exclusively in the ICRW.

Together, the data presented in Table 10 suggest a reasonably high level of convergence between the Indian and western definitions of physical IPA as instantiated in psychological or public health assessments of the construct, supporting the importation of a Hindi-translated western measure of IPA, such as the DVM (discussed in detail below), for use in psychological research in India. To date, the only research to use the DVM in Hindi or any language is in the public-health domain, and the data presented are purely descriptive. I was unable to locate any information on the interview's psychometric properties in any version; thus, there is no information that can be used to determine whether similar items can be aggregated to form more reliable scales. From an indigenization perspective, this situation offers a key opportunity to establish which aspects of the DVM can be retained and which need adapting or indigenizing into a new context. First, the psychometric properties and the underlying structure of the measure

must be established, and then the obtained IPA structure can be compared to the structure obtained with western IPA measures.

The NFHS Domestic Violence Module

The *Monitoring and Evaluation to Assess and Use Results Demographic and Health Surveys* (MEASURE DHS, 2005) project was implemented and funded between 1997 and 2007 by the United States Agency for International Development's Bureau for Global Health. The surveys of the MEASURE DHS project, one of which is the DVM, have been used in over 75 countries, including India (administered as part of the National Family Health Survey of 124,385 women). The developers of the DVM state that it is a "modified Revised Conflict Tactics Scale (CTS2)" (MEASURE DHS, 2005, p. 495). Its developers purposefully included multiple questions assessing each of the three types of IPA (physical, psychological and sexual), and specifically addressed acts of violence or aggression as opposed to the respondent's experience of IPA in general. These steps were taken to remove, to the greatest extent possible, the effects of various interpretations of what constitutes IPA to different respondents. Further, the DVM allows for the assessment of IPA severity and frequency, and includes items relevant to nonverbal psychological IPA that were not included in the CTS2. The only CTS2 content not included in the DVM is the CTS2 Negotiation scale.

The NFHS (2005-2006), using the DVM, reported that 35.1% of ever-married Indian women aged 15-49 have experienced some type of physical IPA since age 15, and 21.4% experienced physical IPA in the preceding year. The most common physical IPA behavior assessed was slapping (34% and 20.1%, ever and in the last year, respectively), and the least common assessed was threatening or attacking the woman with a knife, gun

or other weapon (1.2% and 0.7%, ever and in the last year, respectively), consistent with the notion that less severe types of physical IPA are more common than more severe ones.

Further, 10% of the sample experienced sexual IPA at least once in their lifetime, 7.2% in the past year. It was more common for women to be physically forced to have sexual intercourse when they did not want to (9.5% and 6.9%, ever and in the last year, respectively) than to be forced to perform any other sexual act they did not want to (4.6% and 3.4%, ever and in the last year, respectively).

Approximately 16% of the sample experienced psychological IPA, 11.2% in the past year. The most common psychologically aggressive act assessed was the husband saying or doing something to humiliate his wife in front of others (13.1% and 9.1%, ever and in the last year, respectively); the least common was threatening to hurt or harm her or someone close to her (5.4% and 3.6%, ever and in the last year, respectively). One in four women in this sample stated that her husband is jealous or angry if she talks to other men, and 12% said their husband displays three or more controlling behaviors (e.g., does not trust her with money).

Combining different types of IPA, 7.9% experienced physical and sexual IPA and 4.2% experienced physical, psychological and sexual IPA since age 15 (6.3% and 3.6% in the last year, respectively). Of the 29 Indian states, Uttar Pradesh (UP) rated sixth in spousal IPA. In UP, approximately 61% of ever married women aged 15-49 reported experiencing any form of physical IPA since age 15, 26.5% any form of psychological IPA, 16% any form of sexual IPA, and 8.1% reported all three types.

As noted previously, it is important to determine whether the DVM adequately

assesses the three types of IPA defined by western and Indian research. The items of the DVM are presented in Table 9. Of the physical IPA items, 10 are commonly included on both the western and Indian measures of physical IPA (including hurt while pregnant, which is not included in the main DVM but is a supplemental question that will be included in the study measure described below). Further, the only IPA acts commonly cited on western measures but not included in the DVM are grabbed (50% of measures) and threw (25% of measures; see Table 2). However, there are several items on the DVM that may be considered specific examples of grabbing (e.g., twisted arm, pulled hair) and one that is somewhat analogous to threw (dragged); these items (twisted arm, pulled hair, dragged) are not commonly cited in western or Indian measures (17%, 13%, 17% and 13%, 17%, 0%, respectively). The only items included in other Indian measures of physical IPA that are not in the DVM are broad items (physically attacked and tried to hurt; 17% of Indian measures). Overall, these data suggest that the DVM is a reasonably good measure of the physical IPA construct, as defined by both western and Indian research.

The DVM also includes acts from the three most commonly cited categories of psychological IPA acts in western measures (Belittled/Criticized, Angry Behavior, Threatening Behavior). Further, it includes items from the categories of Restricted Socially, Embarrassed/Humiliated and Jealous/Suspicious. Only the ICRW, which was discussed above as the broadest measure of psychological IPA in Indian research, includes psychological IPA items that the DVM does not. However, half the items in the ICRW, in particular those items that are most similar to the American measures of psychological IPA, also are included in the DVM with either identical or highly similar

item content (threatened, threatened with weapon, insulted, humiliated, confined/ restricted physically/restricted socially, verbally abused/harassed/insulted/made to feel bad). Overall, these data suggest that the DVM is a reasonably good measure of psychological IPA, as defined by western and Indian research.

The DVM includes forced sex, which is the sexual IPA act most commonly cited in both western and Indian measures of IPA. Further, the DVM includes an item assessing forced sex acts ("Did your husband force you to perform any sexual acts that you did not want to?"), which encompasses many of the other items commonly included in western measures of sexual IPA. The DVM items also assess every sexual IPA item commonly cited in Indian measures of IPA (although, as noted earlier, these are relatively uncommon in Indian IPA measures, generally speaking). The DVM does not include the specific coercive sexual methods cited in several American measures of sexual IPA. Although it includes threatening (29% of measures) as a measure of psychological IPA, to be considered a measure of sexual (rather than psychological) IPA it seems reasonable that this tactic should have to be used in connection to sexual behavior, as in the SES. Thus, this and the fact that the DVM does not include pressuring (57% of western measures) are limitations of the DVM; however, as mentioned earlier, Indian measures in general contain fewer sexual IPA items than western measures. Although no Indian measure of IPA includes any specific coercive sexual method, neither are they included in the CDC definition of sexual IPA, which is among the most comprehensive definitions of IPA used in western research. Overall, these data suggest that, while somewhat limited in scope, the DVM measures sexual IPA in a way that is consistent with how it is defined generally in both western and Indian research.

At present, the psychometric reliability and validity of the DVM have not been established, although available data are encouraging. Establishing the psychometric properties of this measure would enhance basic research and facilitate investigation of both the correlates of IPA type, severity and frequency, and the structure of IPA in India compared to that obtained in western research, so examining the DVM's reliability and validity is an important empirical question that is part of this study's purpose.

The Five-Factor Model of Personality

The same desiderata that pertain to IPA also are important considerations for indigenizing a Five-Factor Model (FFM) personality measure. The FFM is one of the most well-known and widely investigated personality systems. This model postulates that five broad dimensions—Neuroticism, Extraversion, Openness (to Experience) or Culture, Agreeableness and Conscientiousness (Costa & McCrae, 1992; Goldberg, 1992)—account for the majority of individual differences in personality. Among the most commonly used FFM instruments are the Revised NEO Personality Inventory (NEO PI-R; Costa & McCrae, 1992), the NEO-Five Factor Inventory (NEO-FFI, a short form of the NEO PI-R; Costa & McCrae, 1992), the Big Five Inventory (BFI; John, Donahue & Kentle, 1991) and FFM scales developed from the International Personality Item Pool (IPIP-NEO; Goldberg et al., 2006). The facets of the NEO PI-R are listed in Table 11.

A PsycInfo search in April, 2011 using the words "FFM," "five-factor model of personality," or "five factor model of personality" in article titles yielded 491 articles published since 1985; using these search terms in "any field" generated 1,222 references published since 1985, of which 31 were classified as literature reviews and 26 were

classified as meta-analyses. This volume of literature amounts to an average of 4.1 publications a month for the last 25 years. Further, the meta-analyses cited are not restricted to personality or social psychological research. In fact, clinical phenomena such as personality disorder (Miller & Lynam, 2008; Samuel & Widiger, 2008; Saulsman & Page, 2004; Widiger & Costa, 2002), externalizing pathology (Ruiz, Pincus & Schinka, 2008), and alcohol problems (Malouff, Thorsteinsson, Rooke & Schutte, 2007) were the most common focus. However, other meta-analyses focused on academic performance (Poropat, 2009), occupational performance (Barrick, Mount & Gupta, 2003; Mount, Barrick & Stewart, 1998; Salgado, 1997), job satisfaction (Judge, Heller & Mount, 2002), and emotional intelligence (McCrae, 2000), as well as stability and change of the FFM dimensions over time (Roberts & Delvecchio, 2000; Roberts, Walton, & Viechtbauer, 2006). Thus, the FFM clearly is well established across a wide range of psychological research as a—if not 'the'—dominant personality trait model.

Reliability of the Five-Factor Model of Personality

The internal consistency reliabilities for each of the NEO PI-R domains are all above the widely accepted threshold for good internal consistency and reliability (Neuroticism α = .92; Extraversion α = .89; Openness to Experience α = .87; Agreeableness α = .86; Conscientiousness α = .90), and range from moderate to acceptable for the facets (α range = .57-.81, α median = .72; Costa & McCrae, 1992). Those for the NEO-FFI are somewhat higher, as expected from more focused scales (Neuroticism α = .79; Extraversion α = .79; Openness to Experience α= .80; Agreeableness α= .75; Conscientiousness α = .83; Costa & McCrae, 1992). The test-retest reliability of the NEO PI-R domains over varying intervals from 1 to 3 years, and

over 6 years is high (Neuroticism *r* = .85 and .83, respectively; Extraversion *r* = .94 and .82, respectively; Openness to Experience *r* =.98 and .83, respectively; Agreeableness *r* = .87 and .63, respectively; Conscientiousness *r* = .87 and .79, respectively; Costa & McCrae, 1992; Hampson & Goldberg, 2006).

Finally, the FFM traits demonstrate consistent patterns of mean-level change across different studies and different FFM measures of the FFM, specifically increases with age in Extraversion (both its social dominance and social vitality dimensions), Openness, Agreeableness and Conscientiousness, and decreases in Neuroticism; Roberts et al., 2006). These traits also demonstrate adequate consistency (i.e., test-retest reliability) estimates (ranging from .46 for Neuroticism to .55 for Extraversion; *Mr* = .51; Roberts & DelVecchio, 2000). These longitudinal data are important because, as is discussed further below, many of the studies investigating relations between personality and the experience of IPA are not longitudinal. This presents a problem for the interpretation of these data as (1) many personality traits are moderately to strongly related to psychopathological symptomatology (e.g., neuroticism and depression) and (2) it is unclear in a cross-sectional study whether the IPA preceded or followed the trait/symptom assessed. Establishing the stability of personality traits offers some support for the primacy of traits in trait-behavior sequences.

Validity of the Five-Factor Model of Personality

Construct Validity

Samuel and Widiger (2008) conducted a meta-analysis examining relations of the NEO PI-R domains and facets with the Diagnostic and Statistical Manual of Mental Disorders personality disorders (PDs) based on 16 empirical studies that included 18

independent samples (total *N* = 3,207 participants). These authors also examined relations between meta-analytically derived FFM profiles for each of the PDs in their aggregated sample and the consensus profiles provided by Saulsman and Page (2004) and Lynam and Widiger (2001) using intraclass correlations, which consider both shape and magnitude of profiles. These correlations ranged from .71 to .45, with a mean of .55, suggesting a moderately high level of convergence between empirical and conceptual clinical profiles.

Malouff and colleagues (2010) conducted a meta-analysis of relations between FFM personality factors and relationship satisfaction among intimate pairs. Across 19 samples, they found that lower Neuroticism, higher Agreeableness, higher Conscientiousness and higher Extraversion were related significantly to the intimate partner's level of relationship satisfaction; however, effect sizes were small for Neuroticism (-.22), and negligible for the other domains (.15, .12 and .06, respectively). In a similar meta-analytic study, Heller and colleagues (2004) examined relations between FFM personality traits and marital, job, and life satisfaction. Again, lower Neuroticism, higher Agreeableness, higher Conscientiousness and higher Extraversion all were related to marital satisfaction; moreover, effect sizes were slightly stronger than in the previous analysis (-.29, .29, .25 and .17, respectively). It is possible that stronger relations were found due to participants being in longer term relationships. That is, Malouff and colleagues included studies of dating, cohabiting and married pairs, whereas Heller and colleagues focused on only married pairs.

Structural Validity

Markon, Krueger and Watson (2005) examined the hierarchical structure of

normal and abnormal personality in both a meta-analysis and an empirical study, using various FFM measures—including three versions of the NEO (NEO-PI, NEO PI-R, and NEO-FFI) in the meta-analysis, and two FFM measures (NEO PI-R and BFI) in the empirical study—as well as three measures of personality pathology. Their goal was to integrate "Big Trait" structural theories of personality and abnormal personality. Two-, three-, four- and five-factor models of personality replicated well in a consistent hierarchical structure across methodologies and samples. Relevant to this review, the five-factor personality model extracted in both studies strongly resembled the FFM factor structure, and included Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness factors. Similarly, in their review, Widiger and Simonsen (2005) note that the NEO PI-R FFM structure bears striking similarity to other notable dimensional personality models (both normal and pathological), such as the Schedule for Nonadaptive and Adaptive Personality (Clark, Simms, Wu & Casillas, in press) and the Dimensional Assessment of Personality Pathology—Basic Questionnaire (Livesley & Jackson, 2010).

Aluja, García, García and Seisdedos (2005) examined the factor structure of the NEO PI-R using a variety of factor-analytic strategies with the normative American and Spanish standardization samples, plus a sample of Spanish university students. They used three factor-extraction methods (principal-components, principal-factors and maximum-likelihood confirmatory factor analysis) with three rotation methods (varimax, Procrustes and promax) to obtain nine factor solutions. The average of factor congruence coefficients across varimax and Procrustes solutions was .97. These data suggest that the factor structure of the NEO PI-R may be largely invariant across factor analytic strategies.

Cross-Culture Generalizability of the Five-Factor Model of Personality to India

The cross-cultural generalizability of the FFM is notable. McCrae (2001) analyzed NEO PI-R data from 114 samples drawn from 36 cultural and geographic groupings, including such diverse geographic areas as Asia, both eastern and western Europe, the United States, the Pacific Islands, Africa, South America and Russia. These data included two samples from India, a Telugu-speaking (n = 214 adolescents) and a Marathi-speaking sample (n = 259 adults). Telugu is a Dravidian language, whereas Marathi is very similar to Hindi, the language spoken by over 40% of India; both are Indo-Aryan languages that evolved from Sanskrit. The composite factor T-scores for the Telugu and Marathi Indians were not markedly different, except for a moderate difference in Openness (Neuroticism = 52.3 and 49.1, respectively; Extraversion = 43.5 and 40.7, respectively; Openness = 44.0 and 51.4, respectively; Agreeableness = 55.9 and 56.7, respectively; Conscientiousness = 54.0 and 55.7, respectively; SD_M = 8.5 and 9.8, respectively across all factors, indicating somewhat less variability than in the standardization sample; factor-specific SDs were not provided).

The raw score means were standardized to U.S. norms before calculating the factor T-scores reported above, which allows for a comparison between the two Indian samples and the U.S. standardization sample. Schmitt and colleagues (2007) indicate that "this procedure may appear unnecessarily ethnocentric" (p. 187), but it maximizes comparability to previously reported findings as the procedure has been used before and, as such, using another method would make future cross-nation comparisons impossible.

In comparison to U.S. norms, all factors were within one SD of these norms, with Neuroticism the most similar. Further, it appears that in these Indian samples compared to U.S. norms, Extraversion and Openness are lower and both Agreeableness and Conscientiousness are elevated.

Examination of the data from all 36 of McCrae's (2001) culture groupings suggests that men and women of the same age show markedly similar personality factor structures. The mean factor congruence across all groupings and traits at both the domain and facet levels was .90 (domain range = .85 for Extraversion to .94 for Neuroticism and Conscientiousness; facet range = .72 for O6 Values to .99 for N1 Anxiety and N2 Angry Hostility). However, Extraversion showed greater structural difference across gender than the other traits. Overall, these data suggest that the structure of the NEO PI-R is largely consistent across cultural and geographic groupings and across gender. However, McCrae (2001) did not report facet-level factor-congruence data for specific samples, precluding a more nuanced analysis of the Indian data.

Lodhi, Deo and Belhekar (2002) presented additional data from the Marathi Indian sample. Alpha reliabilities ranged from .73 to .90 for the NEO PI-R domain scales. Statistically significant gender differences on facet-level scores were infrequent (men were higher on only two facets, Impulsiveness and Excitement-Seeking, and women were higher on only six, with no more than two from the same domain (Positive Emotions, Aesthetics, Straightforwardness, Altruism, Order and Deliberation). These same gender differences also have been found in analyses of data from 26 cultural and geographic groupings, with small effect sizes (Cohen's *d* = .30, .39, .29, .41, .42, .46, .35 and .31, respectively; Costa, Terracciano & McCrae, 2001). Correlations among the

NEO PI-R domains ranged from .04 (Extraversion with Agreeableness) to -.51 (Neuroticism with Conscientiousness), r_M = .21), which is consistent with those presented by Costa and McCrae (1992) for the American adult normative sample, which ranged from .02 (Openness with Neuroticism, Agreeableness and Conscientiousness) to -.53 (Neuroticism with Conscientiousness); r_M = .20.

Further, the part-whole correlations between the NEO PI-R and NEO-FFI domain scales were .86, .78, .79, .73 and .89, respectively, for Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness in the Marathi sample (r_M = .81; Lodhi et al., 2002). These correlations were slightly lower than those found with the American normative sample (.92, .90, .91, .77 and .87, respectively; r_M = .87)

Factor analyses of the domains and facets of the NEO PI-R using an orthogonal Procrustes rotation toward the American normative factor pattern produced congruence coefficients ranging from .97 for Conscientiousness to .89 for Openness among the domains, and from .99 to .73 for the facets, with an average of .94. The average facet-level congruence coefficients across domains were .98, .93, .90, .89, .97, respectively, for Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness. Notably, the congruence coefficient for Tender-Mindedness was only .73, and when this facet was removed, the average facet-level congruence for that domain increased to .93. This facet was one of the two with notably elevated means compared to U.S. norms in previous research.

Lodhi and colleagues (2002) also administered both the NEO-FFI and the Eysenck Personality Questionnaire-Revised (EPQ-R, which assesses Psychoticism, Extraversion, Neuroticism and a validity index, the Lie scale; Eysenck & Eysenck, 1997)

to 300 Marathi-speaking adults. Women in this sample scored higher on NEO-FFI Agreeableness and lower on NEO-FFI Extraversion than the men (effect sizes Cohen's *d* = .55 and .35, respectively), differences in the expected direction that have been found previously (e.g., Costa et al., 2001). The variance-covariance matrices based on the NEO-FFI and EPQ-R scales did not differ significantly between men and women (Lodhi et al., 2002), and were consistent with previous research (e.g., McCrae & Costa, 1985) and theoretical predictions: Neuroticism and Extraversion correlated .60 and .53, respectively, whereas Psychoticism correlated -.42 with Agreeableness and -.33 with Conscientiousness. Previous research using the NEO PI-R and the Eysenck Personality Inventory (1964) and the EPQ Psychoticism scale shows similar relations (Neuroticism and Extraversion correlated .75 and .69, respectively, whereas Agreeableness and Conscientiousness correlated -.42 and -.25, respectively; McCrae & Costa, 1985).

Schmitt, Allik, McCrae, and Benet-Martinez (2007) reported data obtained from 200 English-speaking adult Indians in their study of personality, including the BFI, across 56 nations in 10 world regions. Their data suggest adequate internal reliabilities of the BFI scales (ranging from .70 for Agreeableness to .79 for Neuroticism); however, the scales are clearly less internally consistent than the English-language originals, which typically average in the mid-.80s (e.g., Soto & John, 2009). Nonetheless, a clear FFM structure was obtained when item-level data from all respondents were pooled, both before and after the scores were standardized within each sample. The overall congruence coefficient was .98 when the obtained factor structure was compared to that obtained in the U.S., where the BFI was developed.

In this study, the Indian sample was considered part of the South and Southeast

Asia world region. The factor congruence coefficients between the data from this region and the American data were .95, .91, .86, .85 and .89, respectively, for Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness, with an average of .88, suggesting a range from highly to moderately similar factors. Personality trait profiles also were developed for each country, using American standardized scores to calculate T-scores. Data from English-speaking Indian adults were consistent with U.S. norms (Neuroticism = 50.0, Extraversion = 47.4, Openness = 48.5, Agreeableness = 50.4, Conscientiousness = 47.4; SD_M = 9.3 across all traits).

McCrae and Terracciano (2005) reported on observer-rated personality traits, as measured by the third-person version of the NEO PI-R, in 50 cultural and geographic groupings. Indian participants were 185 Telugu-speaking young adults (age_M = 21.0 years) who were asked to rate one specific target; subjects were given four groups from which to choose their target: college-aged women and men, and adult [over age 40] women and men. The structure of the self-report NEO PI-R replicated reasonably well in the third-person version of the NEO PI-R in this sample; the congruence coefficients with the American normative data were .93, .87, .80, .91 and .92, respectively, for Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness, with an average of .89, suggesting a range from moderately to highly similar factors.

Finally, Narayanan, Menon and Levine (1995) examined the structure of personality in an Indian sample using two emic (culture-specific) approaches, a free-descriptor method and a critical-incident method. In the free-descriptor method, 221 Hindi-speaking undergraduates from two universities generated the personality trait terms and descriptors used, and a second group of Indian participants rated themselves using

these terms and descriptors. In the critical-incident method, 336 critical incidents (direct observations of behavior that reveal an important aspect of the individual's character) were generated by 183 Hindi-speaking undergraduates and classified by trained raters into personality categories based on the trait most reflected by behavioral response to the incident. Incidents were then randomized and resorted by different raters into categories, which the authors stated were similar to those developed by the previous raters.

Both methods produced five personality factors that were largely consistent with the FFM traits (Narayanan et al., 1995). The factors developed using the free-descriptor method were: Conscientiousness/Dependability (8 markers), Agreeableness/Pleasantness (8 markers), Surgency (Extraversion; 6 markers), Emotional Stability (low Neuroticism; 5 markers) and Openness to Experience (4 markers). The 10 most frequently generated trait terms and descriptors included at least one marker of each of the FFM traits. Using the critical incident method, 23.2% of the incidents reflected Dutifulness/Conscientiousness, 22.4% reflected Concern for Others/Amiability/Agreeableness, 18.9 % reflected Broad-Mindedness/Wisdom/ Culture/Openness to Experience, 15.9 % reflected Self-Expressiveness/Surgency and 15.6 % reflected Placidity/Emotional Stability. Approximately 4% of the incidents generated were not considered reflective of any of the above dimensions, and these were classified into Morality, Conservative, and Nationalism groupings.

Overall, Narayanan and colleagues (1995) concluded that their data "strongly supported the five-factor model, while also revealing certain culturally based departures" (p. 61). For example, Conscientiousness and Agreeableness were described and observed more frequently in critical incidents than were other traits (e.g., 8 markers each vs.

Openness 4 markers). Similar emic methods used to examine the FFM in different cultures corroborate Narayanan and colleagues' (1995) finding of a personality structure generally similar to the FFM, although these structures also provided evidence for the existence of culturally based departures from this structure (e.g., Cheung, Conger, Hau, Lew & Lau, 1992; Church & Katigbak, 1989). In general, therefore, it appears that the overall FFM structure was replicated in this sample by both emic methods.

Together, the data reported here suggest that the FFM—as assessed by the NEO PI-R, NEO-FFI, BFI, and two emic approaches—is a robust personality structure widely generalizable to diverse countries, cultures and languages, including several samples in India. Further, the structure and external correlates of this model have been demonstrated in India across gender in three languages (Marathi, Telugu and English), across two age groups (adolescents and adults), two types of ratings (self and other), and using both etic and emic methodologies. These data suggest that Indian samples show marked similarities in personality structure to at least 50 other cultural or linguistic groups, while demonstrating somewhat consistent slight to moderate variations in trait structure, particularly involving Extraversion and Openness. However, the inconsistencies in Extraversion from U.S. data were not uniform across Indian samples, suggesting that they may be sample specific. Moreover, the cross-cultural generalizability of Openness has been shown to be problematic in a meta-analysis (Rolland, 2002), and these data reflect that property. Proponents of the FFM theorize that the overall similarities in trait structure are attributable to the fact that personality traits are biologically based and that "cultures shape the expression of traits" (Hofstede & McCrae, 2004, p. 74).

As mentioned previously, the second aim of this review was to demonstrate the cross-cultural and cross-linguistic applicability of the FFM, with particular attention to the use of the FFM in Indian samples. The research described above demonstrates that, in general, the NEO PI-R and NEO-FFI display adequate reliability and validity as measures of personality traits in several linguistic groupings in India, and the FFM has a replicable structure both in western research and across FFM measures used in India, including the NEO PI-R and NEO-FFI. These data together suggest that the indigenizing process for a FFM measure is worth pursuing, and that there is a 'baseline' FFM structure to which results obtained within the imported sample can be compared. Deviations from this structure may be meaningful and suggest that adaptation or indigenization of this measure may be worthwhile.

However, although the NEO PI-R and the NEO-FFI have been translated into Hindi, I could find no research into the psychometric properties of the translations. Establishing the psychometric reliability and validity of a Hindi FFM measure would enhance basic research and enable researchers to investigate the correlates of personality in more Indian samples, given that Hindi is a dominant Indian language. From an indigenized psychological perspective, this goal is scientifically valuable as it would allow Indian researchers to investigate FFM theory to determine which parts are cross-culturally consistent and which require adaptation or indigenization.

Personality Traits Among Women Who Are Targets of Intimate Partner Aggression

Multifactor theoretical frameworks posit that IPA results from the interaction between the individual and the environment that serve as risk factors for or protective

factors against IPA (Stith, Smith, Penn, Ward & Tritt, 2004). Dutton (1995) presented a nested ecological theory of IPA that examined variables at four levels: macrosystem (e.g., cultural values and beliefs), exosystem (e.g., job stress, social support), microsystem (e.g., interaction patterns of the family) and ontogentic—variables that individuals bring to their current relationships as a result of their developmental history (e.g., learned behaviors), and cognitive and emotional responses to microsystem or exosystem stressors. Although this theory does not specifically address individual predispositions and temperament/personality, it is reasonable to assume they would be included at this level, as Stith and colleagues specifically mention both fear and depression as ontogentic variables and victim risk factors.

Although Dutton's (1995) theory pertained only to IPA perpetrators, Stith and colleagues (2004) argued that it also may be applied to IPA targets. That is, the personality traits of IPA targets may serve as ontogentic variables, interacting with perpetrator and environmental variables to become either risk factors for or protective factors against IPA. Existing research suggests several distinct ways in which women's personality may be a risk factor for increased likelihood of experiencing IPA, specific types of IPA, or moderate versus severe IPA. This review describes the findings to date and considers the explanatory hypotheses researchers have offered. As this research remains limited, there currently are no firm conclusions regarding relations between personality and targets' experience of IPA. In particular, I was able to locate very few articles investigating how personality may serve as a protective factor for IPA (e.g., an unpublished dissertation, Buckhout, 2001; Steinberg, Pineles, Gardner & Mineka, 2003), clearly offering an avenue for future research.

Studies have investigated both predictors and outcomes of IPA. For example, some research has investigated the psychopathological results of experiencing IPA, such as depression and depressive symptoms, both of which are linked closely with the personality trait of Neuroticism (e.g., Clark, Vittengl, Kraft, & Jarrett, 2003), higher levels of which may serve as a precursor of or risk factor for IPA (see next section). Whereas retrospective reporting can suggest variables that may be precursors of IPA within a romantic relationship, only longitudinal research can determine whether the personality trait or the IPA is temporally primary. Importantly, however, meta-analytic evidence supports the stability of personality traits, even in the face of stressful life events, such as IPA (e.g., Roberts & Delvecchio, 2000; Roberts et al., 2006), suggesting that personality traits assessed during or following a woman's experience of IPA may have been or likely were present at similar levels prior to the experience. Regardless, the studies described below are longitudinal, unless otherwise noted.

Trait Neuroticism

Relations between Neuroticism and IPA

Depression and Depressive Symptoms

Aspects of trait Neuroticism show many of the clearest links to women's experience of being the target of IPA. Depression and depressive symptoms have been linked consistently to trait Neuroticism and, to a more moderate extent, low Extraversion (e.g., Clark, Vittengl, Kraft, & Jarrett, 2003; Mineka, Watson, & Clark, 1998). Meta-analytic evidence suggests that depressive symptoms (r = .59) and fear (r = .57) are moderate risk factors for women to be a target of IPA (Stith et al., 2004). Vézina and Hébert (2007) reviewed the literature on risk factors for IPA and found seven studies,

three of which were longitudinal, demonstrating that depressive symptoms were antecedents to physical and sexual IPA; one study found that suicidal behavior was a risk factor for IPA (Cleveland, Herrera & Stuewig, 2003). Finally, a diagnosis of any *DSM-III-R* Axis I diagnosis, many of which are associated significantly with high levels of Neuroticism, has been shown to be associated with slightly greater risk for experiencing IPA (r = .17; Danielson, Moffitt, Caspi & Silva, 1998).

Interpersonal Sensitivity and Hostility

The Interpersonal Sensitivity and Hostility scales of the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983) are moderately related to NEO PI-R Neuroticism (rs = .59 and .47, respectively; Piedmont & Ciarrocchi, 1997). In a cross-sectional study, Lento (2006) found that higher levels of BSI Hostility in women were related to both relational and physical victimization by one's romantic partner (r = .39 and .25, respectively). Relational victimization was defined as ostracism, exclusion and manipulation, and was assessed by the Revised Self-Report of Aggression and Social Behavior (Morales & Crick, 1998). Interpersonal sensitivity, assessed by the BSI Interpersonal Sensitivity scale, was defined as marked discomfort when interacting with others and feelings of personal inadequacy/inferiority, and was related significantly to relational victimization by one's romantic partner (r = .25; hostility and interpersonal sensitivity r = .54). Further, hostility remained a significant predictor of relational victimization among females after controlling for physical victimization (r = .33). Both hostility and interpersonal sensitivity remained significant predictors of physical victimization after controlling for relational victimization (r = .27 and -.21, respectively). Together, these data suggest that hostility and interpersonal sensitivity, both of which are

moderately related to, and may be considered facets of, Neuroticism, may represent vulnerability factors for relational victimization, which shares many characteristics with psychological IPA, and physical IPA.

Low Self-Esteem

The links between low self-esteem and IPA are not as clear as the links between other aspects of Neuroticism and IPA, perhaps because it represents a blend of Neuroticism and low Extraversion (see below). Cross-sectional studies have demonstrated a negative relation between self-esteem and experiencing IPA (Jezl, Molidor, & Wright, 1996; O'Keefe & Treister, 1998; Pirog-Good, 1992; Sharpe & Taylor, 1999). However, longitudinal research (Cleveland et al., 2003; Foshee, Benefield, Ennett, Bauman & Suchindran, 2004) and other cross-sectional studies have not supported this relation (Follingstad, Rutledge, McNeill-Harkins, & Polek, 1992; O'Keefe, 1998; Small & Kerns, 1993). These inconsistent data may result from the fact that although low self-esteem shows the strongest relations among the FFM traits with Neuroticism (typically above .50), it also is related moderately to low Extraversion (*r*s between .30 and .50) and low Conscientiousness (*r*s between .20 and .43), and weakly related to low Agreeableness (*r*s between .11 to .32) and Openness (*r*s between .09 to .31), depending on the measure of self-esteem (Watson, Suls & Haig, 2002). Thus, the varying results may reflect the use of different measures with varying Neuroticism saturation and, in any case, require further research to explain.

Hypothesized Mechanisms of Action

Researchers have hypothesized about ways in which Neuroticism may act to increase a woman's risk of experiencing IPA. Dienemann and colleagues (2000) asserted

that depression is linked to lower quality of marital functioning and lower libido, which may put a woman at greater risk for physical and sexual IPA in her relationship. Vézina and Hébert (2007) argued that women who are more isolated and sad may be more likely to tolerate a partner's IPA because they want to avoid losing him. Lento (2006) suggested that higher levels of interpersonal sensitivity may predispose individuals to experience relational or psychological IPA because their partners likely would be aware the targets were vulnerable to perceived threats to the status of their relationship, and may use these threats to control them. Further, she asserts that hostility may function both to generate and to worsen physical IPA through its tendency to lead an individual to react angrily in a given situation or conflict. Regardless of the specific mechanism or mechanisms, the above data suggest a largely consistent link between higher levels of FFM Neuroticism and the experience of physical, psychological and sexual IPA, although the link to low self-esteem remains unclear.

Further, it is important to note that Neuroticism shows very strong links to clinical symptomatology (e.g., depression, anxiety) that often follow IPA. As such, there is ambiguity about the direction of causality between IPA and the levels of Neuroticism and Neuroticism-related dimensions found in cross-sectional studies. Longitudinal-study results, which are largely consistent with cross-sectional ones, reduce this ambiguity, suggesting the likely primacy of Neuroticism and Neuroticism-related dimensions in IPA, although bidirectionality also is a strong possibility.

The Externalizing Spectrum

The externalizing spectrum is a broad class of psychopathology and psychopathological behavior that encompasses antisocial personality and behavior,

conduct disorder (adolescent delinquency), alcohol and drug use/abuse (Krueger, Markon, Patrick & Iacono, 2005), as well as temperamental disinhibition (Krueger, Markon, Patrick, Benning & Kramer, 2007). Some evidence suggests that sexual risk-taking is an aspect of externalizing behavior (e.g., Hoyle, Fejfar, & Miller, 2000; Miller & Resick, 2007). Temperamental disinhibition is strongly linked to low levels of both FFM Agreeableness and Conscientiousness (Markon et al., 2005).

Relations between Externalizing Behavior/ Temperamental Disinhibition and IPA

Antisocial Personality and Behavior

Several studies note the link between antisocial personality and the experience of IPA among women. Schumacher, Slep, and Heyman (2001) reviewed the literature on risk factors for physical IPA and observed that two longitudinal, epidemiological studies (Danielson, Moffitt, Caspi & Silva, 1998; Magdol et al., 1997) found women who reported severe IPA also reported more symptoms of Antisocial Personality Disorder than those women who experienced no IPA, although the relation was small (r = .16). Higher levels of MMPI scale four (Psychopathic Deviance) in IPA targets have been associated with increased risk of IPA (r = .37), as have four of the five Harris Lingoes subscales of this scale: Family Discord, Authority Problems, Social Alienation and Social Imperturbability (r = .40, .35, .30 and .22, respectively), but not Self-Alienation (Rhodes, 1992).

Studies have demonstrated that young women's antisocial behavior is related longitudinally to their partner's perpetration of psychological and physical IPA. Kim and Capaldi (2004) found that young women's antisocial behavior at Time 2 (ages 20-23

years) was related to their partner's psychological IPA at Time 2 (r = .35) and marginally associated with their partner's physical IPA at Time 2 and Time 3 (ages 24-26 years; r = .20 and .21, respectively).[1] Concurrently at Time 2, after controlling for the partner's antisocial behavior and depressive symptoms, a young woman's depressive symptoms remained a significant predictor of her partner's use of physical IPA (ß = .36), and both her depressive symptoms and antisocial behavior remained significant predictors of her partner's use of psychological IPA (ß = .23 and .43, respectively). Prospectively at Time 3, her Time 2 depressive symptoms remained a significant predictor of her partner's psychological IPA (ß = .24), though the relations with physical IPA were no longer significant. Also at Time 3, the interaction between the two partners' antisocial behavior was significant and negative; specifically, when men's antisocial behavior was below the median, the women's antisocial behavior was positively related to men's use of psychological IPA, but when men's antisocial behaviors was above the median the women's antisocial behavior was unrelated to men's use of psychological IPA. This suggests that women's antisocial behavior "evoked" psychological IPA in men who were not otherwise inclined towards this behavior, whereas if men already were so inclined due to their own level of antisocial behavior, women's own antisocial behavior was not a factor. Similarly, higher levels of, or increases in, both women's antisocial behavior and depression have been associated with a corresponding increase in their partner's physical IPA towards them over 10 years (Kim, Laurent, Capaldi, & Feingold, 2008).

Conduct Disorder/Adolescent Delinquency

Vézina and Hébert (2007) reviewed 10 studies (four longitudinal) that examined

[1] Time 1 data were not included in this study because a number of variables used in these analyses were not collected at Time 1.

childhood or adolescent delinquent behaviors and the subsequent experience of IPA, and found that 70% reported a significant association. Childhood onset (chronic) antisocial behavior problems put women at a significantly higher risk for experiencing IPA than adolescent/early adulthood onset (adolescent-limited), and both groups with early behavior problems showed greater incidence of experiencing IPA than those who had no early behavior problems (Vézina & Hébert, 2007). In a similar study, Woodward, Fergusson & Horwood (2002) reported that these effects remained significant after social background, parent-child relations, interpersonal relations and child characteristics (e.g., attentional problems) were controlled for. One longitudinal study found that childhood behavior problems were the most important factor in predicting later experience of IPA, even after controlling for family factors (e.g., family conflict; Magdol, Moffitt, Caspi & Silva, 1998), although there is evidence suggesting that this relation is not maintained if exposure to parental IPA is controlled (Ehrensaft et al., 2003). Woodword and colleagues (2002) argued explicitly that the earlier that behavior problems manifest, the more likely the individual is to be the target of IPA later.

In a longitudinal study of physical IPA across multiple adolescent romantic relationships, girls' Time 1 IPA experience frequency and severity were related significantly, though negligibly, to their acceptance of female dating victimization (r = .12 and .13, respectively) and mild to moderately to their delinquency (r = .33 and .44, respectively; Williams, Connolly, Pepler, Craig & Laporte, 2008). Acceptance of dating victimization was determined by presenting hypothetical scenarios to which respondents indicated whether violence was justified (e.g., 'Because his/her partner became too clingy'; acceptance of female dating victimization and acceptance of male dating

victimization r = .89). These relations persisted 1 year later, for both victimization frequency (r = .20 and .21, respectively) and victimization severity (r = .29 and .24, respectively). Structural equation modeling of these relations suggested that for adolescent girls with higher acceptance of dating aggression, delinquency significantly predicted the recurrence of IPA in new relationships.

Substance Use/Abuse

Of 25 studies reviewed by Vézina and Hébert (2007) that reported evidence on female partners' substance use/abuse and experiencing IPA, only seven found no association. Four of the studies were longitudinal and found that female partners' substance use/abuse was both a predictor and a consequence of IPA among female targets of IPA. Meta-analytic evidence drawn from cross-sectional studies also indicates that alcohol use is a risk factor for experiencing IPA (r = .25; Stith et al., 2004). In longitudinal studies, women who experience IPA have reported more symptoms of alcohol (Magdol et al., 1997), but not non-alcohol-substance dependence (Danielson et al., 1998). Finally, Leonard and Senchak (1996) argued that targets' alcohol use is predictive of IPA only insofar as it is correlated with perpetrators' alcohol use. In other words, they argued that it is only because perpetrators' alcohol use is correlated with both targets' alcohol use and IPA that the relationship between targets' alcohol use and IPA emerges as significant. This hypothesis requires further research.

Sexual Risk-Taking

Of the twenty studies reviewed by Vézina and Hébert (2007) that reported evidence relating experiencing IPA with females' tendency to engage in sexual relationships with multiple partners, only four found no association. Among the studies

that found a relation, several reported that the younger the age of one's first sexual experience, the greater the risk for later experiencing IPA. Others asserted that having more partners was associated with increased risk. It is possible that a young age at first sexual experience and a high number of sexual partners are characteristic of a broader pattern of risk-taking behavior that may predispose females to developing risky relationships, later characterized by IPA.

Impulsivity, Aggression and Stress

Langer and Lawrence (2008) examined the trajectories of physical IPA within a vulnerability-stress-adaptation framework in a normative sample of newlyweds. Using the Schedule of Nonadaptive and Adaptive Personality-2 (a measure of normal and pathological personality; SNAP-2; Clark et al., in press), the CTS2, and a measure of chronic stress (Hammen et al., 1987), these authors found that women's trait impulsivity (a SNAP-2 Disinhibition-factor marker) and trait aggression (which marks both the SNAP-2 Negative Affectivity/Neuroticism and Disinhibition factors) were unrelated to her partner's physical IPA after controlling for women's stress (a correlate of Neuroticism). Thus, Langer and Lawrence's (2008) data suggest that stress has an impact on the relation between Disinhibition and women's experience of physical IPA. However, this is the only study found examining impulsivity, aggression and stress, so more research into this question is necessary.

Hypothesized Mechanisms of Action

The most often cited reason for the link between externalizing behavior and one's risk of experiencing IPA is assortative mating (e.g., Capaldi & Clark, 1998; Capaldi & Crosby, 1997; Schumacher, Slep & Heyman, 2001). This mechanism suggests that

women with higher levels of externalizing behavior likely are attracted to, or may spend more time with, men who are similarly high in externalizing behavior. These men are more likely to be psychologically/relationally and physical aggressive (Krueger et al., 2007), which increases their romantic partner's risk of experiencing IPA. Further, Vézina and Hébert (2007) note that substance use, in and of itself, increases one's irritability, jeopardizes social interactions, and impairs one's ability to resolve conflict. All of these factors increase one's risk for both perpetrating and experiencing IPA, which themselves are correlated (e.g., Hines & Saudino, 2003).

Five-Factor Model Traits

There is preliminary evidence to suggest that the links between FFM personality traits and IPA differ by IPA type and severity. In one of two cross-sectional studies to examine a bipolar adjective measure of the FFM (Goldberg, 1983) in relation to women's experience of IPA, Buss (1991) reported that women who were lower in Agreeableness experienced greater verbal and physical IPA from their partner. A second, more comprehensive study examining these relations (Hines & Saudino, 2008), used the Eysenck Personality Inventory (EPI; Eysenck, 1964), the IPIP-NEO, and the CTS2 in a sample of college students and found that lower Agreeableness was related to higher rates of moderate (but not severe) physical, psychological and sexual IPA (χ^2 = 12.23, 4.96 and 4.93, respectively); higher Neuroticism was related to higher rates of moderate physical and sexual IPA (χ^2 = 9.37 and 4.46, respectively); higher Extraversion was related to higher rates of psychological IPA (χ^2 = 5.02); and higher Conscientiousness was related to higher rates of sexual IPA (χ^2 = 5.52).

Hypothesized Mechanisms of Action

The behavioral patterns associated with the above FFM personality variables may offer insight into the personality-IPA links described. Low Agreeableness has been cited as a trait that often evokes interpersonal upset and conflict-oriented behaviors from one's romantic partner (Buss, 1991; Graziano, Jensen-Campbell & Hair, 1996). Further, Buss (1991) interviewed spousal partners (perpetrators) about the interpersonal behavioral patterns displayed by the participants (targets) in his study. For targets higher in self-reported Neuroticism, their spouses reported the targets were condescending, possessive, jealous, verbally and physically abusive, unfaithful, inconsiderate, and self-centered on a measure of sources of irritation or upset created for the study. For targets higher in self-reported Extraversion, their spouses reported the targets were condescending, verbally and physically abusive, and self-absorbed. For targets higher in self-reported Conscientiousness, their spouses reported the targets often complained about or insulted their physical appearance. It is possible that these behaviors may play a role in eliciting IPA; it also is possible that the spouses perceived these behaviors inappropriately or simply were claiming on this questionnaire that their spouses had these qualities to justify their own behavior. Finally, in the Buss (1991) study, and consistent with later research (e.g., Hines & Saudino, 2003), the perpetration and experience of all types of IPA themselves were correlated significantly, suggesting that one's use of IPA may also elicit being a target of IPA, or vice versa.

Summary of Personality-Experience of IPA Links

The data linking personality traits to experience of IPA described above are

largely consistent. The studies suggest women's higher levels of Neuroticism and its various aspects generally put women at an increased risk for physical, psychological and sexual IPA. Further, targets' lower Agreeableness is linked to physical, psychological and sexual IPA, although possibly only to moderate, but not severe, physical IPA. Targets' higher Extraversion is linked to psychological IPA in a single study; however, the links between *low* self-esteem and one's experience of IPA render the relation between Extraversion and IPA less consistent, given that some measures of self-esteem are correlated with Extraversion (Watson, Suls, & Haig, 2002). Finally, the data suggest that low Conscientiousness, through its relation to the externalizing spectrum, show links to being a target of both physical and psychological IPA, whereas other studies suggest higher Conscientiousness is linked to sexual IPA, and one study's results suggested that this may be moderated. Thus, the data regarding Conscientiousness are somewhat mixed.

It is important to note that only two of the studies reviewed above specifically used an FFM measure in relation to a woman's risk for experiencing IPA. Thus, the above IPA data are linked to FFM traits largely through theoretical and empirical associations between symptomatology or behavior and personality. Although the data are generally consistent, more comprehensive and targeted research is needed to clarify the suggested links between personality and experiencing IPA. Additionally, I have been unable to identify any studies that specifically address the relation between personality and experiencing IPA among rural North Indian women, which is the sample of the current study. As such, the third and final goal of the study is to examine additional evidence for the links between these two constructs, and to provide initial data on these links in a sample of North Indian women. In other words, this study is intended not only

as an extension of previous research into the links between these two constructs, but as an important first step in also establishing these links in a non-Western culture.

Present Study

The goals of the proposed study are threefold:

1. In Hindi-speaking Indian women, examine the psychometric validity and reliability of a thorough assessment of IPA that previously has been used in multiple languages in the public health domain;
2. In Hindi-speaking Indian women, examine the trait structure of the NEO-FFI to determine the extent to which it conforms to the FFM structure that has been found in many other cultural and geographic groupings and across many languages; and
3. Examine relations between Indian women's FFM traits and their experience of IPA, including physical, psychological and sexual IPA.

In connection with the third goal, this study has two hypotheses:

1. Higher levels of Neuroticism and lower levels of Agreeableness will be related to physical, psychological and sexual IPA and
2. Lower levels of Conscientiousness will be related to physical and psychological IPA, whereas higher levels will be related to sexual IPA.

CHAPTER II. STUDY 1: METHOD

Research Setting: Gorakhpur, Uttar Pradesh

According to the 2001 Indian census (www.censusindia.gov.in), the population of Uttar Pradesh (UP) comprises 16.2 percent of the Indian population, with approximately 166 million citizens. Among the largest and culturally most significant cities in UP are Agra, home of the Taj Mahal, and Varanasi, considered the world's oldest city and the holiest of holy cities to the Hindu religion. Gorakhpur, the setting of this study, has approximately 4 million citizens. Approximately 80% of the population of UP is rural ($India_M$ = 72%) and 61.6% is literate ($India_M$ = 67.6%). The sex ratio in UP is 898 females for every 1000 males across all age groups ($India_M$ = 933:1000), and the average female fertility rate is 3.8 children ($India_M$ = 2.7). As stated earlier, women in UP experience higher than average IPA rates (37% vs. $India_M$ = 27.8%).

Sample Size Analysis

Factor analysis is a method used to investigate the correlational structure of a set of variables. The larger the sample, the more precise are the estimates of the population factor loadings and the more stable they are across repeated sampling (MacCallum, Widaman, Zhang, & Hong, 1999). The minimum sample size necessary for a particular factor-analytic study depends on many considerations, including the level of communalities, factor loadings, number of potential items per factor and the number of factors to be extracted (De Winter, Dodou, & Wieringa, 2009).

De Winter and colleagues (2009) conducted factor analyses of the 44-item BFI, and found that a sample size as small as 120 participants was adequate to recover the known structure of the measure. This factor-analytic situation was optimal in that the

factor loadings were moderate to high, the communalities were moderate, the inter-factor correlations were low, and the item/factor ratio was relatively high. Lodhi and colleagues (2002) reported NEO PI-R facet communalities in their Marathi-speaking Indian sample ranging from .23 (A5 Modesty) to .68 (N1 Anxiety, C1 Competence), with mean communalities of .61, .53, .48, .44 and .61 for Neuroticism, Extraversion, Openness, Agreeableness, Conscientiousness, respectively, and an inter-factor correlation average of .21. Assuming that similar results can be obtained using a Hindi translation of the NEO-FFI, a robust measure with well-determined factors, applying MacCallum and colleagues recommendations to these results yields a sample size of 100 to 200 in the proposed study to recover the FFM structure.

The DVM, a measure of IPA, likely also will lend itself well to factor analysis. According to MacCallum and colleagues (1999), an item:factor ratio of 5:1 is desirable to achieve simple structure and well-specified factors; when factors are well-specified (i.e., have multiple clear markers per factor) sample size may have less impact on the results. The DVM includes several items per hypothetical factor (e.g., 6 potential physical IPA items) with a total of 20 items hypothesized to form four factors (see Table 12; discussed in detail below), so it falls in this desirable range. Further, Jones and colleagues (2002) reported consistently moderate to high CTS2 item communalities ranging from .48 (sprain or bruise) to .86 (punched or hit with object), with an average of .69; only two items had communalities below .50. Due to their similarity, it is possible to extrapolate from the CTS2 data that the DVM also is likely to display moderate to high communalities for the physical and sexual IPA items. CTS2 psychological IPA item communalities range from .52 to .73 (Jones et al., 2002), and given that the DVM

includes substantially more psychological IPA items than the CTS2, these items also are likely to have high communalities. MacCallum and colleagues (1999) gave a general guideline of approximately 200 participants in an empirical situation in which communalities may be low but the factors are overdetermined. Therefore, although the communalities in an analysis of the DVM may be high, they currently are unknown, so I chose a final sample size of 250 to ensure reasonably precise and stable factor-loading estimates.

Participants

Participants in this study were 251 rural women living in the villages surrounding the city of Gorakhpur, UP, India recruited over a 6-week study period (November 15, 2009-December 31, 2009). Women were eligible to participate if they were 18 years or older, married, and currently cohabiting with their spouse. The sample was limited to women over the age of 18 to be consistent with the U.S. Institutional Review Board definition of adults, and to married women who were cohabiting with their spouse to ensure some degree of homogeneity in the partner relationship.

Participants were recruited through *Mahila Samakhya*, a local organization operating in and around Gorakhpur, whose primary purpose is to improve local women's health (agreement from the director of *Mahila Samakhya* to aid in the administration of this project is included in Appendix A). During the course of their work, employees of *Mahila Samakhya* most frequently encounter women experiencing IPA in two ways. Some women approach *Mahila Samakhya* seeking mediation with their violent husbands as a preventive measure against divorce. Other women are identified during the employees' fieldwork in areas of Gorakhpur or the villages around Gorakhpur. The

purpose of this fieldwork is not specifically to identify cases of IPA, but to identify women who need help with any aspect of women's health, including nutrition and medical services. Women who met inclusion criteria were identified and contacted for participation in the present study by the *Mahila Samakhya* employees before the principal investigator (PI) arrived for the study period.

Procedure

Study Materials

Prior to the study, four individuals fluent in both English and Hindi reviewed the translated study materials for their translation accuracy. All four individuals stated that the personality questionnaire translation was largely accurate in content but not in style. Specifically, they stated that they did not believe that the rural, largely illiterate Indian women who were being recruited for the study would be able to understand what the questionnaire was asking, even if it was read to them. One commented that it used "Ph.D.-level Hindi" for some items. Therefore, it was determined that the questionnaire could not be used in its original form.

To clarify the nature of the translation of this measure, two of these reviewers performed a back-translation of the measure from Hindi into English before the study period began. The first translator was raised speaking Hindi, but obtained a graduate degree in America and has lived in America for the last 10 years. The second was raised speaking Hindi and educated as a pediatrician in India, but has practiced medicine in America for the last 5 years. These back-translations (see Appendix B where the original item is given first, followed by the two back-translations) verified that the Hindi measure was largely faithful to the original in both content and tone, with notable exceptions.

Overall, the back-translation revealed that 6 of the 60 items were not translated faithfully in either content or tone (items 12, 13, 16, 18, 32 and 58), half of which were Openness items. For example, item 13 (an Openness item) "I am intrigued by the patterns I find in art and nature" back-translated into "Sometimes I get confused by the depictions found in nature and the arts" and "Different forms of art and nature sometimes leave me flabbergasted." In this case, a single word "intrigued" vs. "confused" vs. "flabbergasted" completely changed the meaning of the item, and, importantly, that both back-translators produced "mistranslated" items supports the invalidity of this item's translation.

Other items were not as problematic, but could be considered somewhat different in tone. For example, item 12 (an Extraversion item) in the original is "I don't consider myself especially 'light-hearted'," was back-translated to "I generally do not consider myself to be an extravert." Given that this item is an Extraversion item, the difference between the two items is not especially troublesome. However, the back-translated item is missing the nuance of light-heartedness and assesses directly the participants' abstract understanding of the broad construct rather than assessing a specific example of the construct. Finally, for five items at least one back-translator did not know what the original Hindi word meant (items 14, 42, 43, 46 and 53). As a general comment, the translators noted that the Hindi version often used overly sophisticated and complex words aimed at a highly educated, scholarly population in contrast to the English version, which used simpler, colloquial language.

It was critical the *Mahila Samakhya* employees who would have contact with participants held the same understanding of every personality questionnaire item and

asked the items of participants in the same way. Therefore, these employees, the *Mahila Samakhya* director, the PI, and a fluent Hindi-English bilingual speaker with a graduate degree in psychology met and discussed each personality questionnaire item in terms of its content and intent. The PI and the bilingual speaker together determined a way of phrasing each item that remained true to the original and this was explained to the *Mahila Samakhya* employees, who were given a chance to ask questions until they assured the PI they understood every item.

Recruitment Method and Informed Consent

Before the recruitment period began, the PI had several phone conversations with the *Mahila Samakhya* director to discuss the goals, risks, and benefits of participation in the study, during which time the director and the PI jointly determined what they considered the best way to approach potential participants. The director then explained the study process and the role of the *Mahila Samakhya* employees in the study to those employees who participated in administering the study, after which recruitment began.

As stated earlier, *Mahila Samakhya* employees approached potential participants during the course of their regular work with women in and around Gorakhpur before the study period. At the time of the initial contact, the employees explained the study goals and risks and benefits for study participation; potential participants also were given an opportunity to ask questions. If the women indicated a willingness to participate when approached before the study period, their name and the contact information they preferred to be used to contact them (e.g., phone, letter, home visit) were added to a database of potential participants that was kept in a secure file in the *Mahila Samakhya* office. When the study period began, *Mahila Samakhya* employees contacted these

women using each woman's preferred method. During this contact, participants who indicated a willingness to complete the study procedure were invited to the *Mahila Samakhya* office where formal informed consent and the study protocol took place.

Formal consent was completed verbally; the University of Iowa Institutional Review Board did not require a signed consent document. The *Mahila Samakhya* employees read the full consent document to the participants and asked if they had any questions about the study goals, procedure, risks, or benefits. Further, participants were informed that the questions were personal in nature and explored various aspects of the relationship between her and her husband. Participants were assured of complete confidentiality, that they were not required to answer any questions they did not wish to answer for any reason, that they were free to withdraw their participation at any time and still receive compensation, that a code number rather than their names would be recorded on all study measures, and that the written record of their responses would be stored in a secure cabinet.

To minimize the possibility of coercion or undue influence, compensation for participation in the study was provided at a rate consistent with local pay for one day's work (approximately $2.50/100 rupees). Further, participants had ample time to consider participation or to discuss participation with friends or family before the formal consent process. Finally, women were assured that the only way their families would know that they participated in the study would be if they told them, because they would be participating in the study outside of their homes.

After giving informed consent, participants were asked to complete a sociodemographic questionnaire, a personality questionnaire, and an IPA structured

interview (described below).

Participant Protections

Because this study assessed potentially sensitive information, various protections for the participant were built into the study procedure. First, because *Mahila Samakhya* employees regularly encountered IPA among the women they work with, they already were sensitive to addressing IPA issues, skilled in building rapport with potentially vulnerable women, and experienced in managing safety and ethical concerns that are specific to IPA. During the normal course of their duties, *Mahila Samakhya* employees often act as mediators between couples who experience IPA. Therefore, care was taken to ensure that no *Mahila Samakhya* employee would serve as both a mediator and a research assistant for a given participant, and participants were assured of this fact. This protected both the confidentiality of participants and addressed any conflict-of-interest concerns for the *Mahila Samakhya* employees.

Second, the anonymity of the participants and their participation was protected by the fact that Gorakhpur is a large city and women participated in the study away from their homes at the *Mahila Samakhya* office, which is located in a building with other offices in the city proper. This arrangement also protected women against potential gossip, because no one could know the purpose of a woman entering the building where the office is located.

Third, informed consent was obtained at the start of data collection, and respondents were advised that the questions were personal in nature and explored various aspects of the relationship between her and her husband. Participants were assured of complete confidentiality outside the research team, that code numbers rather than their

names were used on all study materials and that the written record of their responses would be stored in a secure cabinet.

Finally, the *Mahila Samakhya* director prepared a document of *Mahila Samakhya*'s and other local agencies' services available to women experiencing IPA, which was provided to every woman who participated in this study. These participant protection measures are very similar to those used in the MEASURE DHS project, and are consistent with the World Health Organization Guidelines (Garcia-Moreno, 2001) for conducting research on IPA.

Study Measures

Sociodemographic Information

Participants were asked to provide information about themselves on various sociodemographic variables (e.g., current age, age at marriage) to provide a thorough picture of the sample's characteristics (see Appendix C).

Personality Questionnaire

The 60-item NEO-FFI is a well-validated measure of the FFM, a shortened version of the NEO PI-R that assesses only the five higher order domains—Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness. The measure uses a five-point, Likert response format (strongly agree to strongly disagree). The reliability and validity of the NEO-FFI has been demonstrated widely (see *The Five-Factor Model of Personality* section above). Psychological Assessment Resources, Inc., the publishers of the NEO-FFI, have developed a Hindi version of the measure, but it had not been used in any Indian research, as far as I could determine. As discussed previously, the NEO-FFI and NEO PI-R have been translated into other Indian languages

and used in previous research (see *Cross-Culture Generalizability of the Five-Factor Model of Personality to India* section above). This research has demonstrated the reliability and validity of the NEO-FFI and NEO PI-R in several Indian samples.

Domestic Violence Module

The IPA assessment used is the DVM (see Appendix D), a structured interview used by the MEASURE DHS project (see *The NFHS Domestic Violence Module* section above). As described earlier, the DVM is a shortened and modified version of the CTS2 (see *The Revised Conflicts Tactics Scales* and *The NFHS Domestic Violence Module* sections above). I was unable to locate any information on the interview's psychometric properties, but given its basis in the CTS2, which has good psychometric properties, it seems likely that the DVM will have at least adequate psychometric properties.

The authors of the DVM asserted that the measure captures several IPA dimensions (Table 12), which may aggregate to form reliable IPA scales: Physical (6 items), Psychological (10 items; Marital Control [6 items] and Verbal IPA [4 items]) and Sexual (4 items; Measure DHS, 2005). The Marital Control items were added specifically in the development of this measure to assess more completely the nonverbal psychological IPA domain, which critics had argued that the CTS2 failed to measure adequately. It is an empirical question whether these items are best considered part of the psychological IPA construct along with verbal IPA, or whether they are statistically distinct. Further, several DVM items that currently are not classified under one of these four dimensions are potentially relevant to this analysis (listed in Table 12 under "Miscellaneous"). These items address the onset of IPA in the marriage, injuries resulting from IPA, the husband's alcohol use, questions concerning abuse by other

marital family members, IPA during pregnancy, and IPA in the woman’s natal family.

Table 1. Physically Aggressive Acts in Western IPA Measures

Measure	Subscale	Acts
Abuse Within Intimate Relationships Scale[1]	Overt Violence	Shoved; pushed; forcefully pushed; used an object to hit; thrown objects; had pushing matches; physically attacked
	Restrictive Violence	Forcefully squeezed; grabbed roughly; grabbed arm
Composite Abuse Scale[2]	Severe Combined Abuse	Kept from medical care; locked in bedroom; raped; tried to rape; put foreign objects into vagina; took wallet and left stranded; used a knife or gun or other weapon; refused to let work outside home
	Physical Abuse	Slapped; beat up; hit or tried to hit with object; kicked; hit with fist; threw; pushed; grabbed; shoved; shook
Revised Conflict Tactics Scales[3]	Physical Assault	Kicked; punched; slapped; beat up; hit with object; choked; slammed against wall; grabbed; threw object; used knife or gun; pushed; shoved; twisted arm or hair; burned or scalded on purpose
	Injury	Cut or bleeding; went to doctor for injury; needed to see doctor but did not; felt pain the next day; sprain or bruise could see; private parts bled

(table continues)

Table 1 (cont.)

Measure	Subscale	Acts Included
Severity of Violence Against Women Scales[5]	Mild Violence	Held down; pinned in place; pushed; shoved; shook; roughly handled; grabbed suddenly or forcefully
	Minor Violence	Scratched; pulled hair; twisted arm; spanked
	Moderate Violence	Slapped with the palm of hand; slapped with back of hand; slapped around face and head
	Serious Violence	Kicked; hit with object; stomped on; choked; punched; burned with something; used a club-like object; beat up; used a knife or gun
Abusive Behavior Inventory[6]	Physical Abuse	Pushed; grabbed; shoved; slapped; hit; punched; pressured to have sex in a way that target didn't like or want; spanked; kicked; physically forced to have sex; threw around; physically attacked the sexual part of target's body; choked; strangled; used a knife; gun or other weapon
Index of Spouse Abuse[7]	Physical	Became surly or angry if target tells perpetrator he drinks too much; made perform sex acts target did not enjoy or like; punched with fists; threatened with weapon; beat so badly target needed medical help; screamed; yelled; slapped

(table continues)

Table 1 (cont.)

Measure	Subscale	Acts Included
	Physical (cont.)	around face and head; became abusive when drinking; acted like a bully; frightened; acted like perpetrator would kill target
Conflict Tactics Scales[8]	Violence	Slapped; kicked; hit with fist; hit or tried to hit with object; beat up; threw something; pushed; grabbed; shoved; threatened to hit or throw object
	Serious Violence	Threatened with knife or gun; used knife or gun

Note. (1) Bjoresson, Aarons & Dunn, 2003; (2) Hegarty, Sheehan & Schonfeld, 1999; (3) Straus, Hamby, Boney-McCoy & Sugarman, 1996; (4) Rodenburg & Fantuzzo, 1993; (5) Marshall, 1992; (6) Shepard & Campbell, 1992; (7) Hudson & McIntosh, 1981; (8) Struas, 1979.

Table 2. Percent of Measures Citing Physically Aggressive Acts in Western IPA Measures

Act	% Measures Citing Act
Kicked	88
Slapped	88
Hit with object	75
Punched	75
Shoved	75
Pushed	63
Beat up	50
Grabbed	50
Hit	50
Used weapon against target	50
Threw object	38
Choked	25
Shook	25
Threw	25

Note. Acts cited only once are not included.

Table 3. Psychologically Aggressive Acts in Western IPA Measures

Measure	Subscale	Acts Included
Follingstad Psychological Aggression Scale[1]	N/A	Made threats/intimidated; destabilized the target's perception of reality; isolated/ monopolized; treated as inferior; established power through refusals; verbally abused/criticized; was jealous/suspicious; monitored/ checked; enforced rigid gender roles; controlled personal behavior; withheld emotionally/ physically; publicly embarrassed/humiliated; emotionally wounded around fidelity; lied/deceived; induced guilt/blamed; manipulated; attacked looks/sexuality
Abuse Within Intimate Relationships Scale[2]	Emotional Abuse	Mocked; sneered at; criticized; insulted; ridiculed; belittled; degraded
	Deception	Betrayed; deceived; kept secrets; lied to
	Verbal Abuse	Blamed for uncontrollable things; ignored; given silent treatment; used profanity; screamed at
Multidimensional Measure of Emotional Abuse[3]	Hostile Withdrawal	Sulked or refused to talk about issue; refused to acknowledge problem; refused to discuss problem; acted cold or distant when angry

(table continues)

Table 3 (cont.)

Measure	Subscale	Acts Included
	Domination/Intimidation	Told "you'll never get away from me" in an angry or threatening way; threatened to throw something at target; intentionally destroyed belongings; threatened to harm target's friends
	Denigration	Said that target would never amount to anything; called target a loser; failure; or similar term; called target ugly; called target worthless
	Restrictive Engulfment	Complained target spends too much time with friends; asked where she had been or who she had been with in a suspicious manner; got angry because target went
Composite Abuse Scale[4]	Severe Combined Abuse	See Table 1
	Emotional Abuse	Tried to convince family; friends and children that target was crazy; told was crazy; became upset if dinner/housework was not done when they thought it should be; told was not good enough; told was stupid; tried to keep from seeing or talking to family; tried to turn family; friends and children against target; did not allow to socialize with female friends; told no one would ever want target; told was ugly; blamed target for perpetrator's violence

(table continues)

Table 3 (cont.)

Measure	Subscale	Acts Included
	Harassment	Harassed on phone; lingered outside house; followed; harassed at work
Revised Conflict Tactics Scales[5]	Psychological Aggression	Insulted or swore; shouted; stomped out of room; threatened to hit or throw something; destroyed something of target's; acted to spite target; called target fat or ugly; accused target of being lousy lover
Measure of Wife Abuse[6]	Psychological Abuse	Stole possessions; took car keys; took wallet; disabled car; imprisoned; locked in; harassed over phone; stole food or money; harassed at work; hung around; followed; locked out; electricity off; kidnapped children; attempted suicide
	Verbal Abuse	Told no one want; told not good; told horrible wife; told ugly; told stupid; told crazy; called bitch; told lazy; called whore; called cunt; told kill you; told kill family; told take children; told kill children
Severity of Violence Against Women Scales[7]	Symbolic Violence	Hit or kicked a wall, door or furniture; threw; smashed or broke an object; drove dangerously with target in the car; threw an object at
	Threats of Mild Violence	Shook a finger at; made threatening gestures or faces at; shook a fist at; acted like a bully toward

(table continues)

Table 3 (cont.)

Measure	Subscale	Acts Included
	Threats of Moderate Violence	Destroyed something belonging to target; threatened to harm or damage things target cared about; threatened to destroy property; threatened someone target cares about
	Threats of Serious Violence	Threatened to hurt; threatened to kill self; threatened with a club-like object; threatened with a knife or gun; threatened to kill; threatened with a weapon; acted like wanted to kill target
Abusive Behavior Inventory[8]	Psychological Abuse	Humiliated; degraded; restricted social contact; frightened with actions or gestures; threatened to harm self; threatened to harm others; demanded compliance; restricted financial resources
Test of Negative Social Exchange[9] (adapted for use in romantic relationships)	Hostility/Impatience	Lost temper; yelled; was angry; was impatient; nagged; disagreed
	Insensitivity	Took for granted; took advantage of; was inconsiderate; ignored target's wishes or needs; took target's feelings lightly

(table continues)

Table 3 (cont.)

Measure	Subscale	Acts Included
	Interference	Distracted target when she was doing something important; was too demanding of target's attention; invaded target's privacy; prevented target from working on their goals
	Ridicule	Made fun of target; laughed at target; gossiped about target
Psychological Maltreatment of Women Inventory[10]	Dominance/Isolation	Isolated from resources; demanded subservience; rigidly observed traditional sex roles
	Emotional/Verbal	Verbally attacked; demeaned; withheld emotional resources
Index of Spouse Abuse[11]	Physical	See Table 1
	Nonphysical	Belittled; demanded obedience; became upset if work was not done; was jealous or suspicious; told ugly; told unattractive; told could not manage without perpetrator; acted like target was personal servant; insulted or shamed in front of others; became angry if point of view disagreed with; was stingy with money; belittled intellectually; demanded target stay home; felt target should not work or go to school; was not kind; ordered around; had no respect for feelings; acted like would kill target

(table continues)

Table 3 (cont.)

Measure	Subscale	Acts Included
Conflict Tactics Scales[12]	Verbal Aggression	Sulked; refused to talk; stomped out of room/house/yard; did or said something to spite target

Note. (1) Follingstad, Coyne & Gambone, 2005; (2) Bjoresson, Aarons & Dunn, 2003; (3) Murphy & Hoover, 1999; (4) Hegarty, Sheehan & Schonfeld, 1999; (5) Straus, Hamby, Boney-McCoy & Sugarman, 1996; (6) Rodenburg & Fantuzzo, 1993; (7) Marshall, 1992; (8) Shepard & Campbell, 1992; (9) Ruehlman & Karoly, 1991; (10) Tolman, 1989; (11) Hudson & McIntosh, 1981; (12) Struas, 1979.

Table 4. Categories of Psychologically Aggressive Acts, Average Number of Acts within Categories Per Measure and Percent of Measures Including Acts Within Each Category Across Western IPA Measures

Act Category	Avg.	%	Acts within Category
Belittled/Criticized	3.33	92	Belittled, criticized, degraded, demeaned, insulted, laughed at, made fun of, mocked, ridiculed, sneered at, verbally abused/ attacked
Angry Behavior	1.75	82	Angry, angry if disagreed with, angry over time spent away from home, angry gestures, angry statements, became surly/angry, lost temper, screamed at, stomped out of yard/room, upset if work not done, used profanity, yelled/shouted
Threatening Behavior	1.92	64	Acted like a bully, acted like perpetrator would kill target, hit/kicked wall/door/furniture, threatened/intimidated, threatened others target cares about, threatened to destroy property, threatened to hit target, threatened to kill target, threatened to throw object at target, threatened with weapon, threw object at target, frightened
Took Advantage of/ Inconsiderate	1.08	45	Did/said something to spite target, ignored target's wishes/ needs/feelings, inconsiderate, ordered target around, stole from target, took advantage, took feelings lightly, took for granted, treated as inferior, treated like servant, unkind
Withheld	0.83	45	Acted cold/distant, gave target silent treatment, ignored, refused to acknowledge problem,

(table continues)

Table 4 (cont.)

Act Category	Avg.	%	Acts within Category
Withheld (cont.)			refused to discuss problem, withheld emotionally/physically, sulked
Restricted Socially	0.64	36	Complained about time spent away from home, prevented socializing, tried to convince others target was crazy, tried to keep target from seeing friends/family, tried to turn others against target
Demanded	0.36	36	Demanded attention, demanded compliance, demanded obedience
Embarrassed/Humiliated	0.36	36	Embarrassed, gossiped about, humiliated
Jealousy/Suspiciousness	0.36	36	Asked where target was and who they were with, invaded target's privacy, jealous/suspicious
Destroyed	0.36	27	Destroyed target's belongings/possessions
Blamed	0.27	27	Blamed for uncontrollable acts, blamed for violence, induced guilt/blamed
Suicidal/Self-Harming	0.27	27	Attempted or threatened suicide/self-harm
Restricted Physically	0.91	18	Disabled car, imprisoned, kept from medical care, locked in, locked out, refused to let target outside home, took target's car keys, took target's wallet and left her stranded
Harassed	0.72	18	Followed, harassed at work, harassed over phone, hung around
Betrayed	0.54	18	Betrayed, emotionally wounded target regarding perpetrator's fidelity, lied/deceived, kept secrets

Note. Acts that are cited only once and that do not fall into these categories are not included.

Table 5. Sexually Aggressive Acts in Western IPA Measures

Measure	Subscale	Acts Included
Sexual Experiences Survey[1]	Sexual Contact	Specified "without my consent": Fondled; kissed; rubbed against private areas; removed clothes; had oral sex; made to have oral sex; put penis into vagina; inserted fingers or objects into vagina; put penis into butt; inserted fingers or objects into butt; tried to have oral sex; tried to make to have oral sex; tried to put penis into vagina; tried to insert fingers or objects into vagina; tried to put penis into butt; tried to insert objects or fingers into butt
	Sexual Coercion	Told lies; threatened to end relationship; threatened to spread rumors about target; made promises that were untrue; continually used verbal pressure after target said no; showed displeasure; criticized sexuality or attractiveness; got angry but did not use physical force after target said no; took advantage while target was drunk or too out of it to stop act; threatened to physically harm target or someone close to target; used force
Revised Conflict Tactics Scales[2]	Sexual Coercion	Used forced to make target have sex; used threats to make target have anal sex; used force to make target have anal sex; insisted on anal sex (no force); insisted on sex without a condom (no force)

(table continues)

Table 5 (cont.)

Measure	Subscale	Acts Included
	Injury	See Table 1
Measure of Wife Abuse[3]	Sexual Abuse	Inserted objects into vagina; tried to rape; forced sex with other partners; raped; forced sex acts; cut pubic hair; prostituted; forced sex with object; squeezed breasts; forced watching pornography; mutilated genitals; forced sex with animals
Severity of Violence Against Women Scales[4]	Sexual Violence	Demanded sex whether target wanted to or not; forced oral sex against will; forced sexual intercourse against will; physically forced sex; forced anal sex against will; used an object in a sexual way
Coercive Sexuality Scale[5]	Coerced Sexual Behavior	Specified "against her will": Held hand; kissed; placed hand on knee; placed hand on breast; placed hand on thigh or crotch; unfastened outer clothing; removed or disarranged outer clothing; removed or disarranged underclothing; removed own underclothing; touched genital area; had intercourse

(table continues)

Table 5 (cont.)

Measure	Subscale	Acts Included
	Coercive Sexual Methods	Ignored protests; used verbal threats; used physical restrain; used threats of physical aggression; used physical aggression; threatened to use weapon; used a weapon
Index of Spouse Abuse[6]	Physical	See Table 1

Note. (1) Koss et al., 2007; (2) Straus, Hamby, Boney-McCoy & Sugarman, 1996; (3) Rodenburg & Fantuzzo, 1993; (4) Marshall, 1992; (5) Rapaport & Burkhart, 1984; (6) Hudson & McIntosh, 1981.

Table 6. Percent of Measures Citing Sexually Aggressive Acts in Western IPA Measures

Act	% Measures Citing Act
Forced to have sex	71
Pressured to have sex in way target did not want*	57
Fondled	43
Forced sex with object	43
Put foreign object into vagina	43
Used verbal threats*	29
Insisted on sex (no force)*	29
Kissed without target's consent	29
Forced anal sex	29
Removed target's clothes without consent	29
Tried to rape	29

Note. *Indicates sexually coercive method. Only items cited more than once are included.

Table 7. Psychometrics of Western IPA Measures

Measure	Scale (# Items)	Internal Consistency α_M	Internal Consistency IIC_M	Convergent Validity (r_M)	Criterion Validity (r)	Discriminant Validity (r)	Relations among Measures' Subscales (r)
			Physical IPA Scales				
CTS	Physical Aggression (9)	.83[a, b]	.35	.28[a]; .66[c]		*M* = -.06 (*ns*)[d]	
ISA	Physical (11)	.85[e,f]	.51	.82[c]; .38[e]; .75[f]	.73[e]	*M* = .11 (*ns*)[e]	.92[g]
SVAWS	Mild Violence (4)	.88[h,i]	.65	.58[i]		.05 (*ns*)[i]	.34 to .88 (*M* = .69)[h]
	Minor Violence (5)	.68[h,i]	.30	.51[i]		.12 (*ns*)[i]	
	Moderate Violence (3)	.86[h,i]	.67	.48[i]		.10 (*ns*)[i]	
	Severe Violence (9)	.77[h,i]	.27	.54[i]		.12 (*ns*)[i]	
ABI	Physical Abuse (10)	.82[c,d]	.31	.26[c]; .71[d]	F ratio $p < .001$[c]	*M* = .05 (*ns*)[c]	.43 to .51 (*M* = .47)[c]
AWIRS	Total (10)	.92[b]	.53	.38[b]			.19 to .59 (*M* = .42)[a]
	Overt Violence (7)	.86[a]	.47	*ns*[b]			
	Restrictive Violence (3)	.77[a]	.53	*ns*[b]			
CAS	Physical Abuse (17)	.94[j]	.48	.84[j]			.75 to .61[j]
	Severe Combined Abuse (15)	.91[j]	.50	.62[j]			
MWA	Physical Abuse (9)	.81[k]	.28	47[k]		-.09 (*ns*)[k]	.41 to .56 (*M* = .49)[k]
CTS2	See "Revised Conflict Tactics Scales Reliability Data" and "Revised Conflict Tactics Scales Validity Data" in text						

(table continues)

Table 7 (cont.)

Measure	Scale (# Items)	Internal Consistency α_M	Internal Consistency IIC_M	Convergent Validity (r_M)	Criterion Validity (r)	Discriminant Validity (r)	Relations among Measures' Subscales (r)
AVERAGE		.84	.45	.55		.11	
				Psychological IPA Scales			
MMEA				.42[l]			.51 to .64 (M = .57)[l]
	Denigration (17)	.75[l]	.15	39[d]		M = .07 (ns)[d]	
	Dominance/Intimidation (15)	.72[l]	.15	.37[d]		M = .01 (ns)[d]	
	Hostile Withdrawal (9)	.91[l]	.53	.34[d]		M = -.23[s]; M = .07 (ns)[d]	
	Restrictive Engulfment (13)	.79[l]	.22	.33[d]		M = .13 (ns)[d]	
ABI	Psychological Abuse (20)	.88[m,n]	.27	.22[m]; .74[n]	F ratio p < .001[c]	.07 (ns)[m]; .02 to .18[n]	
AWIRS	Deception (4)	.80[o]	.50	.43[p]			
	Emotional Abuse (7)	.87[o]	.49	.59[p]			
	Verbal Abuse (5)	.73[o]	.35	.35[p]			
CTS	Verbal Aggression (5)	.80[a,p]	.44	.18[a]			
PMWI	Dominance/Isolation (7)	.89[c,s]	.54	.72[c];.51[c]	p < .15 to .001[c]	M = -.06 (ns)[c]	
	Emotional/Verbal (7)	.92[c,s]	.62	.73[c];.56[c]	p < .15 to .001[c]	M = -.02 (ns)[c]	

(table continues)

Table 7 (cont.)

Measure	Scale (# Items)	Internal Consistency α_M	Internal Consistency IIC_M	Convergent Validity (r_M)	Criterion Validity (r)	Discriminant Validity (r)	Relations among Measures' Subscales (r)
SVAWS	Symbolic Violence (4)	.74[h,i]	.42	.36[i]		-.05 (*ns*)[i]	
	Threats-Mild Violence (4)	.82[h,i]	.53	.38[i]		-.09 (*ns*)[i]	
	Threats-Moderate Violence (4)	.82[h,i]	.53	.34[i]		-.02 (*ns*)[i]	
	Threats-Serious Violence (7)	.86[h,i]	.47	.24[i]		.17[i]	
ISA	Nonphysical (19)	.92[e]	.38	.46[e]; .92[c]	.80[e]	*M* = .14 (*ns*)[e]	
CAS	Emotional Abuse (9)	.93[j]	.60	.76[j]			
	Harassment (7)	.87[j]	.49	.62[j]			
FPAS	Total (51)	.98[r]	.49			-.09 to .07 (*ns*)[r]	
MWA	Psychological Abuse (15)	.94[k]	.51	23[k]		.05 (*ns*)[k]	
	Verbal Abuse (14)	.83[k]	.26	37[k]		-.11 (*ns*)[k]	
TENSE				.45[r]			.34 to .74 (*M* = .53)[r]
	Hostility/Impatience	.85[l]	.49				
	Insensitivity	.83[l]	.49				
	Interference	.74[l]	.42				
	Ridicule	.65[l]	.38				

(table continues)

Table 7 (cont.)

Measure	Scale (# Items)	Internal Consistency α_M	Internal Consistency IIC_M	Convergent Validity (r_M)	Criterion Validity (r)	Discriminant Validity (r)	Relations among Measures' Subscales (r)
CTS2	See "Revised Conflict Tactics Scales Reliability Data" and "Revised Conflict Tactics Scales Validity Data" in text						
AVERAGE		.83	.42	.46		.01	
				Sexual IPA Scales			
CSS	Coerced Sexual Behaviors and Methods*	.95[t,q]	.73	.25[t]; .57[q]	*M* = -.02[t]		
SES	Sexual Coercion	.32[i]	.04	.14 (*ns*)[i]		-.14 (*ns*)[i]	.52[i]
	Sexual Contact	.54[i]	.09	.09 (*ns*)[i]; .57[q]		-.20[i]	
SVAWS	Sexual Violence	.82[h,i]	.43	.26[i]		.05 (*ns*)[i]	
MWA	Sexual Abuse	.73[k]	.18	.35[k]		-.05 (*ns*)[k]	
CTS2	See "Revised Conflict Tactics Scales Reliability Data" and "Revised Conflict Tactics Scales Validity Data" in text						
AVERAGE		.67	.31	.32		-.09	

Note. All correlations reported were significant unless otherwise indicated. * These two subscales are scored together. AWIRS: Abuse Within Intimate Relationships Scale; ABI: Abusive Behavior Inventory; CAS: Composite Abuse Scale; CSS: Coercive

(table continues)

Table 7 (cont.)

Sexuality Scale; CTS2: Revised Conflict Tactics Scales; FPAS: Follingstad Psychological Aggression Scale; ISA: Index of Spouse Abuse; MMEA: Multidimensional Measure of Emotional Abuse; MWA: Measure of Wife Abuse; PMWI: Psychological Maltreatment of Women Inventory; SVAWS: Severity of Violence Against Women Scales; SES: Sexual Experiences Survey; TENSE: Test of Negative Social Exchange. Convergent Validity: Correlations with measures of a theoretically related domain; Discriminant Validity: Correlations with measures of a theoretically unrelated domain; Criterion-Related Validity: Ability to discriminate between IPA/non-IPA groups. ITC: Item-Total Correlation. IA: Interspousal Agreement. Studies referenced by superscripts are outlined in Table 8.

Table 8. Characteristics of Table 7 Studies

(Table 7 Reference) Study	Sample (*N*)	Convergent Validity Measure(s)	Discriminant Validity Measure(s)
(a) Fals-Stewart, Lucente & Birchler, 2002	Males in IPA Program (134)	Number of days of face-to-face contact with partner	
(b) Straus, 1979	Husband-wife pairs (2528)	N/A	N/A
(c) Tolman, 1999	Community females (100)	CTS Index of Marital Satisfaction ISA Brief Symptom Inventory	
(d) Murphy & Hoover, 1999	Female undergraduates (157)	CTS Violence Inventory of Interpersonal Problems (Cold, Vindictive, Domineering, Intrusive scales)	Balanced Inventory of Desirable Responding Inventory of Interpersonal Problems (Overly Nurturant, Exploitable, Non-assertive Socially Avoidant scales)
(e) Hudson & McIntosh, 1981	Students (586)	Generalized Contentment Scale Index of Self-Esteem Index of Marital Satisfaction	Problems with work associates Problems with quality of work Problems with friends

(table continues)

Table 8 (cont.)

(Table 7 Reference) Study	Sample (*n*)	Convergent Validity Measure(s)	Divergent Validity Measure(s)
		Index of Sexual Satisfaction	Problems with family members
(f) Chen, Rovi, Vega, Jacobs & Johnson, 2005	Community females (202)	Women Abuse Screening Tool HITS (Hurt, Insulted, Threatened with Harm, Screamed at)	
(g) Cook, Conrad, Bender & Kaslow, 2003	Community females (883)	N/A	N/A
(h) Marshall, 1992	Female undergraduates (707)	N/A	N/A
	Community women (208)	N/A	N/A
(i) Cook, 2002	Male inmates (160)	CTS2 SES	Marlowe-Crowne Social Desirability Scale
(j) Hegarty, Bush & Sheehan, 2005	Community females (427)	CTS (except Reasoning scale)	
(k) Rodenburg & Fantuzzo, 1993	Community females (164)	CTS Verbal Aggression CTS Violence	CTS Reasoning
(l) Ro & Lawrence, 2007	Husband-wife pairs (100)	CTS2 Psychological Aggression CTS2 Physical Assault	

(table continues)

Table 8 (cont.)

(Table 7 Reference) Study	Sample (*n*)	Convergent Validity Measure(s)	Divergent Validity Measure(s)
		MMEA	
		TENSE	
		Marital Adjustment Test	
		Beck Depression Inventory-2	
		Marital Satisfaction Inventory-Revised	
(m) Shepard & Campbell, 1992	Husband-wife pairs	Clinician's assessment of abuse	Age
	(Male *n* = 100)	Client's assessment of abuse	Household size
	(Female *n* = 78)	Arrest history of abuser	
(n) Zink, Klesges, Levin & Putnam, 2007	Community females (##)	CTS2 Subscales	
(o) Borjesson, Aarons & Dunn, 2003	Undergraduates (1022)	N/A	N/A
(p) Denson, Pedersen & Miller, 2006	Community adults (1013)	Displaced Aggression Questionnaire	N/A
(q) Ouimette, Shaw, Drozd & Leader, 2000	Male undergraduates (62)	SES	
		CSS	

(table continues)

Table 8 (cont.)

(Table 7 Reference) Study	Sample (*n*)	Convergent Validity Measure(s)	Divergent Validity Measure(s)
(r) Follingstad, Coyne & Gambone, 2005	Undergraduates (383)		Balanced Inventory of Desirable Responding Modified Version of the Specific Interpersonal Trust Scale Internality and Powerful Others Scales Anxiety Scale of the Experiences in Close Relationships Questionnaire Sex Roles, Interpersonal Sensitivity, Paranoia, Hostility
(s) Jones, Davidson, Bogat, Levendosky & von Eye, 2005	Community females (172)	Subtle and Overt Psychological Abuse PMWI Isolation/Domination PMWI Verbal/Emotional SVAWS Psychological Abuse Beck Depression Inventory	

(table continues)

Table 8 (cont.)

(Table 7 Reference) Study	Sample (*n*)	Convergent Validity Measure(s)	Divergent Validity Measure(s)
		PTSD Scale for Battered Women	
		Brief Symptom Inventory	
		Dyadic Adjustment Scale-Short Form	
		Rosenburg Self-Esteem Scale	
(t) Rapaport & Burkhart, 1984	Male undergraduates (201)	Adversarial Sexual Beliefs	Sex Role Satisfaction
		Acceptance of Interpersonal Violence	Sex Role Stereotyping
		Endorsement of Force Scale	Sexual Conservatism
			Attitudes Toward Women Scale

Note. AWIRS: Abuse Within Intimate Relationships Scale; ABI: Abusive Behavior Inventory; CAS: Composite Abuse Scale; CSS: Coercive Sexuality Scale; CTS2: Revised Conflict Tactics Scales; FPAS: Follingstad Psychological Aggression Scale; ISA: Index of Spouse Abuse; MMEA: Multidimensional Measure of Emotional Abuse; MWA: Measure of Wife Abuse; PMWI: Psychological Maltreatment of Women Inventory; SVAWS: Severity of Violence Against Women Scales; SES: Sexual Experiences Survey; TENSE: Test of Negative Social Exchange.

Table 9. IPA Acts Cited by Indian Researchers

Measure	Category	Acts Cited
ICRW, 1999	Physical	Hit, slapped, beat with hands/fist, threw object, violence during pregnancy, used weapon
	Psychological	Threatened, verbally abused, harassed, insulted, used profanity, threatened with weapon, humiliated, tried to prove insane, treated like servant, confined, physically restricted, socially restricted, destroyed/stole target's property, locked out, deserted, took another wife, forced to consume unpleasant/disgusting things, denied food
	Sexual	Sexual violence of any kind
NFHS Domestic Violence Module, 2005	Physical	Slapped, twisted arm, pulled hair, pushed, shook, threw object, punched, hit with
	Psychological	Threatened with weapon, angry if target talked to men, accused of infidelity, restricted socially, limited family contact, insisted on knowing where target was always, restricted financially, humiliated, threatened, threatened someone close to target, insulted/made to feel bad
	Sexual	Forced sex (2 items), forced sexual activity (2 items)

(table continues)

Table 9 (cont.)

Measure	Category	Acts Cited
Verma & Collumbien, 2003	Physical	Physically assaulted, beat with object
	Psychological	Shouted, yelled
Ramanathan, 1996	Physical	Slapped, hit, punched, kicked
	Psychological	Ridiculed, criticized, socially restricted
	Sexual	Forced violent sex
Koenig et al., 2006	Physical	Hit, slapped, kicked, tried to hurt
	Sexual	Forced sexual relations
Jeyaseelan et al., 2007	Physical	Hit, kicked, beat

Table 10. Frequency of Physically Aggressive Acts in Indian IPA Measures

Act	% Indian Measures Citing Act	% Western Measures Citing Act
Kicked	66	88
Slapped	66	88
Punched	50	75
Beat up	50	50
Hit	50	50
Hit with object	33	75
Threw object	33	38
Pushed	17	63
Used weapon	17	50
Choked	17	25
Shook	17	25
Burned/scalded on purpose	17	13
Twisted arm	17	13
Physically attacked	17	13
Physically hurt while pregnant	17	13
Pulled hair	17	13
Dragged	17	--
Tried to hurt	17	--

Table 11. Standardized NEO PI-R Facet Means for Two Indian Samples

Facet		Marathi (n = 259)	Telugu (n = 214)	t-value	Effect Size (Cohen's d)
N1	Anxiety	48.9	47.9	1.17	.11
N2	Angry Hostility	44.9	50.7	6.80**	.63
N3	Depression	49.3	55.2	6.92**	.64
N4	Self-Consciousness	48.1	50.9	3.28**	.30
N5	Impulsiveness	39.1	40.8	1.99*	.18
N6	Vulnerability	47.2	53.8	7.73**	.71
	AVERAGE	**46.3**	**49.9**	**4.65**	**.43**
E1	Warmth	44.7	45.9	1.41	.13
E2	Gregariousness	47.1	50.0	3.34**	.31
E3	Assertiveness	43.1	41.8	1.52	.14
E4	Activity	46.8	48.8	2.34*	.22
E5	Excitement Seeking	37.0	48.4	13.36**	1.23
E6	Positive Emotions	50.5	44.4	7.15**	.66
	AVERAGE	**44.9**	**46.6**	**4.85**	**.45**
O1	Fantasy	40.8	34.6	7.27**	.67
O2	Aesthetics	57.9	54.0	4.57**	.42
O3	Feelings	47.4	40.9	7.62**	.70
O4	Actions	48.9	44.5	5.16**	.48

(table continues)

Table 11 (cont.)

Facet		Marathi (n = 259)	Telugu (n = 214)	t-value	Effect Size (Cohen's d)
O5	Ideas	53.2	50.9	2.70**	.25
O6	Values	39.5	35.6	4.57**	.42
	AVERAGE	**47.9**	**43.4**	**5.32**	**.49**
A1	Trust	54.7	51.6	3.63**	.34
A2	Straightforwardness	56.7	54.5	2.58*	.24
A3	Altruism	47.1	47.1	0.00	.00
A4	Compliance	54.2	53.9	0.35	.03
A5	Modesty	47.7	52.2	5.27**	.49
A6	Tender-Mindedness	56.2	60.5	5.04**	.47
	AVERAGE	**52.8**	**53.3**	**2.81**	**.26**
C1	Competence	47.7	43.8	4.57**	.42
C2	Order	55.5	52.7	3.28**	.30
C3	Dutifulness	54.0	52.2	2.11*	.20
C4	Achievement Striving	55.0	53.6	1.64	.15
C5	Self-Discipline	48.8	49.0	0.23	.02
C6	Deliberation	55.1	56.6	1.76	.16
	AVERAGE	**52.7**	**51.3**	**2.27**	**.21**

Note. * $p < .05$; ** $p < .01$; *** $p < .001$. Facet-specific means not provided in McCrae (2002).

Table 12. Hypothesized IPA Categories Included in the Domestic Violence Module

Category	Marker (Question[s])
Physical IPA	Pushed her, shook her or threw something at her (DV02 d)
	Slapped her (DV02 e)
	Twisted her arm or pulled her hair (DV02 f)
	Punched her with fist/something that could hurt her (DV02 g)
	Kicked her, dragged her or beat her up (DV02 h)
	Tried to choke her or burn her on purpose (DV02 i)
Marital Control	Husband was jealous if she talked to other men (DV01 a)
	Husband frequently accuses her of being unfaithful (DV01 b)
	Husband does not permit her to meet female friends (DV01 c)
	Husband tries to limit contact with her family (DV01 d)
	Husband insists on knowing where she is at all times (DV01 e)
	Husband does not trust her with money (DV01 f)
Verbal IPA	Said or did something to humiliate her in front of others (DV02 a)
	Threatened to hurt or harm her or someone close to her (DV03 b)
	Insulted her or made her feel bad about herself (DV03 c)
	Threatened her or attacked her with a knife, gun or any other weapon (DV02 j)
Sexual IPA	Physically forced her to have sexual intercourse with him even when she did not want to (DV02 k, DV14, DV15)

(table continues)

Table 12 (cont.)

Construct	Marker (Question[s])
	Forced her to perform sexual act(s) she did not want to (DV02 l)
Miscellaneous	Onset of marital violence (DV03)
	Injuries as a result of violence (DV04)
	Husband's alcohol use (DV05, DV06, DV07)
	Violence from others since age 15 (DV08, DV09, DV10)
	Violence during pregnancy (DV11, DV12, DV13)
	Violence in natal family (DV16, DV17)
	Help-seeking following violence (DV18, DV19, DV20)

CHAPTER III. STUDY 1: RESULTS

Sociodemographic Variables

Table 13 presents sociodemographic characteristics of the sample. The UP average (UP_M) data presented below are from the 2005-2006 NFHS UP report (NFHS, 2005). The median age at marriage among women in the current sample was 16.1 years (UP_M = 16.2), and among their husbands was 20.0 years (UP_M = 20.1). It is worth noting that several women in the sample made a distinction between the age at their first wedding, when the marriage was first contracted, and the age at their second wedding, when the woman moved into her husband's natal home. For the purposes of these analyses, the latter was used for the age at marriage for both the husband and wife unless the wife did not specify in her response. The age specified by women who did not discriminate between their first and second weddings was considered their age at the latter; I chose to consider it thus because the women who gave their age at the first weddings all stated it occurred before the age of 10. An age this young was never given by women who did not distinguish between the two weddings. The average fertility rate in the sample was 4.0 children (UP_M = 3.8 children). Forty-six percent of women (UP_M = 34%) and 81% of their husbands (UP_M = 98%) were employed, indicating a higher than average frequency of female employment and a lower than average frequency of male employment in this sample.

In this sample, 66% of women (UP_M = 54%) and 25% of their husbands (UP_M = 21%) never attended school. In contrast, 13% of women (UP_M = 33%) and 35% of their husbands (UP_M = 33%) attained over 10 years of education. Using the NFHS definition of literate (one who has completed at least 6^{th} grade), 22% of women (UP_M = 45%) and

54% of their husbands (UP_M = 76%) in this sample were literate. Taken together, these data suggest that women in this sample were less educated and more often illiterate than the average for UP women. Their husbands, in contrast, attended school at rates consistent with the UP average, though they attended school for fewer years than average. Finally, 90% of the women reported their religious affiliation as Hindu (UP_M = 82%), 7% Muslim (UP_M = 17%), and 3% Other (UP_M = 0.3%).

Intimate Partner Aggression

Types of IPA

Table 14 presents the percentage frequencies of various types of IPA, using categories developed by the NFHS administrators. Rates of physical IPA within the last year were not significantly different in the present sample from either the national or UP samples (χ^2 = .633), though the UP NFHS sample reported markedly higher rates of physical IPA since the age of 15 than either the present or national samples. Rates of sexual IPA and psychological IPA, both since age 15 and within the last year, were significantly higher in the present sample than the national and UP samples, over 50% points higher in some cases (χ^2 = 75.3 and 63.0, respectively, *p*s < .0001). The same measure of IPA was used in both studies; however, it is possible that this discrepancy is due to differences in the degree of rapport between the participant and the assessor or to a selection bias on the part of the assessors in this study. These possibilities will be addressed further in the Discussion section below. In contrast to both national and UP data, the most frequently experienced type of IPA in the present sample was psychological (followed closely by sexual IPA), whereas physical was the most frequently experienced in the other two samples.

No women in the present sample experienced only physical IPA in their lifetime; that is, those who experienced physical IPA also experienced sexual and/or psychological IPA. Further, no women experienced both physical and sexual IPA without also experiencing psychological IPA in their lifetime. Finally, approximately 30% of the women in the present sample experienced at least one incident of all types of IPA in their lifetime, significantly more than in the UP and national samples (8% and 4%, χ^2s= 18.99 and 12.18, respectively *p*s < .0001).

Acts of IPA

Table 15 presents data on various IPA acts; Table 16 presents data on injuries resulting from IPA acts. The five most common IPA acts in the present sample were considered psychological IPA by the DVM developers. In contrast, the most commonly reported IPA act in the 2005-2006 NFHS UP sample was the husband slapping the wife (a limitation of the original NFHS publication of these data is that UP data are not available for all behaviors included in Table 15). In both samples, the two most infrequently reported IPA acts were choking/burning and threatening with a weapon. The most common injuries from an act of physical IPA in the present sample were cuts, bruises and aches.

The DVM authors asserted that the measure captures several IPA dimensions (see Table 12): Physical (6 items), Psychological (10 items; Marital Control [6 items] and Verbal IPA [4 items]) and Sexual (4 items; Measure DHS, 2005). To explore the measure further, I analyzed these content-based scales to determine whether it was reasonable to use these scales in further analyses. The psychometric properties of these scales and their interrelations are presented in Table 17; their inter-item correlations are

within the recommended target range or slightly more interrelated (i.e., the Physical IPA items). The internal consistency of the Verbal IPA scale is comparable to its correlation with the Physical IPA scale, suggesting a low level of psychometric differentiation. However, although the psychometrics of these scales argue for their modification, they will be retained for several reasons: these scales are markedly different in content, they were developed by the authors of the DVM, and they are similar to those used in previous research. For these reasons, all four scales will be maintained. It is a question for the analyses presented below whether the IPA scales show discriminant relations with the other scales and variables included in this study, which would offer empirical justification for the retention of these scales.

As was shown previously, the scales within a measure representing the different types of IPA are generally moderately to highly related, and the scales of the CTS2 show moderate to high interrelations. The data presented in Table 17 on the interrelations of the various DVM content-based scales offer further support for these relations among the types of IPA. Specifically, Physical IPA and Sexual IPA were moderately correlated (r = .57), which is similar to previous relations found between the CTS2 Physical Assault and Sexual Coercion scales (rs = .64 and .57; Jones et al., 2002, and Calvete et al., 2007, respectively). Physical IPA also correlated highly with Verbal IPA (r = .70) and moderately with Marital Control (r = .34; a significant difference, z = 5.6, p < .0001). Although the correlation between the Physical and Verbal IPA scales is higher than ideal, the two scales will be maintained in further analyses due to clear distinction in their content. Marital Control and Verbal IPA were related moderately (r = .41), but not at a high enough level to suggest that they are not structurally distinct. Finally, Sexual IPA

was related moderately to both Marital Control and Verbal IPA (*r* = .52 and .47, respectively); these levels are similar to those found in previous research between CTS2 Sexual Coercion and Psychological Aggression (*r*s = .54 and .39; Calvete et al., 2007, and Jones et al., 2002, respectively). Together, these data suggest that Marital Control is the most distinct of the four scales, the Physical and Verbal IPA scales are not psychometrically distinct, and these scales likely emerge from a single, higher order construct. A principal factors factor analysis of these four content-based scales revealed a single factor (eigenvalues = 2.00, .11, -.10, -.22) with moderate to high loadings (loadings = .78, .77, .72, .53, Physical IPA, Verbal IPA, Sexual IPA and Marital Control, respectively). Overall, these data are consistent with those presented above using western measures of IPA, and indicate that the types of IPA are content-distinct, but interrelated manifestations of a higher order IPA dimension.

IPA-Associated Variables

The DVM also has 16 IPA-associated items that are not included in the content-based scales, such as how the woman has reacted to the IPA psychologically and behaviorally, the context or consequences of the IPA, and concerning the broader variable of DV (i.e., perpetrated by the husband's or wife's family, as well as the husband). These variables' correlations with the IPA scales are presented in Table 18. Of the four correlations of .50 or greater, two were with Physical IPA (concerning resulting injuries) and two with Sexual IPA (sought help for IPA; husband drinks alcohol). Further, there were 13 correlations above .40, seven of which concerned the women's reactions to IPA (three with Verbal IPA, two with Sexual IPA and one each with Physical IPA and Marital Control); three were between Verbal IPA and

consequential injuries; and four were with Physical IPA, whether the woman considered herself a victim, whether she had been abused while pregnant, and two concerning the husband's alcohol. Differences among the average correlation (calculated using Fisher's *r*-to-*z* transformation) for each of the IPA scales across these variables revealed that Marital Control was significantly less related to these variables than were the other three scales ($Z = -3.69$, $p < .0001$), which were not significantly different from each other.

Analyses revealed that for 34% of women experiencing IPA, it began in the first year of marriage, and for 69%, within the first 5 years of marriage. However, there were no significant relations between when the IPA started relative to beginning the marriage and any of the IPA scales.

All four types of IPA were associated significantly, though at lower levels, with two variables involving others committing DV: (1) any DV against the respondent while she was pregnant and (2) any DV since the age of 15. Effect sizes ranged from .22 to .41 (Cohen's $d_M = .30$); both variables were related most strongly to Physical IPA and least strongly with Marital Control.

Further analyses of these two variables (see Table 19) indicated that the most frequent perpetrator of DV against the respondent was the husband's brother. Importantly, the Hindi language differentiates between husband's older brother (*jait*) and husband's younger brother (*devar*). Although the DVM did not make this distinction, the qualitative responses of some respondents to question 9 indicated that both of these types of brother-in-law were involved in the DV. For example, one woman stated that "The land got divided and the *devar* was building a house on our half and the *devar* hit me when I tried to stop him." Whereas another stated, "During the division of the land my

jait hit me." Interestingly, several women noted that the division of land and/or property elicited the DV they experienced. The next most common prompting event was study/education related (e.g., "To get me to study," "Used to slap me to make me study," "When I was in class 9 I got less [sic; i.e., lower or worse] marks so my dad slapped me."). Finally, many women also noted an eliciting event that had to do with household work (e.g., "For not doing the household work," "Because the food was too salty" "To get me to make food.").

In contrast, the most frequent perpetrator of DV against the respondent while the respondent was pregnant was another of the respondent's children. It is possible that, instead of reflecting true DV, this question was translated in such a way that made the act cited ambiguous (i.e., "hit" might not have been obviously aggressive). It is also possible that it does reflect true DV although, in most cases, a child's physical aggression (without a weapon) is not sufficient to significantly harm their mother. Thus, this seems more likely to reflect young children reacting negatively to their mother's pregnancy (e.g., due to her physical state, she may have given her other children less attention than usual).

Finally, all four types of IPA were associated significantly with telling others about and seeking help for the IPA (most strongly with Sexual IPA). Further analysis of the latter variable (see Table 20) indicated that the most frequently sought help source was a neighbor, followed by the respondent's own family. The qualitative responses of several women suggest specific reasons for seeking help, and the most common thread through these responses was a desire to explain to the husband why his behavior was not right. One woman stated "I asked *Mahila Samakhya* and my husband's friend to try to explain to my husband why he shouldn't drink." Another went so far as to "threaten" the

source of help she sought out of what she would do if he would not help her, stating "I talked to my husband's friend and told him if he didn't talk to my husband I would take my kids and move into his house."

Summary of Intimate Partner Aggression

As stated above, the indigenization process involves establishing the psychometric properties and structural consistency of the measure in the target ethnic, cultural, linguistic or geographical grouping, after establishing the baseline in the culture of origin. The results described in this section support the psychometric adequacy of the content-based DVM IPA scales. Further, the empirical structure of these scales is similar to that established in western IPA research, specifically a structure of distinct-yet-correlated IPA domains that are manifestations of a higher order IPA construct. These scales also show systematic relations with theoretically similar variables associated with IPA, offering evidence for the scales' convergent validity. Qualitative data obtained in this sample also suggest areas for adapting or indigenizing, however, such as distinguishing between the *jait* and *devar,* which is discussed further below.

The NEO-FFI among Rural North Indian Women

Table 21 presents the internal consistencies and interrelations of the NEO-FFI scales in this sample. Although the internal consistency reliabilities for the NEO-FFI or NEO PI-R scales were moderate to high in both the American normative sample (range = .75 to .83; Costa & McCrae, 1992) and a Marathi Indian sample (range = .73 to .90; Lodhi et al., 2002), they were markedly lower in the current sample (range = .57 to .72; M = .62) and the IIC_Ms were out of the established adequate range for four of the five scales (IIC_M = .09 to .18; M = .12). The scale interrelations were low to moderate (range

= .01 to .48; *M* = .13) and highly similar to that obtained in the Marathi Indian sample with the NEO-FFI (*r* = .86 between the two matrices; Lodhi et al., 2002). However, they were only moderately similar to that obtained in the American normative sample with the NEO PI-R (*r* = .68 between the two matrices; Costa & McCrae, 1992), with the biggest absolute value difference in the relation between Extraversion and Openness ($|r_{difference}|$ = .39; *M* $|r_{difference}|$ = .17; range $|r_{difference}|$ from .02 [Agreeableness and Conscientiousness] to .39). Taken together, these data suggest that the personality structure obtained here resembles that reported in previous research in India, but is only moderately similar to U.S. results. However, with the possible exception of Neuroticism, the internal consistency reliabilities of these scales suggest that they could be refined for greater reliability.

Domain-Level Factor Analysis of NEO-FFI

I next examined the within-scale structure of each of the NEO-FFI domains via exploratory principal factors factor analyses. Items marking the low ends of scales were reverse-keyed before conducting the analyses. Except for NEO-FFI Agreeableness, discussed below, these analyses indicated 1-factor solutions for each domain. To improve the psychometric properties of the scales while retaining their essential qualities, items with a loading of < .30 were dropped from further analyses, except for Openness, for which there was a clear cutpoint in item loadings (i.e., no item loadings between .39 and .32), so items with loadings below .39 were dropped. After removing items, scale alphas were examined to ensure that the changes had yielded an increase in reliability. Table 22 presents the item content of, and both the original and final factor loadings for, the original and refined NEO-FFI scales.

The eigenvalues and scree plot suggested that Agreeableness might be multi-factorial (first five eigenvalues = 2.09, 1.56, 1.35, 1.34, and 0.99), and removal of weak items per the criterion above did not yield a homogeneous scale. Specifically, after the items with loadings less than .30 were removed, three other items' loadings reduced to less than .30. Continuing this process ultimately yielded only a three-item scale. Given these results, an alternative theoretical model was considered. Specifically, the HEXACO personality model (Lee & Ashton, 2004) shares four traits with the FFM—Emotionality/Neuroticism, Extraversion, Conscientiousness and Openness—but a separate Honesty-Humility factor breaks off from Agreeableness in the HEXACO model (see Table 23). Therefore, whether there was adequate empirical support for a two-factor Agreeableness solution in this sample was explored.

When the Agreeableness items were subjected to a factor analysis with two factors extracted, the only item that needed to be dropped per the above guidelines was the one with the lowest loading in the one-factor solution. The retained items showed minimal cross loadings (.00 to .23 on Factor 2, M = .12; -.04 to .20 on Factor 1, M = .11), and all items' cross loadings were at least .20 lower than their primary loading. Moreover, with one exception, the positively and negative keyed items of the original Agreeableness scale comprised the two factors, which were interpretable, respectively, as Agreeableness (5 items) and Dishonesty-Arrogance (D-A; 6 items). It is possible, therefore, that these are not truly distinct factors, but that the wording of the positively versus negatively keyed items effected their separation into Agreeableness and D-A. This and the HEXACO model will be discussed in greater detail in the Discussion section below.

Table 24 presents the psychometric properties of and correlations among the six personality scales that resulted from the methods just described. Although the alpha coefficients for all six scales are still lower than desirable, their IIC_M values are adequate, indicating that they need additional items to reach standard, acceptable levels of reliability (i.e., .80 or higher). The scale interrelations range from |.12| (Agreeableness with Neuroticism and Openness) to .47 (Extraversion and Conscientiousness), with an average of .25. The correlations between Extraversion and both Conscientiousness and Agreeableness (r = .46) are higher than is typical for FFM model scales. This was also true of the original Extraversion and Conscientiousness scales (r = .48), but the original Extraversion—Agreeableness correlation was somewhat lower (r = .25). Given that the revised Extraversion—Dishonesty-Arrogance correlation is -.15, it appears that in dividing Agreeableness into two (Agreeableness and Dishonesty-Arrogance), for the most part, the portion of the original Agreeableness scale that was correlated with Extraversion formed the revised Agreeableness scale, whereas the portion that was not formed the new Dishonesty-Arrogance scale. The extent to which these are cultural differences versus more purely measurement issues needs to be investigated in future research.

Moreover, these interrelations are markedly higher than those reported for the HEXACO scales (Lee & Ashton, 2004), which range from .01 (Openness and Agreeableness) to .28 (Honesty-Humility and Conscientiousness), with an average of .05. Of course, although the personality structure presented here superficially resembles the HEXACO structure (i.e., it contains two “Agreeableness” factors), it was obtained with a different personality measure, so future research will need to investigate the similarity of

the structure obtained in this sample with that obtained from a HEXACO measure.

Table 25 presents the relations between the scales refined above and the original NEO-FFI scales. Expectedly, the highest relations are the part-whole correlations between the original scales and those scales refined from them, with the exception of Agreeableness, which correlates moderately with the original Extraversion and Conscientiousness scales (*r*s = .38 and .32, respectively) as well as original Agreeableness (*r* = .36). Interestingly, D-A correlates more strongly with the original Agreeableness (*r* = .83) scale than does the revised Agreeableness scale. Thus, the original negatively keyed Agreeableness items (those that loaded almost exclusively onto the D-A scale) may be better considered Agreeableness items that include a negator that reverse keys them (though this does not appear to be the case given the wording of the items). However, the D-A label for the scale will be retained both because the items are worded to be disagreeable and to reflect the scale's similarity to HEXACO Honesty-Humility.

Relations among the IPA Scales, Personality Scales, IPA-Associated Variables and Sociodemographic Variables

Relations between the Personality and IPA Scales

The top section of Table 26 presents the correlations between the revised personality scales and the DVM content-based IPA scales described previously. Notably, these relations are uniformly low, as only one is > .20.

This study had several hypotheses based on previous research about relations between these constructs. The first hypothesis was that higher levels of Neuroticism and

lower levels of Agreeableness would be associated with higher levels of all types of IPA. The data offer only minimal support for this hypothesis. Specifically, a post-hoc analysis following the empirical separation of D-A from Agreeableness revealed that D-A was significantly positively associated with Marital Control (r = .16). However, Agreeableness was positively (not negatively) associated with Physical and Sexual IPA (rs = .18 and .15, respectively), and Neuroticism, arguably the trait most strongly linked to women's experience of IPA in previous research, was unrelated to IPA in this sample.

The second hypothesis presented above was that lower levels of Conscientiousness would be related to Physical and Psychological IPA, whereas higher levels would be related to Sexual IPA. Again, these data provide partial support for this hypothesis. Specifically, Conscientiousness was positively related to Sexual IPA (r = .14). However, Conscientiousness was positively, not negatively, related to Verbal IPA (r = .17).

Although no specific hypotheses were developed for Extraversion or Openness, due to their inconsistent or nonexistent relations to IPA in previous research, post-hoc analyses offered an opportunity to examine their relations to IPA in this sample. Extraversion was positively linked to Verbal and Physical IPA (rs = .22 and .13); with Verbal IPA, it also had the strongest relation to IPA in this sample. Further, Openness was the only trait with a significant negative relation to IPA (r = -.17 with Marital Control).

Taken together, eight significant relations between personality and IPA were found, and only five of the 16 hypothesized relations (12 if Agreeableness and D-A are considered together, as they were empirically separated after the hypotheses were developed) were significant. However, each domain of IPA was significantly linked to

two personality traits, and none to the same two, suggesting a pattern of distinct relations between these domains that requires replication to confirm.

Relations between the Personality Scales and

IPA-Associated Variables

As noted earlier, the DVM includes several non-scale variables associated with IPA. The relations between these variables and the personality scales are presented in the bottom section of Table 26. Significant correlations ($p < .05$) are noted in the table. However, given that 96 correlations were computed, five may be expected by chance at $p < .05$, so only those with $p < .01$ are considered further.

Several IPA-associated variables showed notable relations with the personality variables; for four variables, the six personality traits together accounted for over 10% of the variance. The three highest correlations were with items assessing whether respondents considered themselves victims of IPA and whether they had told anyone of or sought help for the IPA they were experiencing. These three items were associated significantly and positively with Extraversion, Conscientiousness and D-A (r_Ms = .23, .23 and .19, respectively), and negatively with Agreeableness (r_M = -.25). Taken together, these data suggest that women who consider themselves victims of IPA and seek help for their situation are outgoing, have a sense of responsibility, and tend to be brash in their attitudes towards others.

Finally, it appears that certain personality traits are far more consistently related to the IPA-related variables than others. Specifically, of the significant relations, none is with Neuroticism and only one is with Openness. The most consistently related traits were Agreeableness, Extraversion and Conscientiousness, with five, three and three

significant relations, respectively.

Relations among the IPA Scales, the Personality Scales and the Sociodemographic Variables

Table 27 presents the relations between the sociodemographic variables and both the personality and IPA scales. When considering these relations, it is noteworthy that of the 18 significant correlations, 5 are at $p < .05$ (with 7 expected by chance), only one is above .30 (Neuroticism with wife's monthly wage, $r = -.40$), and only two more are above .25 (D-A with wife's monthly wage, $r = .26$; Sexual IPA with wife's employment status, $r = .28$). Thus, even the significant correlations are uniformly low. Further, given Neuroticism's lack of relations with the IPA scales or the IPA-related variables, it is interesting that it was the most consistently, significantly related scale to the sociodemographic variables.

Wife's employment status was the only sociodemographic variable related to both the personality and IPA scales: It was related to higher levels of Conscientiousness (r =.20), and both Sexual and Verbal IPA (rs = .28 and .16, respectively). All other socio-demographic variables were related to either the personality (e.g., wife's monthly wage) or the IPA scales (e.g., husband's monthly wage), but not both.

Table 13. Descriptive Statistics for Sociodemographic Variables

Variable	*Mean*	*SD*	Min.	Max.
Wife's age	37.5	8.4	18	69
Husband's age	41.7	9.0	22	74
Wife's age at marriage	16.1	2.8	8	27
Husband's age at marriage	20.0	3.3	10	30
Number of children at home	2.9	1.6	0	8
Number of children away	1.1	1.5	0	7
Age of oldest child	18.0	8.9	0	44
Age of youngest child	10.1	6.6	0	35
Wife's years of education	2.7	4.6	0	18
Husband's years of education	6.5	4.9	0	18
Wife's monthly wage[1] (*n* = 116)	1,824.5	2,638.5	68	14,000
Husband's monthly wage[1] (*n* = 203)	2,512.6	2,891.4	199	28,000

Note. Unless otherwise indicated, *n* = 251. *SD* = standard deviation; Min. = minimum; Max. = maximum. [1]In rupees; 1 U.S. dollar = approximately 45 rupees

Table 14. Frequency (Percentage) of IPA Types

Act	Present Sample	2005-2006 NFHS Data: National Sample	2005-2006 NFHS Data: UP Sample
	In Last Year		
Physical IPA	24.7	21.4	19.5
Sexual IPA	59.4*	7.2	6.6
Psychological IPA	62.2*	11.2	10.4
	Experienced Since Age 15		
Physical IPA	33.9	35.1	60.7
Sexual IPA	60.2*	10.0	16.0
Psychological IPA	64.1*	16.0	26.5
Only Physical IPA	0.0	--	41.0
Only Sexual IPA	7.6	--	9.4
Only Psychological IPA	7.2	--	16.1
Only Physical and Psych. IPA	4.4	--	--
Only Physical and Sexual IPA	0.0	7.9	14.8
Only Psych. and Sexual IPA	23.1	--	--
All Types of IPA	29.5*	4.2	8.1
Any Type of IPA	71.7	--	--

Note. IPA = intimate partner aggression. NFHS = National Family Health Survey. UP = Uttar Pradesh. -- = data not presented in NFHS report. * Different from NFHS data, $p < .05$.

Table 15. Frequency (Percentage) of IPA Acts

		Present Sample				2005-2006 UP Sample			
			In Last Year (%)				In Last Year (%)		
Act	Scale	Never (%)	No	Some-times	Often	Never (%)	No	Some-times	Often
Husband demands to always know wife's location	Psych: MC	48	3	17	32	--	--	--	--
Husband does not trust wife with money	Psych: MC	63	4	12	22	--	--	--	--
Husband humiliates wife	Psych: Verbal	67	7	20	7	78	14	1	7
Husband jealous, angry	Psych: MC	72	7	11	11	--	--	--	--
Wife not allowed contact with family	Psych: MC	72	3	14	11	--	--	--	--
Husband forces wife to have sex	Sexual	73	5	13	10	85	9	1	5
Husband forces wife to perform sex act	Sexual	73	8	15	5	95	3	0	2
Husband slaps wife	Physical	73	12	9	6	40	41	3	16
Wife not allowed meetings with friends	Psych: MC	75	2	9	14	--	--	--	--
Husband makes accusations of unfaithfulness	Psych: MC	78	6	10	6	--	--	--	--
Husband kicks, drags wife	Physical	83	7	6	4	78	15	1	6

(table continues)

Table 15 (cont.)

		Present Sample				2005-2006 UP Sample			
			In Last Year (%)				In Last Year (%)		
Act	Scale	Never (%)	No	Some-times	Often	Never (%)	No	Some-times	Often
Husband twists wife's arm/pulls her hair	Physical	84	6	7	3	74	17	2	7
Husband insults wife	Psych: Verbal	84	6	6	5	88	7	1	4
Husband threatens to harm wife or loved one	Psych: Verbal	85	4	9	3	--	--	--	--
Husband pushes, shook or threw object at wife	Physical	86	2	6	5	--	--	--	--
Husband punches wife	Physical	86	6	4	4	78	15	1	6
Husband chokes, burns wife	Physical	94	2	2	2	97	2	0	1
Husband threatens wife with weapon	Psych: Verbal	97	0	2	1	99	1	0	0

Note. Acts are arranged in order of decreasing frequency in the current sample. -- = data not presented in National Family Health Survey report. Psych: MC = Psychological: Marital Control. Psych: Verbal = Psychological: Verbal. UP = Uttar Pradesh.

Table 16. Frequency (Percentage) of Injuries from IPA

Injury	Never (%)	In Last Year (%)		
		No	Some-times	Often
Cuts, bruises, aches	69	12	10	9
Eye injuries, sprains, dislocations, burns	83	2	2	12
Deep wound, broken bone/teeth, serious injury	83	7	5	5

Note. IPA = Intimate partner aggression.

Table 17. Internal Consistencies of and Interrelations among IPA Scales

Scale	# Items	Alpha	IIC_M	1	2	3	4
1. Physical IPA	6	.89	.57	--			
2. Marital Control	6	.80	.40	.34	--		
3. Verbal IPA	4	.71	.38	.70	.41	--	
4. Sexual IPA	4	.71	.38	.57	.47	.52	--

Note. All *r*s $p < .0001$. IIC_M = mean inter-item correlation. IPA = Intimate partner aggression.

Table 18. Relations between IPA Scales and Associated Variables

Variable	*n*	Physical IPA	Marital Control	Verbal IPA	Sexual IPA	$\lvert r_M \rvert$
Consider self victim of IPA	251	***.44***	***.38***	***.47***†	***.49****	.45
Told others of IPA	251	***.38***	***.31***	***.45****	***.48***	.41
Husband drinks alcohol	251	***.43***	***.33***	***.37***	***.50****†	.41
Sought help for IPA	251	***.27***	***.43***†	***.40***	***.50****†	.40
Eye injuries, sprains, burns	125	***.62****†	.02	***.40***	***.30***	.33
Cuts, bruises, aches	130	***.58****	.00	***.44***	***.28***	.33
DV while pregnant	251	***.41****	***.22***	***.29***	***.35***	.32
Alcohol makes IPA worse	105	***.41****	.08	***.35***	***.29***	.28
Deep wound, serious injury	126	***.39***	.06	***.41****	***.26***	.28
Others commit DV	251	***.32****	***.22***	***.25***	***.29***	.27
Saw parents' IPA	251	***.21***	***.27****	***.22***	***.21***	.23
Frequency of others' DV	32	-.12	-.26	-.11	-.28*	.19
Freq. of husband's drinking	103	*.22**	.11	.07	.12	.13
Respondent was/is pregnant	251	-.10	***-.19****	-*.15*	-.05	.12
Know of parents' IPA	251	.02	***.17****	.11	.02	.08
Start of IPA	112	.10	-.14	.01	-.01	.07
Weighted Correlations		.30	.19	.28	.29	

Note. *n* = number of respondents to question. *Highest correlation in row. †Highest correlation in column. Correlations in *italics*, $p < .05$. Correlations in ***bold italics***, $p < .01$. Correlations in ***underlined bold italics***, $p < .001$.

Table 19. Frequency of Perpetrators of Domestic Violence

Perpetrator	Since Age 15 (n = 72)	While Pregnant (n = 36)
Husband's brother	24	8
Father	19	0
Child	2	17
Mother	15	2
Mother-in-law	13	3
Father-in-law	11	4
Sibling	10	0
Husband's sister	7	2
Other	4	3
Other relative	2	2
Husband	--	1

Note. -- indicates response not given as option in question.

Table 20. Help Sources Sought for IPA

Help Source	Frequency (n = 82)
Neighbor	33
Own family	23
In-laws	18
Social Service Organization	16
Friend	11
Other	5
Police	4
Doctor/Medical Personnel	1
Lawyer	0
Religious Leader	0

Note. IPA = Intimate partner aggression.

Table 21. Internal Consistencies of and Interrelations among NEO-FFI Scales

Scale	# Items	Alpha	IIC_M	1	2	3	4	5
Neuroticism	12	.72	.18	--				
Extraversion	12	.57	.09	.02	--			
Openness	12	.66	.14	-.10	.01	--		
Agreeableness	12	.55	.09	***-.30***	***.24***	.10	--	
Conscientiousness	12	.61	.11	***-.22***	***.48***	-.04	***.44***	--

Notes. $N = 251$. IIC_M = mean interitem correlation. Correlations in ***underlined bold italics*** are significant, $p < .001$.

Table 22. Item Contents and Factor Loadings of Refined Personality Scales

Scale	Item Content	Original Loading	Final Loading
Neuroticism	When under stress, I feel like I'm going to pieces.	.57	.58
	At times, I've been so ashamed I wanted to hide.	.56	.57
	I feel inferior to others often.	.50	.49
	I feel completely worthless sometimes.	.50	.48
	Often, when things go wrong, I feel like giving up.	.46	.47
	Often, when I feel helpless, I want someone else to solve my problems.	.44	.44
	Rarely do I feel lonely or down.[1] (R)	.43	.43
	The way people treat me makes me angry often.	.40	.42
	I feel jittery and tense often.	.40	.38
	I feel anxious and fearful rarely. (R)	.36	.35
	I rarely feel sad or depressed.[2] (R)	.26	--
	I don't consider myself a worrier. (R)	.22	--
Extraversion	I really like to talk to people.	.54	.55
	I like to be where the action is.	.47	.48
	I would prefer going my own way to being a leader. (R)	.50	.46
	I like to have many people around me.	.42	.44
	I am cheerful and high-spirited.	.37	.38
	I am very active.	.43	.36
	I laugh easily.	.32	.34
	I usually feel like I'm bursting with energy.[1] (R)	.27	--
	I think of my life as fast-paced. (R)	.25	--
	Usually I prefer doing things alone. (R)	.21	--

(table continues)

Table 22 (cont.)

Scale	Item Content	Original Loading	Final Loading
	I don't consider myself to be a cheerful optimist.[2] (R)	.05	--
	I don't think of myself as 'light-hearted.'[1] (R)	.03	--
Openness	Controversial speakers just confuse and mislead students.[1] (R)	.50	.50
	I find daydreaming a waste of time. (R)	.46	.47
	Poetry has little or no impact on me. (R)	.42	.43
	Religious authorities should decide about moral issues.	.40	.40
	I am not interested in contemplating the nature of the universe or the human condition.	.45	.39
	I enjoy contemplating theories and abstract ideas often.[1]	.39	.38
	The patterns found in art and nature intrigue me.[1]	.32	--
	I think of myself as intellectually curious.	.32	--
	I don't usually notice the moods evoked by certain places. (R)	.32	--
	When contemplating art, I feel waves of excitement.[2]	.32	--
	I stick to what I find to be the right way of doing things. (R)	.31	--
	I like trying new or foreign foods. (R)	.27	--
Agreeableness	I try to be thoughtful and considerate.	.36	.56
	I try to be courteous to those I meet.	.37	.48
	Almost all people I know like me.	.45	.44
	I would rather cooperate than compete.	.31	.31
	Most people will take advantage of you if you let them. (R)	.25	-.30
Dishonesty-	I am usually cynical and skeptical of others' intentions. (R)	.25	.45
Arrogance	People think I am cold and calculating. (R)	.38	.40
	If necessary, I will manipulate others to get what I want. (R)	.29	.39
	People think I am selfish and egotistical.[2] (R)	.40	.37

(table continues)

Table 22 (cont.)

Scale	Item Content	Original Loading	Final Loading
	If I don't like someone, I let them know it. (R)	.31	.34
	I am stubborn in my attitudes. (R)	.30	.34
	I get into a lot of arguments with family and coworkers.	.07	--
Conscientiousness	I work hard to meet my goals.	.61	.62
	When I make a commitment, I follow through.	.61	.60
	I am productive and get the job done.	.61	.60
	I perform tasks assigned to me conscientiously.	.53	.53
	I strive for excellence in everything.	.51	.49
	My belongings are neat and clean.	.38	.38
	I pace myself to get things done on time.	.34	.35
	I set goals clearly and work toward them in an orderly way.	.32	.33
	Sometimes I'm not very dependable or reliable. (R)	.20	--
	I seem unable to get organized. (R)	.04	--
	I waste a lot of time before getting to work. (R)	.03	--
	I am not very methodical. (R)	.00	--

Note. [1] Improperly translated item. [2] Item that includes a word the back-translators did not know. (R) = Reverse-keyed item in the original.

Table 23. Facets and Facet Descriptions of HEXACO Honesty-Humility and Agreeableness

Scale	Definition
Honesty-Humility	
Sincerity	The tendency to be genuine in interpersonal relations.
Fairness	The tendency to avoid fraud and corruption.
Greed Avoidance	The tendency to be uninterested in possessing lavish wealth, luxury goods, and signs of high social status.
Modesty	The tendency to be modest and unassuming.
Agreeableness	
Forgiveness	One's willingness to feel trust and liking toward those who may have caused one harm.
Gentleness	The tendency to be mild and lenient in dealings with other people.
Flexibility	One's willingness to compromise and cooperate with others.
Patience	The tendency to remain calm rather than to become angry.

Note. Adapted from Lee and Ashton (2004).

Table 24. Psychometric Properties of and Relations among Refined Personality Scales

Scale	# Items	Alpha	IIC_M	1	2	3	4	5	6
1. Neuroticism	10	.73	.21	--					
2. Extraversion	7	.62	.19	*.14*	--				
3. Openness	6	.60	.20	***-.20***	***-.31***	--			
4. Agreeableness	5	.52	.18	.12	***.46***	-.12	--		
5. Dishonesty-Arrogance	6	.52	.15	***-.41***	*-.15*	***.25***	*-.15*	--	
6. Conscientiousness	8	.72	.24	*.16*	***.47***	***-.29***	***.44***	*-.13*	--

Note. IIC_M = mean interitem correlation. Correlations in *italics*, $p < .05$. Correlations in ***bold italics***, $p < .01$. Correlations in ***underlined bold italics***, $p < .001$.

Table 25. Relations among Original and Refined NEO-FFI Scales

Refined Scale	Original Scale				
	Neur.	Extra.	Open.	Agree.	Consc.
1. Neuroticism	***.93****†	.01	***-.17***	***-.41***	***-.25***
2. Extraversion	.10	***.74****†	***-.21***	.09	***.43***
3. Openness	-.12	.01	***.81****†	***.20***	-.09
4. Agreeableness	.11	***.38****	***-.17***	***.36***	***.32***
5. Dishonesty-Arrogance	***-.28***	.02	***.21***	***.83****†	***.27***
6. Conscientiousness	.10	***.37****	***-.17***	.07	***.73****†

Note. Neur. = Neuroticism. Extra. = Extraversion. Open. = Openness. Agree. = Agreeableness. Consc. = Conscientiousness. Correlations in *italics*, $p < .05$. Correlations in ***bold italics***, $p < .01$. Correlations in ***underlined bold italics***, $p < .001$. *Highest correlation in row. †Highest correlation in column.

Table 26. Relations of Personality Scales with IPA Scales and IPA-Associated Variables

Scale or Variable	*n*	Neur.	Extr.	Open.	Agree.	D-A	Consc.	r^2
Physical IPA	241	.05⊙	*.13*	-.04	***.18****⊡	.03◈	.10⊡	.04
Marital Control	241	.00⊙	.04	***-.17****	.07⊡	*.16*◈	.09⊡	.07
Verbal IPA	241	-.03⊙	***.22****	-.02	.11⊡	.11◈	***.17***⊡	.08
Sexual IPA	241	.11⊙	.09	.01	*.15**⊡	.07◈	*.14*⊙	.06
			Additional IPA items					
Consider self victim	241	.05	***.26***†	-.05	***-.33***†	*.13*	***.37****†	.19
Told others of IPA	241	-.04	***.25****	.03	***-.18***	***.24***†	*.16*	.14
Sought help for IPA	241	-.01	***.18***	.09	***-.24****	***.21***	*.16*	.13
Others commit DV	241	.00	*.14*	***.20***†	***.23****	.07	***.18***	.12
Husband drinks alcohol	241	.10	*.14*	.04	***-.21****	.01	*.16*	.05
Saw parents' IPA	241	.01	.09	-.04	-.11	.09	***.18****	.05
DV while pregnant	241	.06	.12	.05	.06	*.13**	.06	.03
Know of parents' IPA	241	-.10	.03	.08	-*.13**	.11	.04	.04
Start of IPA	102	.15	.16	-.04	-.11	-.12	.00	.06
Serious injury	116	-.13	.12	.00	.04	.10	.06	.04
Freq. husband's drinking	98	.07	-.07	.03	.03	-.06	-.13	.03
Respondent pregnant	241	-.04	-.11	.07	-.12	-.09	-.10	.01
Cuts, bruises, aches	120	-.00	.13	-.05	-.08	-.08	-.11	.01
Alcohol worsens IPA	100	-.01	-.01	-.07	.17	.04	.04	.01
Frequency of others' DV	31	-.20	-.07	-.33	.13	.17	.13	.01
Sprains, burns	115	.00	.07	.03	.07	-.10	-.09	.00

(table continues)

Table 26 (cont.)

Note. *n* = number of respondents to question. IPA: Intimate partner aggression. Neur.: Neuroticism. Extr.: Extraversion. Open.: Openness. Agree.: Agreeableness. D-A: Dishonesty-Arrogance. Consc.: Conscientiousness. r^2 = Adjusted multiple r^2 = total predictive power of personality. Correlations in *italics*, $p < .05$. Correlations in ***bold italics***, $p < .01$. Correlations in ***underlined bold italics***, $p < .001$. *Highest correlation in row. †Highest correlation in column. ⊙Hypothesized significant positive relation. ⊡Hypothesized significant negative relation. ◈Post-hoc hypothesized significant negative relation, based on hypothesized relation of IPA to Agreeableness.

Table 27. Relations of Sociodemographic Variables with IPA Scales and Personality Scales

Variable	*n*	Neur.	Extr.	Open.	Agree.	D-A	Consc.	Phys. IPA	Marital Control	Verb. IPA	Sex. IPA
Wife's employment status	241	*.14*	.11	-.02	.10	.04	***.20***†	.09	*.13*	***.16***†	***.28****†
Wife's monthly wage	116	***-.40****†	-.01	-.08	-.06	***.26***†	.05	-.08	-.00	-.02	-.11
Number of children at home	241	***.17****	.02	-.06	.05	-.05	.07	*.13*†	-.02	.08	*.13*
Wife's years of education	241	***-.22****	.05	-.01	.02	***.20***	.05	-.07	-.03	.02	-.06
Husband's monthly wage	203	-.11	-.02	-.08	-.02	.08	-.09	-.13	***-.18***†	-.04	***-.20****
Husband's years of education	241	-.08	-.08	-.06	-.08	***.22****	-.01	-.06	-.04	-.01	-.11
Husband's age at marriage	241	-.05	-.11	-.04	-.08	.09	***-.17****	.08	-.06	.10	-.02
Age of oldest child	241	-.07	***.16****†	-.07	.09	-.10	.12	.06	.03	.07	.07
Husband's employment status	241	*.14*	-.04	.01	-.02	.04	-.06	.02	.07	.02	.01
Wife's age at marriage	241	-.08	-.09	-.07	-.03	.11	-.08	-.00	-.09	.05	-.08
Wife's age	241	-.04	.12	-.04	.03	-.13	.02	-.00	-.09	.01	.02
Husband's age	241	-.04	.10	-.03	-.01	-.12	.01	.03	-.07	.03	.04
Number of children away	240	-.02	.04	-.01	.00	-.09	.11	-.01	-.03	-.01	.00
Age of youngest child	228	-.07	.12	-.05	-.03	-.06	-.00	.04.	.03	.05	-.05

(table continues)

Table 27 (cont.)

Note. *n* = number of respondents to question. IPA: Intimate partner aggression. Neur.: Neuroticism. Extr.: Extraversion. Open.: Openness. Agree.: Agreeableness. D-A: Dishonesty-Arrogance. Consc.: Conscientiousness. Phys. IPA: Physical IPA. Verb. IPA: Verbal IPA. Sex. IPA: Sexual IPA. *n* = number of respondents to question. Correlations in *italics*, $p < .05$. Correlations in ***bold italics***, $p < .01$. Correlations in ***underlined bold italics***, $p < .001$. * Highest correlation in row. † Highest correlation in column.

CHAPTER IV. STUDY 1: DISCUSSION

Study 1 was intended to address three goals: (1) to demonstrate the utility of IPA and FFM measures in a rural, Indian female population; (2) to investigate the relations between these constructs; and (3) to begin the indigenization process of these measures. The authors of the DVM, the IPA measure used in this study, asserted that the measure captures several IPA dimensions, which in this study aggregated to form reliable scales (Physical IPA, Sexual IPA, Marital Control and Verbal IPA). These scales had adequate internal consistency reliability and interrelations consistent with those demonstrated in previous research. These interrelations supported a hierarchical model of IPA, with the four types of IPA emerging from a higher order IPA construct. Further, the original NEO-FFI scales, with the exception of Neuroticism, had levels of internal consistency reliability outside of the established adequate range, which suggested they could be refined for greater reliability. The factor-analytic refinement procedure improved these scales' psychometric properties and highlighted that a one-factor solution was appropriate for each of the FFM domains except Agreeableness, for which a two-factor solution of Agreeableness and Dishonesty-Arrogance, similar to Lee and Ashton's (2004) HEXACO model, was more suitable.

Although the HEXACO model and the personality model obtained in this sample are superficially similar, much more research into this topic needs to be conducted. It is important to develop a better Hindi translation of the NEO-FFI; at least 10 of the 60 NEO-FFI items were not translated well in either content or tone and/or contained words that two graduate educated bilingual Hindi-English speakers did not know. Only four of these items loaded significantly on the refined NEO-FFI factors; this might not have been

the case if these items had been translated properly. Further, with a single exception, Agreeableness was composed of the positively-keyed NEO-FFI Agreeableness items, whereas Dishonesty-Arrogance was composed of the negatively-keyed NEO-FFI Agreeableness items. This is in contrast to the HEXACO Agreeableness and Honesty-Humility factors, which both are keyed in the "Agreeable" direction. It is possible that a study including a better translation of the NEO-FFI and a Hindi translation of the HEXACO measure could offer insight into the similarities of and differences between these structures in this sample.

Further, it is noteworthy that though the negatively keyed Agreeableness appear to be "legitimately" Disagreeableness items (i.e., positive worded items of a scale marked by the opposite end, such as "People think I'm cold and calculating"), in contrast, the negatively keyed items of Neuroticism, for example, are negative because a negating word has been included in an otherwise positively keyed item (e.g., "I rarely feel sad or depressed"; see Appendix B). This finding is even more notable in that the negatively keyed items from the original Agreeableness scale formed a separate factor, whereas those from the other scales were dropped almost without exception (only two Neuroticism, one Extraversion and three Openness negatively keyed items were retained). It is possible the difference in wording across the negatively keyed items of the NEO-FFI scales affected the pattern of results obtained. That is, just as "not sad" is not the same as "happy," perhaps the negation of items on the other scales did not have the intended effect of defining the opposite end of their respective dimensions. Thus, these items might have performed better if they were positively worded and/or if there were more truly negative-pole items (i.e., worded to reflect the opposite end of the dimensions

without use of negators).

The interrelations between the DVM scales and the refined NEO-FFI scales were uniformly low, with only one > .20. Based on previous research, 12 significant relations were hypothesized (16 if Agreeableness and D-A were considered separately), three each with Physical, Psychological (which empirically separated into Marital Control and Verbal IPA) and Sexual IPA. None of these hypotheses were wholly supported, and post hoc analyses revealed several relations between IPA and personality that were not hypothesized. Interestingly, no significant relations were found with Neuroticism, which emerged in previous research as the trait most strongly linked to women's experience of being the target of IPA.

In this sample, Physical IPA was positively related to Extraversion and Agreeableness; Verbal IPA was positively related to Extraversion and Conscientiousness; Sexual IPA was positively related to Agreeableness and Conscientiousness; whereas Marital Control was negatively related to Openness and positively to Dishonesty-Arrogance. It is possible that these differences in the relational pattern were due to the improper translation of several NEO-FFI items; however, it is equally possible that the relations between personality and the experience of IPA actually are different in this rural Indian sample from those found in western samples. Regardless, these data require replication, given that some were post-hoc findings. Further, it is noteworthy that the present study and the two previous ones that have examined relations between IPA and a measure of the FFM all found different relations between the two constructs. It would be valuable to investigate these relations further and to offer and explore, first, explanatory hypotheses for the discrepancies and, secondly, for the mechanisms underlying these

relations.

Interestingly, the relations shown between the refined NEO-FFI scales and four of the IPA-related variables were markedly higher than those between the refined NEO-FFI and the IPA scales. Most notably, the three highest correlations were with items assessing whether respondents considered themselves victims of IPA and whether they had told anyone of or sought help for the IPA they were experiencing. The personality profile (higher levels of Extraversion, Conscientiousness and D-A, and lower levels of Agreeableness) that these variables reveal may offer insight into the personalities of those women who are more likely to stand up against the IPA they suffer and to seek out help for it. Further research is necessary into this topic.

Finally, Study 1 demonstrated areas in which the DVM and NEO-FFI can be adapted or indigenized for future research in a Hindi-speaking, rural north Indian female population. With regard to the DVM, several women in the sample distinguished between their ages at their first wedding, when the marriage was contracted, and at their second wedding, when the woman moved into her husband's natal home. Other women distinguished between their *jait* (husband's older brother) and *devar* (husband's younger brother) when speaking about domestic violence in the home. Both of these discriminations were made in the qualitative responses participants gave when completing the DVM. Finally, qualitative responses to the DVM also revealed several reasons that the women of this study attributed to their experience of IPA. These included division of familial property, study/education and domestic considerations such as food and household chores. Future research with this measure in a similar population could assess these variables more systematically to develop a study more appropriate to

the sample under consideration.

Additionally, the participants in this study reported significantly higher rates of IPA than those reported by the UP NFHS national sample. The same measure of IPA was used in both studies, so it is possible that this discrepancy is due to better rapport between participants and assessors in this study. Specifically, the UP NFHS assessors were unknown to the female participants, whereas this study's assessors had been working with the participants for months, sometimes even years, before the study period began. This may have allowed participants to feel more comfortable in revealing intimate details of their lives, leading to the higher reported rates of IPA. This hypothesis should be addressed in further research, and it is possible that it could offer insight into methodologies that could facilitate research into a private topic like IPA. It is also possible this higher reported rate of IPA is due to a selection bias on the part of the assessors. That is, the communication between the PI and the Indian collaborators was with the director of *Mahila Samakhya* and not the assessors themselves, so the PI does not know what the director told the assessors about what kind of woman to seek out for participation. It is possible that the assessors specifically sought out women they knew to have been the target of IPA in an effort to be more helpful. This would lead to a situation in which the sample described here is not truly a naturalistic or epidemiological one, but instead one selected for the experience of IPA. As such, the rates of IPA described in this sample should be interpreted with caution and not be assumed to generalize.

The relations between the refined NEO-FFI scales and the sociodemographic variables were low and found only between the SD variables and either the personality or IPA scales. An exception to this finding was the relation between wife's employment

status and both Conscientiousness and Verbal and Sexual IPA. However, there are several interesting aspects to the relations when compared to those found with the IPA scales and IPA-related variables, pointing to patterns of discriminant relations. Neuroticism was unrelated to the IPA scales or IPA-related variables, but it emerged as the most consistently related to the SD variables, Agreeableness related most consistently—and Extraversion and Conscientiousness generally consistently—to the IPA scales and IPA-related variables, but was unrelated to the SD variables, whereas D-A was equally related to the IPA scales and the IPA-related and SD variables. Openness was relatively unrelated to the variables assessed in this study, with no significant relations between it and any IPA variable except Marital Control (r = -.17). The most important aspect of these relations, however, is that they are consistently low; across all four sets of variables, only one relation was greater than .40 (personality and SD variables), and only two others were greater than .30 (personality and IPA-related variables).

CHAPTER V. STUDY 2: INTRODUCTION

The above study demonstrated that the Hindi NEO-FFI scales had inadequate psychometric properties in their original form, but that they could be refined for greater psychometric adequacy. Given the necessity of this refinement, a second study was undertaken to establish further the psychometric properties of the refined NEO-FFI scales in a sample of bilingual Hindi-English speakers from the same geographic region. This study can offer further insight into the Hindi translation of the NEO-FFI and the properties of the refined scales established above.

CHAPTER VI. STUDY 2: METHOD

Participants

Participants were 22 men and 42 women living in the city of Gorakhpur, UP, India, recruited over a 6-week study period (November 15, 2009-December 31, 2009). Individuals were eligible to participate if they were 18 years or older and fluently bilingual in both English and Hindi. The average age of this sample was 41 years (SD = 14.4 years); 4 had high school level education, 6 were educated at the college level, and 54 had graduate level education.

Procedure

Participants were recruited through the office of a local ophthalmologist (agreement from the ophthalmologist to aid in the administration of this project is included in Appendix E); specifically, they were clinic patients, or family members or friends of patients. The ophthalmologist directed the PI and a bilingual research assistant to potential participants who were known to him to speak English; these participants then were approached by the PI and a bilingual research assistant and asked to step into an empty room in the office where the PI explained in English the goals, risks and benefits of the study, including that compensation would not be provided for participation. The University of Iowa Institutional Review Board did not require written consent to participate in the study, thus the study procedure began the same day after verbal consent was obtained. Following the formal consent process, the PI spoke to each participant for 5 to 10 minutes to screen for an inadequate level of English fluency. Participants then were asked to complete an English-Hindi reading-comprehension screening instrument, and a personality questionnaire in both Hindi and English (described below).

Study Measures

English-Hindi Reading Comprehension

Screening Instrument

As the personality questionnaires were to be completed in a written format, a brief English-Hindi reading-comprehension screening instrument (see Appendix F) was administered to all participants to determine if they were fluent in written English. This instrument assessed participants' first language, their main spoken language, whether they read media materials in English and/or Hindi, their self-perceived fluency in both English and Hindi, and their formal instruction in both English and Hindi. All potential participants passed this proficiency exam and proceeded with the study procedure.

Personality Questionnaire

Participants then were given the NEO-FFI in both English and Hindi (see *Personality Questionnaire* in the Study 1: Methods section for specifics about the Hindi translation and the English back-translation of this measure, and the psychometrics of the NEO-FFI). The order of administration was randomized across participants.

CHAPTER VII. STUDY 2: RESULTS

The NEO-FFI among Bilingual English-Hindi Speakers

Table 28 presents a comparison of the means and SDs of the standard NEO-FFI scales across three samples: the bilingual-speaking sample (both English and Hindi versions), the community sample from Study 1 and Lodhi and colleagues' (2002) Marathi Indian sample. There are several notable features of this table. First, across traits, the means of the bilingual and community samples are significantly higher than the Marathi Indian sample, reflecting moderate to large effect sizes (effect size$_M$ = .71; range = .59 to .86). Second, the English and Hindi means from the bilingual sample are not significantly different for Neuroticism, Extraversion, Agreeableness and Conscientiousness, but do differ for Openness, with higher means in the English version, although this is only a small effect (Cohen's d = .18). Third, the bilingual and community samples had significantly different means across all traits except Extraversion and Openness, with the bilingual sample endorsing higher rates of Agreeableness and Conscientiousness and lower rates of Neuroticism; these differences reflect small to moderate effect sizes (d_M = .35; range = .17 to .56).

Finally, the community sample had markedly smaller SDs than either sample, with the exception of Extraversion in the bilingual sample, indicating less variance in trait levels across participants. For all traits, the Marathi sample had significantly larger SDs than the community sample (F-statistics ranged from 1.59 to 1.95, M = 1.76, ps < .05). For Neuroticism, Openness and Agreeableness, the Marathi sample SDs did not differ significantly from those of the bilingual sample in either language. However, the Marathi sample did have larger SDs for Extraversion and smaller SDs for Conscientiousness than

did the bilingual sample in both languages (F-statistics from 1.57 to 2.07, $M = 1.86$, ps < .05). Overall, these data indicate that the bilingual sample had more variation than the community sample—with the exception of Extraversion, which was the same—and the community sample had less variance than the Marathi sample. The relations between the bilingual sample and the Marathi sample were more complex, potentially due, at least in part, to the small size of the bilingual sample. Together, these data indicate that both samples from this study endorsed higher levels of all traits, but with either more restricted or more variable range of trait values than the Marathi sample, depending on the trait in question.

Although it is tempting to attribute the observed differences in means and SDs to the language of administration or the NEO-FFI translation, this does not appear to explain the results obtained fully. Specifically, as noted earlier, the Hindi translation had six improperly translated items (3 Openness, 2 Extraversion and 1 Neuroticism items) and five items that the back-translators were unable to translate from Hindi because the Hindi words were unknown to them (2 Openness, 1 each Extraversion, Neuroticism and Agreeableness items). The only trait for which the bilingual sample endorsed different levels in both languages of administration was Openness, and the poorly or improperly translated items were not restricted to this scale, suggesting that improper translation is not a complete explanation, though it may be more so in the case of Openness.

Further, the sample characteristics may account for part of the observed differences, but because sample differences in age, language of administration and geographic region are confounded, it is impossible to know which variable(s) or whether some other variable that was not assessed is/are affecting the results. Specifically, the

Marathi sample was composed of undergraduates of both sexes, and thus perhaps is more similar to the highly educated bilingual sample than to the community sample, which is composed largely of moderately literate to illiterate village women. However, the Marathi sample endorsed lower levels of all traits, levels more in line with the American normative sample, than the samples from the current study. As described earlier, the bilingual sample was given both the original and the translated NEO-FFI, whereas the community sample was given item descriptions decided on by the principal investigator and a bilingual Hindi-English speaker with a graduate degree in psychology rather than the actual translated NEO-FFI. It appears that this different method of administration may not have affected the means and SDs of the two samples to a clinically significant degree, as the effects were relatively modest (although statistically significant); however, due to the multiple confounding differences in sample and method, this cannot be known for certain.

Table 29 presents additional psychometric properties of and interrelations among the standard NEO-FFI scales in the bilingual sample for both the English and Hindi versions. Overall, the scales' test-retest reliabilities are good (r_M = .78; *r* range = .74 [Extraversion] to .85 [Openness]). Recall from Table 21 that the internal consistency reliabilities of the standard NEO-FFI scales in the community sample were low to moderate (αs = .55-.72), markedly lower than those reported for the American normative data and the Marathi Indian sample. The internal consistencies presented in Table 29 are consistent with the community sample for Neuroticism, Extraversion, and Agreeableness, but for Openness the bilingual sample was markedly lower (.51 and .40 in the English and Hindi versions, respectively) and for Conscientiousness the bilingual sample was

markedly higher (.82 and .80 in the two versions, respectively). Finally, the internal consistencies were largely consistent across language of administration, with the exception of Openness (αs = .51 and .40, English and Hindi, respectively). Overall, these data suggest that the original NEO-FFI scales were less internally consistent in both study samples than in previous research. Further, it suggests that these scales (with the exception of Neuroticism and Conscientiousness) may benefit from the psychometric refinement procedure outlined above with the community sample (undertaken below).

The correlations among the English NEO-FFI standard scales ranged from -.02 to .37 (Agreeableness with Openness and Conscientiousness, respectively; *M* = .16). Correlations among the Hindi NEO-FFI standard scales ranged from -.02 to .35 (Agreeableness with Openness and Conscientiousness, respectively; *M* = .18). Further, the pattern of relations was highly similar across the English and Hindi versions, correlating .93. However, the matrices were only moderately similar to that of the NEO PI-R in the American normative sample (*r*s = .79 and .81, English version and Hindi version, respectively), although more so than was the IPA-sample matrix (*r* = .68). Not surprisingly, the bilingual-English and IPA-sample matrices were notably less correlated than the bilingual-Hindi and community sample matrices (*r*s = .83 and .93, respectively). This correlational pattern suggests that the bilingual Hindi version yields the most "central" structure, as it correlates strongly (*r*s = .93) with both the bilingual English and the IPA-sample matrices, as well as moderately strongly with that of the American normative sample (*r* = .83).

Domain-Level Analyses of the NEO-FFI in Hindi and English

As the sample size of the bilingual sample (64 adults) precludes an item- or domain-level factor analysis of the standard NEO-FFI scales in both languages, the refined scales developed with the community sample will be used for the below analyses. Table 30 presents the item loadings for both languages of administration obtained when the items included in the refined NEO-FFI scales were submitted to exploratory principal-factors factor analysis. The range of factor loadings is notably more variable across the bilingual languages of administration than in the community sample (for example, loadings range from .07 to .68 in Hindi Extraversion). However, the average factor loadings are similar across samples, with the exception of Openness ($loadings_M$ = .43, 27 and .27, IPA, Hindi and English, respectively; though the difference is not significant at $p < .05$), which has been proven problematic to replicate in previous research (Rolland, 2002).

Table 31 presents the internal consistencies of, and relations among, the six refined personality scales in both the English and Hindi versions of the NEO-FFI. The IIC_M values for Neuroticism, Extraversion, Agreeableness and Conscientiousness were within the adequate range across both languages, but those for Openness and Dishonesty-Arrogance were not. For the refined Extraversion and Agreeableness scales, these values represent a marked improvement over the internal consistencies of the standard NEO-FFI scales, whereas that for Openness was unchanged and that for Dishonesty-Arrogance was the same as the original Agreeableness scale. The interrelations among the English version scales range from |.01| (Openness with Neuroticism, Agreeableness and

Dishonesty-Arrogance) to .36 (Agreeableness with Dishonesty-Arrogance; *M* = .03), and among the Hindi version scales range from .00 (Extraversion with Openness) to .46 (Agreeableness with Dishonesty-Arrogance; *M* = .05). Overall, the pattern of correlations was similar across the English and Hindi refined versions (*r* = .84); however, they both differed considerably from the IPA matrix, although the Hindi version was slightly more similar (*r* = .35) than was the English version (*r* = .15), perhaps due to the common language of administration. Together, these data suggest that the interrelations among the refined personality scales are relatively inconsistent across the bilingual and community samples, which is likely due, at least in part, to method and sample variation (e.g., reading the items vs. having them read to participants; differences in SES and education).

Table 32 presents the relations among the original and refined personality scales for both the English and Hindi versions of the measure. The highest correlation for each refined scale was the corresponding original scale, for both English and Hindi versions, not surprisingly as they represent a part-whole relation. The Hindi version showed more significant relations than the English version (19 vs. 14); however, none of the correlations were significantly different across versions. Further, the two matrices are significantly similar (*r* = .98), and both are highly similar to the community sample matrix (*r*s = .89 and .86, English and Hindi matrices, respectively), suggesting that the scales among all three matrices are related in similar ways to the originals.

Of the 30 relations reported in each matrix, only five are significantly different in the community sample from the bilingual sample; for each, the bilingual sample relations are markedly similar, from which the community sample deviates (*p*s < .05; original

Neuroticism with refined Agreeableness and Conscientiousness; original Extraversion with refined Agreeableness; original Openness with refined Neuroticism; and original with refined Agreeableness). Further, none of the correlations reported were significantly different between the Hindi and English matrices. Given that the sample sizes were so different between these two groups, it is possible that these differences would attenuate in a larger sample. Finally, Table 33 presents the interrelations among the refined English and Hindi language personality scales. Each scale's highest correlation was with the corresponding scale in the other language, and there were only five other significant relations among these scales, the highest two of which were Agreeableness with D-A.

Table 34 presents the relations between the refined personality scales and the sociodemographic variables in the bilingual sample. Recall that this sample was 66% female, with an average age of 41 years, and 84% had a graduate level education. The correlations presented in Table 34 are low (range = -.17 to .18) and none were statistically significantly different across versions of the personality measure (at $p < .05$). In both the English and Hindi versions, women were higher in Conscientiousness than men (Cohen's *d*s = .33 and .28, respectively); further, females were higher in Openness and Dishonesty-Arrogance as assessed by the Hindi, but not the English, version of the scale. Neither difference has been found in previous Indian samples (Lodhi et al., 2002) or the American normative sample (McCrae & Costa, 1992). Recall from the community sample that wife's education was negatively related to Neuroticism ($r = -.22$), and both husband's and wife's education were positively related to Dishonesty-Arrogance (*r*s = .22 and .20, respectively). Neither of these significant relations emerged in the bilingual sample, likely due to the lack of variance in educational level. Finally, age was

significantly positively related to Agreeableness in the English, but not the Hindi, version of the scale (r = .30); previous meta-analytic research (Roberts & Delvecchio, 2000) supports increases in Agreeableness with age, so it is unclear why this differences does not emerge in the Hindi version.

Table 28. Means and Standard Deviations of the Standard NEO-FFI Scales in Three Samples

	Bilingual Sample (N = 64)						Lodhi et al. (2002) Marathi Sample (N = 259)					
	English		Hindi		Comm. Sample (N = 241)		Females		Males		Total	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Neuroticism	34.3[a]	6.48[1]	34.4[a]	6.57[1]	38.4[b]	4.57[2]	20.8[c]	5.95	19.8[c]	6.13	20.3[c]	6.05[1]
Extraversion	41.4[a]	4.61[1]	41.4[a]	4.57[1]	42.8[a]	4.15[1]	29.5[b]	5.74	31.4[c]	5.70	30.5[b]	5.80[2]
Openness	36.7[a]	4.91[1]	35.0[b]	4.61[1]	35.8[b]	3.68[2]	25.5[c]	4.72	25.9[c]	4.57	25.7[c]	4.64[1]
Agreeableness	39.7[a]	5.16[1]	40.6[a]	5.53[1]	37.5[b]	4.33[2]	31.6[c]	5.12	28.6[d]	5.94	30.1[e]	5.74[1]
Conscientiousness	45.3[a]	7.33[1]	46.0[a]	7.02[1]	44.5[b]	4.71[2]	35.0[c]	5.51	33.9[c]	6.84	34.4[c]	6.23[3]

Note. IPA: Intimate partner aggression. SD: Standard deviation. Comm. = Community. Groups with different superscripts in each row are significantly different ($p < .05$). Lodhi et al. (2002): Lodhi, Deo, & Belhekar (2002).

Table 29. Psychometric Properties of and Interrelations among NEO-FFI Scales in an English-Hindi Bilingual Sample

Scale	# Items	Alpha	IIC_M	1	2	3	4	5
English Version								
1. Neuroticism	12	.69	.16	.79				
2. Extraversion	12	.56	.10	-.21	.75			
3. Openness	12	.51	.08	.10	.05	.85		
4. Agreeableness	12	.56	.10	-.22	.12	-.02	.77	
5. Conscientiousness	12	.82	.28	-.*24*	.18	-.12	***.37***	.74
Hindi Version								
1. Neuroticism	12	.70	.16	--				
2. Extraversion	12	.52	.08	-.18	--			
3. Openness	12	.40	.05	-.05	.09	--		
4. Agreeableness	12	.60	.11	-.20	.22	-.02	--	
5. Conscientiousness	12	.80	.25	-.*25*	***.34***	-.10	***.35***	--

Note. $N = 64$. IIC_M = mean interitem correlation. Correlations in the diagonal of the English Version are the test-retest correlations between the Hindi and English versions of the NEO-FFI. Correlations in *italics*, $p < .05$. Correlations in ***bold italics***, $p < .01$. $r = .93$ between matrices.

Table 30. Item Contents of IPA and Bilingual Sample Personality Scales

Scale	Item Content	IPA	Hindi	English
Neuroticism	When under stress, I feel like I'm going to pieces.	.58	.44	.57
	I feel inferior to others often.	.49	.52	.48
	I feel completely worthless sometimes.	.48	.68	.77
	Often, when things go wrong, I feel like giving up.	.47	.67	.49
	When I feel helpless, I want others to solve my problems.	.44	.45	.51
	Rarely do I feel lonely or down.[1] (R)	.43	.43	.34
	The way people treat me makes me angry often.	.42	.41	.48
	I feel jittery and tense often.	.38	.61	.60
	I feel anxious and fearful rarely. (R)	.35	.20	.23
	At times, I've been so ashamed I wanted to hide.	.57	.20	.26
	Average Loading	**.46**	**.46**	**.47**
Extraversion	I really like to talk to people.	.55	.30	.51
	I like to be where the action is.	.48	.40	.41
	I am cheerful and high-spirited.	.38	.65	.44
	I am very active.	.36	.68	.34
	I laugh easily.	.34	.62	.56
	I would prefer going my own way to being a leader. (R)	.46	.08	.19
	I like to have many people around me.	.44	.07	.21
	Average Loading	**.43**	**.40**	**.38**
Openness	I enjoy contemplating theories and abstract ideas often.[1]	.38	.60	.25
	I am not interested in contemplating the nature of the universe or the human condition. (R)	.39	.53	.40
	Poetry has little or no impact on me. (R)	.43	.10	.25
	Controversial speakers confuse and mislead students.[1] (R)	.50	.23	.20

(table continues)

Table 30 (cont.)

Scale	Item Content	IPA	Hindi	English
	I find daydreaming a waste of time. (R)	.47	.03	.27
	Religious authorities should decide on moral issues. (R)	.40	.14	.23
	Average Loading	**.43**	**.27**	**.27**
Agreeableness	I try to be thoughtful and considerate.	.57	.63	.50
	I try to be courteous to those I meet.	.48	.40	.55
	Almost all people I know like me.	.43	.58	.45
	I would rather cooperate than compete.	.30	.12	.14
	People will take advantage of you if you let them. (R)	-.30	.20	.24
	Average Loading	**.42**	**.39**	**.38**
Dishonesty-	I am stubborn in my attitudes. (R)	.34	.55	.44
Arrogance	If I don't like someone, I let them know it. (R)	.34	.33	-.05
	I am usually skeptical of others' intentions. (R)	.47	.49	.44
	If necessary, I will manipulate others. (R)	.41	.03	.56
	People think I am cold and calculating.	.38	.36	.42
	Some think I am selfish and egotistical.[2]	.36	.09	.32
	Average Loading	**.38**	**.31**	**.37**
Conscien-	I work hard to meet my goals.	.62	.50	.68
tiousness	When I make a commitment, I follow through.	.60	.47	.32
	I perform tasks assigned to me conscientiously.	.53	.79	.54
	I strive for excellence in everything.	.49	.32	.49
	My belongings are neat and clean.	.38	.61	.59
	I pace myself to get things done on time.	.35	.33	.49
	I set goals clearly and work toward them in an orderly way.	.33	.79	.82
	I am productive and get the job done.	.60	.37	.44

(table continues)

Table 30 (cont.)

Average Loading	**.49**	**.52**	**.54**

Note. IPA: Intimate partner aggression. [1] Indicates improperly translated item. [2] Indicates item that includes a word the back-translators did not know. (R) = Reverse-keyed in the original.

Table 31. Psychometric Properties of and Relations among Refined Personality Scales in an English-Hindi Bilingual Sample

Scale	# Items	Alpha	IIC_M	1	2	3	4	5
English Version								
1. Neuroticism	10	.72	.20	--				
2. Extraversion	7	.55	.15	-.18	--			
3. Openness	6	.33	.08	.01	-.09	--		
4. Agreeableness	5	.47	.15	-.14	.07	-.01	--	
5. Dishonesty-Arrogance	6	.40	.10	-.11	.12	.01	***.36***	--
6. Conscientiousness	8	.77	.30	-.23	.22	-.10	.18	***.34***
Hindi Version								
1. Neuroticism	10	.72	.20	--				
2. Extraversion	7	.56	.15	-.17	--			
3. Openness	6	.31	.07	-.13	.00	--		
4. Agreeableness	5	.47	.15	-.12	.23	-.07	--	
5. Dishonesty-Arrogance	6	.37	.09	-.20	.23	*.26*	***.46***	--
6. Conscientiousness	8	.74	.26	***-.33***	*.28*	-.07	*.26*	.12

Note. $N = 64$. IIC_M = mean interitem correlation. Correlations in *italics*, $p < .05$. Correlations in ***bold italics***, $p < .01$. Correlations in ***underlined bold italics***, $p < .001$. $r = .84$ between matrices.

Table 32. Relations among Original and Refined Personality Scales in an English-Hindi Bilingual Sample

Refined Scale	Original Scale				
	Neur.	Extra.	Open.	Agree.	Consc.
English Version					
1. Neuroticism	***.96***	-.24	.12	-.16	-*.29*
2. Extraversion	-.17	***.84***	-.02	.13	.17
3. Openness	-.01	-.04	***.80***	.02	-.07
4. Agreeableness	-.21	.06	-.03	***.73***	.24
5. Dishonesty-Arrogance	-.11	.15	-.02	***.87***	***.36***
6. Conscientiousness	-.21	.19	-.10	***.34***	***.91***
Hindi Version					
1. Neuroticism	***.96***	-.19	-.03	-.23	***-.35***
2. Extraversion	-.17	***.82***	-.02	*.28*	*.30*
3. Openness	-.13	.03	***.75***	.13	-.01
4. Agreeableness	-.12	.18	-.16	***.80***	***.34***
5. Dishonesty-Arrogance	-.16	.19	.07	***.88***	*.26*
6. Conscientiousness	-*.24*	***.30***	-.06	*.25*	***.93***

Note. $N = 64$. Neur.: Neuroticism. Extra.: Extraversion. Open.: Openness. Agree.: Agreeableness. Consc.: Conscientiousness. Correlations in *italics*, $p < .05$. Correlations in ***bold italics***, $p < .01$. Correlations in ***underlined bold italics***, $p < .001$. $r = .98$ between matrices.

Table 33. Relations between the Refined English and Hindi Language Personality Scales

	Hindi					
English	Neur.	Extra.	Open.	Agree.	D-A	Consc.
Neuroticism	***.82****†	-.18	-.14	.03	-.10	-.21
Extraversion	-.18	***.68****†	.10	.10	.14	.19
Openness	.03	.00	***.62****†	-.05	*.29*	.11
Agreeableness	-.03	.07	-.08	***.64****†	***.34***	*.31*
Dishon-Arrogan	-.10	.10	.12	***.33***	***.74****†	.24
Conscientiousness	-*.29*	.21	.01	.08	.07	***.72****†

Note. $N = 64$. Neur.: Neuroticism. Extra.: Extraversion. Open.: Openness. Agree.: Agreeableness. D-A/Dishon.-Arrogan.: Dishonesty-Arrogance. Consc.: Conscientiousness. Correlations in *italics*, $p < .05$. Correlations in ***bold italics***, $p < .01$. Correlations in ***underlined bold italics***, $p < .001$. * Highest correlation in row. † Highest correlation in column.

Table 34. Relations between Refined Personality Scales and Sociodemographic Variables in an English-Hindi Bilingual Sample

Scale	Age *M* (SD) 41 (14.4)	Gender 65.5% Women	Education 84.4% Graduate-level	$\lvert r_M \rvert$
English Version				
Neuroticism	-.08	-.03	-.01	-.04
Extraversion	-.01	-.05	-.04	-.03
Openness	-.03	.12	-.02	.02
Agreeableness	*.30*	.18	.06	.18
Dishon-Arrogan	.21	.21	.17	.20
Conscientiousness	.01	***.33***	.14	.16
Hindi Version				
Neuroticism	.03	.03	.03	.03
Extraversion	-.01	-.22	.09	-.05
Openness	-.16	*.29*	-.10	.01
Agreeableness	.14	.10	-.04	.07
Dishon-Arrogan	.06	*.28*	-.01	.11
Conscientiousness	.07	*.28*	.22	.19

Note. $N = 64$. Dishon-Arrogan: Dishonesty-Arrogance. $\lvert r_M \rvert$ = Mean correlation across sociodemographic variables. Correlations in *italics*, $p < .05$. Correlations in ***bold italics***, $p < .01$.

CHAPTER VIII. STUDY 2: DISCUSSION

The above study was undertaken to investigate further the properties of the original and previously developed refined NEO-FFI scales in a second sample of bilingual Hindi-English speakers from the same geographic region as the first. Comparing the means and standard deviations of the NEO-FFI standard scales across the two samples assessed in this investigation and the Marathi Indian sample (Lodhi et al., 2002) indicated that both samples from this study endorsed higher levels of all traits but with either more restricted or more variable range of trait values than the Marathi sample, depending on the trait in question. Various considerations may have contributed to these results, including improper translation of the NEO-FFI used in this investigation or differences in characteristics across the three samples, but how these may have affected the results is unknown. Further, the internal consistencies of the standard scales across languages of administration in the bilingual sample were similarly low to those found in the Study 1.

The refined scales developed in the first study were investigated in Study 2 to determine whether the improved reliabilities over the NEO-FFI standard scales created in Study 1 would replicate. The summary data from the revision process across both studies are presented in Table 35. Overall, the data indicated that the revision process improved the internal consistency reliability of the Neuroticism and Extraversion scales across both samples (average change in α = .02 and .04 and in IIC_M = .04 and .07, for Neuroticism and Extraversion, respectively). Further, the data also suggested that the empirical separation between Agreeableness and Dishonesty-Arrogance improved the psychometric properties over the original Agreeableness scale although, not surprisingly, as it was the

development sample, the biggest improvement was seen in the community sample. The community sample had the smallest drop in *alpha* (-.03 versus -.09 and -.13, English and Hindi versions of the bilingual sample, respectively) and largest increase in the IIC_M (.09 versus .05 and .04, English and Hindi versions of the bilingual sample, respectively) from the original to revised Agreeableness scales.

These data also demonstrate that the revision was beneficial to Conscientiousness only in the community sample (change in α = .11, -.05 and -.06 and change in IIC_M = .13, .02 and .01, community sample, bilingual sample English and Hindi versions, respectively). The internal consistency reliability values for Conscientiousness were in the adequate range prior to the revision process, which offered little improvement to these psychometric properties in the cross-validation bilingual sample. Similarly, the revision did not benefit Openness in the cross-validation bilingual sample (change in α = -.06, -.18 and -.09 and change in IIC_M = .06, .00 and .00, community sample, bilingual sample English and Hindi versions, respectively). However, the internal consistency reliability values for Openness were not in the adequate range prior to the revision; they simply failed to improve in the bilingual sample after the revision process. The relatively small and homogeneous nature of the bilingual sample may have limited the improvement of the scales. Additional research with larger and more heterogeneous samples is necessary to investigate this question more thoroughly.

The cross-cultural replicability of Openness has been problematic in previous research, and this study is no exception. Lee and Ashton (2004) argue that it is the "most controversial [trait] in terms of the nature of its common content across various lexical studies" (p. 337; see also Ashton & Lee, 2007). Among those aspects that are included or

not included, depending on the language under investigation, are imagination, intellect, unconventionality and rebelliousness. It appears that, in this sample, Openness is most defined by unconventionality and inquisitiveness; further, that five of the six items on the revised Openness scale are reverse-keyed suggests that this trait may be better conceptualized as Lack of Openness. Notably, however, Unconventionality and Inquisitiveness are two of the four facets captured by HEXACO Openness, which also does not include intellect in the definition of this trait.

Further, D-A is a trait included in few personality models and requires future research to establish it in Hindi-speaking populations. Lee and Ashton (2004) asserted that their Honesty-Humility trait, roughly correspondent to (low) D-A in this study, was most parallel to (low) A2 Straightforwardness in the NEO PI-R and the various facets of Honesty-Humility were correlated, on average, -.62 with Levenson and colleagues' (1995) Primary Psychopathy measure. Many of the items present on the D-A factor reflect this lack of straightforwardness (e.g., reverse-keyed 'If I don't like someone, I let them know it') and behavioral tendencies similar to those included on Primary Psychopathy (e.g., a tendency to exploit vs. cooperate with another). More concretely, the distinction between Agreeableness and Dishonesty-Arrogance or Honesty-Humility can be conceptualized as one's willingness to allow others to exploit one versus one's willingness (or lack thereof) to exploit others (Ashton & Lee, 2007). This distinction appears to have been borne out in the items captured by these factors (see Table 30).

At present, based on the results of this study, there are enough data to suggest that additional research into the six-factor personality model obtained in this investigation is necessary. It appears that this study's six-factor model shares at least superficial

similarities to the Lee and Ashton (2004) HEXACO model (e.g., six factors, two factors comprising Agreeableness and [lack of] Honesty-Humility). However, the interrelatedness of the factors is dissimilar to those obtained with the HEXACO measure and the psychometric properties of some of the factors were not adequate across both study samples. Additional research will help to establish this model more firmly in the Hindi language, which will allow investigators to study its usefulness in the target population.

Table 35. Summary of Internal Consistencies of Original and Refined NEO-FFI Scales in Both Study Samples.

	Neur.	Extra.	Open.	Agree.	D-A	Consc.
# Items (Revised)	12 (10)	12 (7)	12 (6)	12 (5)	-- (6)	12 (8)
			Alpha			
Original IPA	**0.72**	0.57	0.66	0.55		0.61
Revised IPA	**0.73**	0.62	0.60	0.52	0.52	**0.72**
Original English	0.69	0.56	0.51	0.56		**0.82**
Revised English	**0.72**	0.55	0.33	0.47	0.40	**0.77**
Original Hindi	**0.70**	0.52	0.40	0.60		**0.80**
Revised Hindi	**0.72**	0.56	0.31	0.47	0.37	**0.74**
			Mean Inter-item Correlation			
Original IPA	**0.18**	0.09	0.14	0.09		0.11
Revised IPA	**0.21**	**0.19**	**0.20**	**0.18**	**0.15**	**0.24**
Original English	**0.16**	0.10	0.08	0.10		**0.28**
Revised English	**0.20**	**0.15**	0.08	**0.15**	0.10	**0.30**
Original Hindi	**0.16**	0.08	0.05	0.11		**0.25**
Revised Hindi	**0.20**	**0.15**	0.07	**0.15**	0.09	**0.26**
			Change in Alpha			
Comm. Sample	0.01	0.05	-0.06	-0.03		0.11
Bilingual English	0.03	-0.01	-0.18	-0.09		-0.05
Bilingual Hindi	0.02	0.04	-0.09	-0.13		-0.06

(tables continues)

Table 35 (cont.)

	Neur.	Extra.	Open.	Agree.	D-A	Consc.
	Change in Mean Inter-item Correlation					
Comm. Sample	0.03	0.10	0.06	0.09		0.13
Bilingual English	0.04	0.05	0.00	0.05		0.02
Bilingual Hindi	0.04	0.07	0.02	0.04		0.01

Note. Neur. = Neuroticism. Extra. = Extraversion. Open. = Openness (to Experience). Agree. = Agreeableness. D-A = Dishonesty-Arrogance. Consc. = Conscientiousness. IPA = Intimate Partner Aggression sample. Comm. = Community. English and Hindi values are drawn from the bilingual sample NEO-FFI English and Hindi versions, respectively. Values in **bold** are in the established adequate range for the *alphas* and mean inter-item correlations.

CHAPTER IX. GENERAL DISCUSSION

The above studies approached the issues of personality and intimate partner aggression from the perspective of indigenized psychology, and began to address the importation of measures of these constructs to a rural, north Indian sample of women. To begin the importation process, I first demonstrated agreement among Indian and Western researchers with regards to the components of these constructs and that the Western measures used to assess these constructs were psychometrically reliable and valid, creating a 'baseline' structure to which the results obtained in the married Indian female sample could be compared.

Next, I turned to an examination of whether the pattern of results obtained with these measures in the community sample was consistent with results obtained in other linguistic, geographic, ethnic and cultural groupings. The results suggested that the original NEO-FFI trait scales should be refined for greater psychometric adequacy. This refinement process produced a six-factor personality model that resembled the HEXACO model developed by Lee and Ashton (2004). Research has demonstrated this model shows consistent relations to the FFM (Lee, Ogunfowora & Ashton, 2005), but that it offers incremental predictive utility above the FFM, including in non-western cultures and samples (Ashton & Lee, 2007; Ashton et al., 2006). Further, the present study appears to provide the first data examining the HEXACO framework in an Indian sample. Although this study was not intended to examine this model, the psychometric properties of the six personality factors obtained suggest that it is a valuable avenue for further research. However, it would be potentially more valuable to adopt a lexical (vs. a translational) approach to the investigation of normal personality in the Hindi language,

consistent with the approach used to develop the FFM in the U.S. This method would be similar to the emic methodology adopted by Narayanan and colleagues (1995) above, but with the added benefit of considering all potential personality markers in the Hindi language. Such an approach would, of course, require more resources than a translation approach, but it might produce a more representative personality structure.

Further, qualitative responses to the DVM suggested variables that should be addressed in future research to assess the IPA construct meaningfully in similar samples. These variables include age at both first and second weddings, the definitions of brothers-in-law in Hindi and the reasons for IPA. Additionally, it appears that the degree of familiarity between the study participants and the interviewers may affect reported rates of IPA, as they were significantly higher in this sample, in which there was a high degree of familiarity, than in previous research in the same geographic and cultural grouping, in which familiarity may have been lower (e.g., as in the typical case of outside researchers). However, it also is possible the higher reported rate of IPA was due to a selection bias in recruiting subjects or to a combination of these two factors.

At a conceptual level, however, the relations between personality and IPA shown in this sample were much lower than expected, and the study hypotheses regarding these relations were only partially supported. Further, post-hoc analyses revealed relations between the two constructs that have not been found in previous research. It is likely that several factors described previously (e.g., poor translation of the study measures) influenced these relations.

However, it is worth noting that the hypotheses developed for this study were not based specifically on prior research into FFM trait-IPA links, as few studies have

considered these constructs together, but instead were based on associations to IPA found with psychopathology and behavioral patterns that are linked theoretically to personality. Further, the correlational findings suggest that the relations between personality and experience of IPA are small to moderate. Specifically, in previous research, the relations between Neuroticism and IPA ranged from -.04 to .59, with an average of .29. Relations between traits in the externalizing spectrum and IPA range from -.02 to .45, with an average of .23 (data not originally reported as correlations were converted for this analysis, if possible; e.g., differences between means were translated to Cohen's *d* and then to *r*). Overall, significant relations between personality and IPA in the community sample were small (r_M = .17; r_{range} = .13 to .22) and based on more circumscribed personality constructs than previously obtained results (i.e., the revised scales had, on average, only 7 items and required more items to reach standard levels of internal consistency reliability). When considering only those relations that were hypothesized to be significant, the average correlation was lower, particularly for Neuroticism (Neuroticism r_M = .04; Agreeableness r_M = .13; Dishonesty-Arrogance r_M = .09; Conscientiousness r_M = .13). However, the Study 1 results were found despite the difficulties inherent in the personality measure and the methodology used (e.g., participants had the personality items read to them). Given all of this, that even small correlations were found when previous research suggests that only small to moderate relations are expected offers hope that future research that corrects these issues will prove more fruitful. Finally, given that only two previous studies have investigated an FFM measure with IPA, and that these two did not find exactly the same relations between the two constructs, the post-hoc relations found in Study 1 here offer valuable information

for future research.

Interestingly, in Study 1 personality was arguably more strongly and consistently related to the IPA-associated variables (e.g., considering oneself a victim of IPA; seeking out help for IPA) than the IPA scales themselves (among the significant relations, r_M = .20 and $|r|_{range}$ = .13 to .37). Further, in contrast to the relations between personality and the IPA scales, the strongest relations between the IPA-associated variables and personality were consistent (i.e., the strongest relations were found with high Extraversion, D-A and Conscientiousness and low Agreeableness). This suggests a consistent association between personality and behavior, offering some evidence of construct validity for the refined personality scales developed in this study.

Finally, it is worth briefly discussing the consistent lack of relations shown between Neuroticism and the variables of interest considered. One could argue that the significantly higher levels of Neuroticism in the community sample created a situation in which restricted range created insufficient variability to allow for relations between Neuroticism and IPA to emerge. However, this is unlikely, because every personality trait in the community sample was endorsed at higher rates and with lower variability than the Lodhi and colleagues (2002) Marathi sample, yet they still showed significant relations with the IPA scales and the IPA-associated variables. Further, Neuroticism was the trait most consistently significantly associated to the sociodemographic variables, suggesting that it did have some predictive utility in this sample. Given these data, it is possible that in this sample Neuroticism simply was not related to IPA for reasons that are both theoretically and empirically unclear. Clearly, given the findings in the broader literature, this is an important question for future research.

This study offers a first step in establishing the psychometric properties of the DVM and the NEO-FFI to begin the indigenization process of these measures; nonetheless, there were limitations to the study design. First, the quality of the NEO-FFI translation made it impossible to use in its original form, necessitating accommodations to its delivery that could have affected the results obtained. Second, the results suggest that the HEXACO personality measure might have been more appropriate for use in this study than an FFM measure and that a Hindi translation of the HEXACO measure could be a valuable addition to the personality research literature, as a search for one was unsuccessful. Although there are consistent relations between the HEXACO and FFM models, they are not interchangeable, especially given the fact that the HEXACO model has been shown more representative of personality structure in non-Western cultures than the FFM model (e.g., it is able to capture culturally-based departures from the FFM model, similar to those mentioned by Narayanan et al., 1995). It is possible that the relatively weak personality-IPA relations found in this study might be increased with a personality measure more appropriate to the research context. Nonetheless, the results suggest that further steps into the importation of these personality and IPA measures to a Hindi-speaking Indian context are warranted and may offer valuable insights into the cross-cultural variations in these constructs.

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APPENDIX A: *MAHILA SAMAKHYA* AGREEMENT

महिला समाख्या, गोरखपुर
(मानव संसाधन, विकास मंत्रालय)
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दिनांक 03/03/09

Dear Ms Leigh Wensman'

You have contacted us regarding your interest to investigate Personality and Socio Cultural predictors of INTIMATE PARTNER VIOLENCE (IPV) in Gorakhpur (U.P.) India and its surrounding areas in the month of Nov/Dec. 2009 as part of your on going research at your place.

It would be our pleasure to offer our services to you to help you to conduct this project by way of providing a Project Co-ordinator, Field who would identify IPV couples, help you interviewing the couples and collect Data.
Once the project had completed you will submit project report to us.
Exact methodology, format of the whole process and remuneration etc to these persons can be decided in our decided in our further communications.

With best wishes.

Shagufta Yasmeen
District Programe Co-ordinator
Mahila Samakhya, Gorakhpur

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APPENDIX B: BACK-TRANSLATION OF NEO-FFI FROM HINDI TO ENGLISH

1. Original: I am not a worrier.
   Back-translation 1: It is not in my nature to worry.
   Back-translation 2: It is not in my nature to worry.

2. I like to have a lot of people around me.
   I like to be surrounded by people.
   I like to be surrounded by people.

3. I don't like to waste my time daydreaming.
   I do not like building castles in the air.
   I do not wish to waste my time by building castles in the air.

4. I try to be courteous to everyone I meet.
   I try to treat the people I meet with humility/tenderness.
   I try to treat everyone I meet with politeness.

5. I keep my belongings neat and clean.
   I like to keep my things/possessions neat and tidy.
   I keep my things spic and span.

6. I often feel inferior to others.
   I often think I am inferior to others.
   I often consider myself to be of a lower status than other people.

7. I laugh easily.
   I laugh easily.
   I laugh easily.

8. Once I find the right way to do something, I stick to it.
   When I learn to do something well, I really get into it.
   Once I find the right way to go about a task, I dedicate myself to it.

9. I often get into arguments with my family and coworkers.
   I often get into arguments with family members and my peers.
   I often find myself arguing with my family and colleagues.

10. I'm pretty good about pacing myself so as to get things done on time.
    I know how to alter my speed in order to achieve deadlines.
    I am capable of adjusting my pace in order to complete my work on time.

11. When I'm under a great deal of stress, sometimes I feel like I'm going to pieces.
    Whenever I am working in stressful circumstances, I feel as if my world is collapsing.

Whenever I work under stress, I feel like I will have a nervous breakdown.

12. I don't consider myself especially "light-hearted."
    I generally do not consider myself to be an extrovert.
    I do not think of myself as an extrovert.

13. I am intrigued by the patterns I find in art and nature.
    Sometimes I get confused by the depictions found in nature and the arts,
    Different forms of art and nature sometimes leave me flabbergasted.

14. Some people think I'm selfish and egotistical.
    In the opinion of katipay people, I am selfish and egoistical.
    I am selfish and egoistic when it comes to taking advice from katipay.

15. I'm not a very methodical person.
    I am not a diligent worker.
    I am not the kind of person who can be time bound while working.

16. I rarely feel lonely or blue.
    I seldom find myself alone.
    I rarely find time for myself.

17. I really enjoy talking to people.
    I truly enjoy talking to people.
    I feel happy talking to other people.

18. I believe letting students hear controversial speakers can only confuse and mislead them.
    I consider that allowing students' arguments to be heard is akin to confusing and misleading them.
    I feel that advising students to indulge in argumentative discussions is the same as confusing misleading them

19. I would rather cooperate with others than compete with them.
    I would prefer to assist other people instead of competing with them.
    I prefer to work in harmony with others as opposed to compete against them.

20. I try to perform all the tasks assigned to me conscientiously.
    I try to perform the work given to me with complete diligence.
    I try to complete all the tasks that are given to me with utmost dedication.

21. I often feel tense and jittery.
    I feel stressed and worried a lot.
    I often find myself tense and troubled.

22. I like to be where the action is.

I like to live in places that have a lot of activity.
I like being in places that have lots of activities

23. Poetry has little or no effect on me.
    Poetry has little or no effect on me.
    I am almost never influenced by poetry.

24. I tend to be cynical and skeptical of others' intentions.
    My nature is to be cynical/suspicious and closed towards other people's intentions.
    My nature is to be suspicious of other people's intentions.

25. I have a clear set of goals and work toward them in an orderly fashion.
    I have clear goals in front of me and I work systematically/methodically towards achieving them.
    I have set goals ahead of me, and I go about it in an orderly manner,

26. Sometimes I feel completely worthless.
    Sometimes I feel absolutely useless.
    Sometimes I feel completely useless.

27. I usually prefer to do things alone.
    Ordinarily, I like to work alone/by myself.
    Ordinarily, I prefer to work by myself.

28. I often try new and foreign foods.
    I like to eat food I have not tried before.
    I often experiment with food that I have not eaten before.

29. I believe that most people will take advantage of you if you let them.
    In my opinion, for the most part if you give people the opportunity, they will try to take advantage of you.
    I feel that if given a chance, people will try to take advantage of you.

30. I waste a lot of time before settling down to work.
    I waste a lot of time before I get involved in my work/in working.
    I often waste a lot of time before I finally get started on a task.

31. I rarely feel fearful or anxious.
    I am seldom worried and afraid/scared.
    I rarely get impatient or angry.

32. I often feel as if I'm bursting with energy.
    A lot of times I feel as if I am jumping for joy.
    I often feel as if I am bubbling with raptures of joy.

33. I seldom notice the moods or feelings that certain environments produce.

I seldom pay attention to feelings that arise from different circumstances.
I rarely pay attention to emotions that arise out of life's situations.

34. Most people I know like me.
A lot of the people who know me like me.
Most of my acquaintances like me.

35. I work hard to accomplish my goals.
I work really hard to achieve my goals.
I put my heart and soul in my work for peace of mind.

36. I often get angry at the way people treat me.
I get angry frequently at how people treat me.
I feel angry at the way people treat me certain times.

37. I am a cheerful, high-spirited person.
I am a happy and lively man.
I am a happy-go-lucky individual.

38. I believe we should look to our religious authorities for decisions on moral issues.
It is my policy/belief that we should leave our political/moral decisions to our religious leaders.
I believe that issues of political nature are best resolved by our religious leaders.

39. Some people think of me as cold and calculating.
Some people consider me to be a cold and cautious person.
Some people think that I am cold and calculated.

40. When I make a commitment, I can always be counted on to follow through.
If I give my word on something, I can be trusted on it.
Once I give my word to someone, I can be trusted to abide by it.

41. Too often, when things go wrong, I get discouraged and feel like giving up.
Sometimes when things go wrong, then my enthusiasm drops and I feel like leaving them.
I feel disheartened when things don't go right and feel that I cannot carry on.

42. I am not a cheerful optimist.
I am not a perpetual optimist.
I am not hopeful pramudit.

43. Sometimes when I am reading poetry or looking at a work of art, I feel a chill or wave of excitement.
Sometimes when reading a poem or watching an artist perform I have felt my heart beat faster.
Sometimes while reading poetry or appreciating an artist's work, I can often feel

sihran and my heart racing.

44. I'm hard-headed and tough-minded in my attitudes.
    In my opinion I am a very strict and stubborn person.
    I feel that I am a short tempered and strict individual

45. Sometimes I'm not as dependable or reliable as I should be.
    Sometimes I am not as responsible and trustworthy as I should be.
    I am sometimes not as responsible and trustworthy as I would like to be.

46. I am seldom sad or depressed.
    I am seldom sad or avsadagrasth.
    I am seldom sad and avsadagrasth.

47. My life is fast-paced.
    My life is very fast-paced.
    My life is very fast-paced.

48. I have little interest in speculating on the nature of the universe or the human condition.
    I have very little interest in daydreaming about the state of mankind or the truth of the world.
    I do not feel good thinking about an idealistic world and man's role in it.

49. I generally try to be thoughtful and considerate.
    I am normally courteous and try to ensure other people's convenience.
    I am normally respectful of others and try to make sure that they are always comfortable.

50. I am a productive person who always gets the job done.
    I am so hardworking that I always get my work done.
    I am efficient enough to complete all my work by myself.

51. I often feel helpless and want sometime else to solve my problems.
    I often think that I am helpless and wish that someone else would solve a problem for me.
    I often feel helpless and wish that some else would solve my problems.

52. I am a very active person.
    I am a very busy man/person.
    I am a very active individual.

53. I have a lot of intellectual curiosity.
    I have a baudhik curiosity.
    I am intellectually inclined.

54. If I don’t like people, I let them know it.
    I tell the people that I don't like about how I feel towards them.
    I usually let people know if I do not like them.

55. I never seem to be able to get organized.
    I may not be able to compose myself.
    Sometimes I am not able to compose myself.

56. At times I have been so ashamed I just wanted to hide.
    Sometimes I felt so ashamed that I wished I could hide somewhere.
    Sometimes I feel so ashamed that I feel like sinking into the ground.

57. I would rather go my own way than be a leader of others.
    I prefer to walk down the path I choose rather than follow others.
    I like to travel my own path instead of following/imitating other people.

58. I often enjoy playing with theories or abstract ideas.
    I often struggle between principles and fantasies.
    I sometimes struggle with principles and ideals.

59. If necessary, I am willing to manipulate people to get what I want.
    If necessary to get what I want, then I am ready to cheat people to achieve it.
    If needed I would manipulate people to get what I want

60. I strive for excellence in everything that I do.
    Whatever work I do, I try to be the best at it.
    I want to be the best at whatever I do.

APPENDIX C: SOCIODEMOGRAPHIC INFORMATION

1. Age: _____
2. How old is your husband? _____
3. How old were you when you got married? _____
4. How old was your husband when you got married? _____
5. Number of children living at home: _____
6. Number of children not living at home: _____
7. Age of oldest child: _____
8. Age of youngest child: _____
9. How many years of formal education have you had? _____
10. How many years of formal education has your husband had? _____
11. Are you currently employed outside of the home? Yes No
12. (If employed outside of the home) What is your current monthly income? _____
13. Is your husband currently employed outside of the home? Yes No
14. (If employed outside of the home) What is your husband's current monthly income? _____
15. What is your religion?
    a. Hindu
    b. Muslim
    c. Christian
    d. Sikh
    e. Jain
    f. Other (Please specify) _____
    g. None

APPENDIX D: NFHS DOMESTIC VIOLENCE MODULE

Now I would like to ask you questions about some other important aspects of a your life. I know that some of these questions are very personal. Let me assure you that your answers are completely confidential and will not be told to anyone else and no one else will know that you were asked these questions.

DV01: First, I am going to ask you about some situations which happen to some women. Please tell me if these apply to your relationship with your husband?

				IF RESPONDENT SAYS YES: How often did this happen during the last 12 months: often, sometimes, or not at all?		
				OFTEN	SOME-TIMES	NOT AT ALL
a)	He very jealous or angry if you talked to other men?	YES NO	1 → 0	3	2	1
b)	He frequently accuses you of being unfaithful?	YES NO	1 → 0	3	2	1
c)	He does not permit you to meet with your female friends?	YES NO	1 → 0	3	2	1
d)	He to limits your contact with your family?	YES NO	1 → 0	3	2	1
e)	He insists on knowing where you are at all times?	YES NO	1 → 0	3	2	1
f)	He does not trust you with any money?	YES NO	1 → 0	3	2	1

DV02: Now if you will permit me, I'd like to ask some more questions about your relationship with your husband. It's important that you answer as many of the questions as possible, but if there is a question that you simply do not want to answer, just let me know and we will move on to the next question.

Does your husband ever:	**IF RESPONDENT SAYS YES:** How often did this

						happen during the last 12 months: often, sometimes, or not at all?
				OFTEN	SOME-TIMES	NOT AT ALL
a)	Say or do something to humiliate you in front of others?	YES NO	1 → 0	3	2	1
b)	Threaten to hurt or harm you or someone close to you?	YES NO	1 → 0	3	2	1
c)	Insult you or make you feel bad about yourself	YES NO	1 → 0	3	2	1
d)	Push, shake or throw something at you?	YES NO	1 → 0	3	2	1
e)	Slap you?	YES NO	1 → 0	3	2	1
f)	Twist your arm or pull your hair?	YES NO	1 → 0	3	2	1
g)	Punch you with his fist or with something that could hurt (her/you)?	YES NO	1 → 0	3	2	1
h)	Kick or drag you or beat you up?	YES NO	1 → 0	3	2	1
i)	Try to choke or burn you on purpose?	YES NO	1 → 0	3	2	1
j)	Threaten or attack you with a knife, gun, or any other weapon?	YES NO	1 → 0	3	2	1
k)	Physically force you to have sexual intercourse with her even when you did not want to?	YES NO	1 → 0	3	2	1
l)	Force you to perform any sexual acts that you did not want to?	YES NO	1 → 0	3	2	1

IF THERE ARE NO 'YES' RESPONSES IN DV02, GO TO DV05.

IF THERE IS AT LEAST ONE 'YES' RESPONSE IN DV02, ASK DV03 AND DV04:

DV03: How long after you first got married to your husband did these things first happen?
IF LESS THAN ONE YEAR, RECORD '00'. NUMBER OF YEARS _____

DV04: Did the following ever happen as a result of what your husband did to you?

						IF RESPONDENT SAYS YES: How often did this happen during the last 12 months: often, sometimes, or not at all?
				OFTEN	SOME-TIMES	NOT AT ALL
a)	Say or do something to humiliate you in front of others?	YES NO	1 → 0	3	2	1
b)	Threaten to hurt or harm you or someone close to you?	YES NO	1 → 0	3	2	1
c)	Insult you or make you feel bad about yourself	YES NO	1 → 0	3	2	1
d)	Push, shake or throw something at you?	YES NO	1 → 0	3	2	1
e)	Slap you?	YES NO	1 → 0	3	2	1
f)	Twist your arm or pull your hair?	YES NO	1 → 0	3	2	1
g)	Punch you with his fist or with something that could hurt (her/you)?	YES NO	1 → 0	3	2	1
h)	Kick or drag you or beat you up?	YES NO	1 → 0	3	2	1
i)	Try to choke or burn you on purpose?	YES NO	1 → 0	3	2	1
j)	Threaten or attack you with a knife, gun, or any other weapon?	YES NO	1 → 0	3	2	1
k)	Physically force you to have sexual intercourse with her even when you did not want to?	YES NO	1 → 0	3	2	1
l)	Force you to perform any sexual acts that you did not want to?	YES NO	1 → 0	3	2	1

				OFTEN	SOME-TIMES	NOT AT ALL
a)	You had cuts, bruises or aches?	YES	1 →	3	2	1
		NO	0			
b)	You had eye injuries, sprains, dislocations or burns?	YES	1 →	3	2	1
		NO	0			
c)	You had deep wounds, broken bones, broken teeth, or any other serious injury?	YES	1 →	3	2	1
		NO	0			

DV05: Does your husband drink alcohol? YES NO (If no, go to DV08)

DV06: How often does he get drunk? OFTEN SOMETIMES NEVER

IF THERE IS AT LEAST ONE 'YES' RESPONSE IN DV02, AND A 'YES' RESPONSE TO DV05, ASK DV07.

DV07: Do you think that your husband's drinking makes your husband treat you worse or makes your husband more violent towards you?

YES NO

DV08: From the time you were 15 years old, has anyone other than your husband hit, slapped, kicked or done anything else to hurt you physically? YES NO (If no, go to DV10)

DV09: Who has hurt you in this way?

Anyone else?

RECORD ALL MENTIONED

MOTHER/STEP-MOTHER	1
FATHER/STEP-FATHER	2
SISTER/BROTHER	3
DAUGHTER/SON	4
OTHER RELATIVE	5
MOTHER-IN-LAW	6
FATHER-IN-LAW	7
BROTHER-IN-LAW	8
SISTER-IN-LAW	9
OTHER:_____	10

DV10: In the last 12 months, how often have you been hit, slapped, kicked, or physically hurt by this/these person(s)? OFTEN SOMETIMES

DV11: Are you pregnant or have you ever been pregnant?

YES NO (If no, go to DV13)

DV12: Has anyone ever hit, slapped, kicked or done anything else to hurt you physically while you were pregnant? YES NO (If no, go to DV13)

DV13: Who has hurt you in this way?

Anyone else?

MOTHER/STEP-MOTHER	1
FATHER/STEP-FATHER	2
SISTER/BROTHER	3

	DAUGHTER/SON	4
	HUSBAND	5
	OTHER RELATIVE	6
	MOTHER-IN-LAW	7
RECORD ALL MENTIONED	FATHER-IN-LAW	8
	BROTHER-IN-LAW	9
	SISTER-IN-LAW	10
	OTHER:_____	11

DV14: The first time you had intercourse with your husband, would you say that you had it because you wanted to or because you were forced to have it against your will?
WANTED TO FORCED TO

DV15: In the last 12 months, how many times has your husband forced you to have sex against your will? 0 TIMES 1-10 TIMES OVER 10 TIMES

DV16: As far as you know, did your father ever beat your mother?
YES NO DON'T KNOW

DV17: Did you ever see your father beat your mother? YES NO

DV18: Thinking about what you yourself have experienced among the different things we have been talking about, have you ever tried to seek help to stop your husband from doing any of these things to you again?
YES NO (If no, go to DV19)

DV19: From whom have you sought help?	OWN FAMILY	1
	HUSBAND'S FAMILY	2
Anyone else?	FRIEND	3
	NEIGHBOR	4
	RELIGIOUS LEADER	5
	DOCTOR/MEDICAL PERSONNEL	6
RECORD ALL MENTIONED	POLICE	7
	LAWYER	8
	SOCIAL SERVICE ORGANIZATION	9
	OTHER:_____	10

DV20: Have you ever told anyone else about these things happening to you? YES NO

DV21: Do you consider yourself a victim of domestic violence? YES NO

THANK THE RESPONDENT FOR HIS/HER COOPERATION AND REASSURE HIM/HER ABOUT THE CONFIDENTIALITY OF HIS/HER ANSWERS.

APPENDIX E: DR. SHARMA AGREEMENT

Dr. S. K. Sharma
Gorakhpur, UP
India

Dear Mrs Leigh Sharma,

You have approached me about your interest in working with my office in conducting your dissertation research investigating the Personality of Bilingual Hindi-English Speakers in Gorakhpur, Uttar Pradesh, India.

It would be my pleasure to help you to conduct this project by way of allowing you to recruit individuals in my office and use a back room of my office for your research protocol.

The specifics of my part in this project can be decided in future communications.

With best wishes □ □

Dr. S. K. Sharma
Gorakhpur, UP
India

APPENDIX F: ENGLISH-HINDI READING COMPREHENSION SCREENING INSTRUMENT

English-Hindi Reading Comprehension Screening Instrument

1. What is your first (primary) language? Hindi English
2. What language do you speak more often in your home? Hindi English
3. What language do you speak more often outside your home? Hindi English
4. Do you read newspapers, magazines and/or books in Hindi? Yes No
5. Do you read newspapers, magazines and/or books in English? Yes No
6. Do you consider yourself fluent in Hindi? Yes No
7. Do you consider yourself fluent in English? Yes No
8. How many years of formal Hindi instruction have you received?

   < 3 years 3-5 years 5-7 years > 7 years
9. How many years of formal English instruction have you received?

   < 3 years 3-5 years 5-7 years > 7 years