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Intimate Partner Violence Associated With Poor Health Outcomes in U.S. South Asian Women[1,2]

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To assess the associations between Intimate Partner Violence (IPV) victimization and health outcomes of South Asian women in Greater Boston. To explore the nature of the health experiences of victimized women in this population. Cross-sectional surveys with a community-based sample of women in relationships with males ($n = 208$) assessed demographics, IPV history, and health. In-depth interviews were conducted with a separate sample of women with a history of IPV ($n = 23$). Quantitative data were assessed by logistic regression, qualitative data by a grounded theory approach. Twenty-one percent of the quantitative sample reported IPV in the current relationship. Abused women were significantly more likely than those with no history of IPV in their current relationship to report poor physical health (95% CI = 1.3–12.0), depression (95% CI = 1.8–9.3), anxiety (95% CI = 1.3–6.4), and suicidal ideation (95% CI = 1.9–25.1). Qualitative subjects described how victimization resulted in injury and chronic health concerns and how IPV-induced depression and anxiety affected their sleep, appetite, energy, and wellbeing. Experiences of IPV are related to increased poor health among South Asian women. This elevated risk demands intervention. Healthcare providers should be trained to screen and refer South Asian patients for partner violence.

KEY WORDS: women's health; battered women; emigration and immigration; South Asian American women; intimate partner violence (IPV).

INTRODUCTION

Although South Asians comprise one of the largest (1) and fastest-growing (2) populations in the United States (U.S.) (3), the health needs of people of Indian, Pakistani, Bangladeshi, Nepali, Sri Lankan, Bhutanese, and Maldivian ancestry living in the U.S. have been largely unexplored. One topic that has been investigated in the context of this population of more than 2 million (4) is intimate partner violence (IPV). A recent study of South Asian women in the U.S. indicates that two in five

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[2]*Conflict of Interest:* Anita Raj is a volunteer with and advisor to Saheli, the local South Asian CBO of volunteers providing cultural programs in the South Asian community and helping women in crisis. She has provided domestic violence advocacy and community education in the local South Asian community, and she has served as a South Asian Advisor to Asian Task Force Against Domestic Violence (ATFADV), the local Asian domestic violence program in Boston. Both Saheli and ATFADV assisted with recruitment for the current study. Saheli events that were not domestic violence-specific served as venues for recruitment for the cross-sectional study. Saheli and ATFADV cases of domestic violence were referred to the qualitative study.

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women in intimate relationships with men have ever experienced physical and/or sexual IPV at the hands of current partners (5, 6). This IPV prevalence is considerably higher than that found by two recent surveys of representative U.S. samples (7, 8). While research has begun to document abuse and its legal and social implications among South Asian women (5, 6, 9–16), data on the health-related correlates of abuse in this population have been limited.

Health concerns associated with IPV have been well documented in other diverse populations (17, 18). In the U.S., the bulk of this research has focused on White, African American, and Latino populations (9, 19–21). U.S. studies have demonstrated a connection between IPV and eight out of 10 of the leading health indicators (22), including overweight and obesity (23), tobacco use (24), substance abuse (25), responsible sexual behavior (26), mental health (27), injury and violence (28), immunization (29), and access to health care (17). Additional negative health sequelae associated with IPV include chronic pain and arthritis (30), gastrointestinal illness (31), hypertension (32), sleeping disorders (27, 33–35), homicide (36), and HIV/AIDS (37). Overall, this body of research documents poorer physical and mental health among IPV victims. Other studies demonstrate reduced daily functioning (including inhibited ability to perform such activities as work and child care) and quality of life as a consequence of poor health among abused women (38–40).

Only three studies have quantitatively investigated the link between poor health and IPV among South Asian immigrant women. Two cross-sectional studies indicate an increased risk of suicide and suicide attempts among battered South Asian women in the U.S. (41, 42) but do not measure other aspects of mental health. The third study (drawing from the current data set) found a link between IPV in the current relationship and sexual and reproductive health concerns (43). No study to date has assessed associations between IPV and general physical and mental health and wellbeing among South Asian immigrant women in the U.S.

Given the high reported rates of IPV among South Asians in the U.S. (5, 6) and the growing number of South Asians in this country (2, 4), there is a need for more research on the health correlates of IPV in this population. In this article, we expand on previous work conducted on the health concerns associated with IPV by describing and analyzing the impact of IPV on the physical, mental, and functional health of a community-based sample of South Asian women in Greater Boston. Our objectives are: 1) to quantitatively assess the associations between IPV and health outcomes of battered South Asian women in the U.S., and 2) to explore the lived health experiences of abused U.S. South Asian women through qualitative interviews.

METHODS

This study was composed of a quantitative and a qualitative arm. The quantitative arm consisted of a survey assessment with South Asian women currently in heterosexual relationships ($n = 210$), the qualitative of in-depth interviews with South Asian women reporting a history of victimization from a male partner ($n = 23$).

We recruited participants in the cross-sectional survey ($n = 210$) via community outreach (fliers, snowball sampling, referrals) to participate in a South Asian women's health study conducted from August, 2001 to January, 2002; the recruitment strategies used did not allow us to assess response rates. Participants were required to be South Asian women age 18 or older, currently involved with a male partner for 3 months or more, residing in Greater Boston, with a male partner residing in Greater Boston. We collected survey data through 15-min, anonymous surveys offered either at locations deemed convenient by participants (e.g., participants' homes or nearby libraries) ($n = 201$) or over the phone for women who preferred not to complete the survey in person ($n = 9$). Due to the sensitivity of phone interviews and referral, all phone interviews were conducted by the Principal Investigator of the study. The survey assessed demographics, history of IPV in the current relationship, and physical and mental health outcomes and experiences. All survey data were collected in English. Our current sample excluded two participants who did not provide IPV data, resulting in a sample size of $N = 208$ for current quantitative analyses.

We recruited in-depth interview participants ($n = 23$) via referral from community leaders known for assisting battered women as well as via outreach to all participants of the cross-sectional survey; we asked women with a history of IPV (in current or past relationships) to participate in a study of IPV in South Asian immigrant women conducted from August 2001 to May 2002. Two of the 23 interview participants were recruited from among cross-sectional survey participants. The

remaining participants were recruited through community leaders; these were women age 18 or older who had sought assistance or support for domestic violence from our recruiters. Again, our recruitment strategies did not allow us to assess response rates. We collected interview data on IPV, help-seeking, the immigrant experience, and health through 60- to 90-min confidential audio-taped interviews offered in locations of the participants' choosing; we also collected quantitative data from the interviewed women via survey. Interviewers were women trained in women's health, domestic violence, and the interview tool, as well as service referral. Due to resource limitations, we planned to collect all data in English. Nonetheless, some interviewees lapsed into South Asian languages for parts of interviews. We attempted to elicit repetition of the information in English, but when participants were unable to translate, we translated interviews simultaneously with transcription. Nine of our 23 interviews required at least some translation/transcription. We linked transcribed or translated/transcribed tapes to survey data via unique identifiers to preserve confidentiality.

We obtained written consent from all participants surveyed or interviewed; we obtained verbal consent from all telephone participants. We provided participants in both arms of the study with a list of referrals for culturally tailored IPV, mental health, and sexual health services upon completion of participation. Telephone participants received this list verbally at the time of the interview and later received a copy of the list as well as the consent form and the monetary incentive by mail. South Asian women trained in women's health as well as survey and in-depth interview administration served as proctors and interviewers for the studies. All participants received $15 incentive for survey participation and $50 incentive for in-depth interview participation. The Institutional Review Board of Boston University Medical Center approved these studies.

Sample

Our cross-sectional survey sample ($N = 208$) ranged in age from 18 to 68 years (median = 30 years). The vast majority of participants (96%) were Indian; 91% were not US-born. One-third of participants (37%) were US citizens; 26% were legal permanent residents and 21% were on spousal visas. Women reported immigration from 1 month to 40 years ago (median = 6.5 years); 25% of the sample had immigrated within the past 2 years. The sample was relatively high-income and highly educated, with 67% reporting an annual household income of $50,000 or greater and 46% reporting postgraduate training; 13% of the sample reported a high school education or less. The majority of participants (82%) were married, and 95% reported that their current partner was of South Asian ancestry.

In-depth interview participants ($n = 23$) ranged in age from 25 to 53 years (median=37 years). This sample was slightly less educated and lower in income than the survey sample, and a sizeable minority of interviewed women was Bangladeshi; the two samples were otherwise demographically similar. One-fourth of interviewees (26%) reported a high school education or less; 39% of the sample had postgraduate training. One-third of the sample (35%) reported an annual household income of $20,000 or less; 35% reported an annual household income of $50,000 or more. The majority of the interview sample (65%, $n = 15$) was Indian, and 30% ($n = 7$) were Bangladeshi; one participant was Nepali. All were non-US born; 57% ($n = 13$) were legal permanent residents, 17% ($n = 4$) were US citizens, and 13% ($n = 3$) were on spousal visas. Participants had been in the US for 0.5–20 years (median = 6 years); 57% came to the US because of marriage. Approximately half of interviewees (48%, $n = 11$) were currently involved with their abusive partner. Small sample sizes precluded analyses of significant differences between survey participants and in-depth interviewees.

Quantitative Measures

Demographics were assessed via single item measures of age, income, education, immigrant status, and recency of immigration. *IPV in Current Relationship* was defined as physical abuse, sexual abuse, or injury from abuse perpetrated by the current partner and was assessed via four items adapted from the Massachusetts Behavioral Risk Factor Surveillance System (44). Response options for these items were "Yes, 1–2 times in the past year," "Yes, more than 2 times in the past year," "Not in the past year but previously in our relationship," and "Never in our relationship." A summation score was created based on these items and dichotomized as "IPV ever in current relationship" versus "No IPV ever in current relationship."

Health outcomes were also assessed via single item measures taken from the Massachusetts

Behavioral Risk Factor Surveillance System (44). A single item assessed number of days in the past 30 days experiencing *physical health* concerns, including "illness and injury." Three mental health items assessed number of days in the past 30 days experiencing *general mental health concerns* ("stress, depression, and problems with emotions"), *depression* ("depressed, sad, or blue"), and *anxiety* ("anxious, worried, or tense"). Physical and mental health responses were dichotomized as "seven or more days" and "fewer than seven days" for analysis. An additional question, adapted from the Youth Risk Behavior Survey (45), used a yes/no response pattern to assess *suicidality* in the past year. Two functional health items assessed *pain-inhibited normal activity* and *poor physical or mental health-inhibited normal activity* (normal activity was defined as "including self-care, work, and recreation"). One item assessed number of days in the past 30 days experiencing *sleep disruption* ("inadequate sleep or rest"). Again, responses were dichotomized as "seven or more days" and "fewer than seven days" for analysis.

For analyses other than suicidal ideation, the 7-day mark was selected as the pivot point to capture a potentially modest effect size in our small sample. The National Behavioral Risk Factor Surveillance System (46) typically analyzes the questions from which our measures were adapted using 15 days as the pivot point. For the purposes of this preliminary study, we chose conservative measures to be sure to include effects that may not be extreme, but may still be important.

Qualitative Measures

The in-depth interviews involved 12 open-ended questions regarding the participant's relationship with the abusive partner, types of abuse experienced, perceived health-related effects of the abuse, present health status, and utilized or needed social, legal, and health services.

Quantitative Data Analysis

We conducted frequency analyses on prevalence of poor physical, mental, and functional health outcomes among the total of cross-sectional survey participants and the subsamples of participants with and without a history of IPV in the current relationship. Logistic regression analyses, adjusted for demographics significantly related to the dependent variable in bivariate analyses, were used to assess associations between IPV and health outcomes; 95% confidence intervals were used to assess significance of associations identified in regression analyses.

Qualitative Data Analysis

We conducted qualitative analysis of transcribed in-depth interviews using a grounded theory approach to iteratively generate codes based on emergent themes (47). This technique provides the researcher with tools to link concepts, facilitating the development of a model for understanding human experience (48). Based on this approach, two trained coders read each transcript, identifying and recording ("memoing") themes. Following review of the 23 transcripts, memos were reviewed for recurring themes across transcripts. These were viewed as emergent codes. Following memoing, the two coders reviewed text for each code category and memoed linkages across categories. Inter-coder reliability was assessed using the technique used by Carey *et al.* (49). This technique involved the division of each transcription into segments; coders then independently coded the segments. Each segment could have multiple codes. In cases of discrepancy between coders, the coders worked to reach consensus; if consensus was not reached, the Principal Investigator made the final decision. Themes identified via this procedure included experiences of IPV, immigration status and IPV, help-seeking behaviors and poor health outcomes.

RESULTS

Quantitative Findings

IPV Prevalence

One in five (21%, $n = 44$) participants in the cross-sectional survey reported physical or sexual abuse ever from the current partner; 15% ($n = 31$) reported IPV in the past year from the current partner. Of women reporting IPV in their current relationship, 55% ($n = 24$) reported physical assault, 91% ($n = 40$) reported sexual assault, and 30% ($n = 13$) reported injury from assault.

Table I. Cross-Sectional Survey With Community-Based Sample of South Asian Women ($n = 208$): Physical, Mental, and Functional Health Outcomes Based on History of IPV With the Current Partner With Adjusted Odds Ratios and 95% Confidence Intervals

	Sample % (*n*/*N*)	IPV victims % (*n*/*N*)	No IPV % (*n*/*N*)	Adjusted odds ratio (95% CI)
Physical health				
Poor physical health 7 or more of the last 30 days	9.5% (18/190)	19.5% (8/41)	6.7% (10/149)	4.0 (1.3–12.0)[a]
Mental health				
Poor mental health 7 or more of the last 30 days	16.1% (31/192)	31.7% (13/41)	11.9% (18/157)	2.4 (0.9–6.2)[b]
Depression 7 or more of the last 30 days	14.9% (30/201)	31.8% (14/44)	10.2% (16/157)	4.1 (1.8–9.3)
Anxiety 7 or more of the last 30 days	23.2% (46/198)	34.1% (15/44)	20.1% (31/154)	2.8 (1.3–6.4)[b]
Suicidal ideation, last year	5.4% (11/203)	15.9% (7/44)	2.5% (4/159)	6.9 (1.9–25.1)[c]
Functional health				
Pain-inhibited daily activity 7 or more of the last 30 days	6.7% (13/193)	9.5% (4/42)	6.0% (9/151)	1.5 (.4–5.3)[a]
Health-inhibited daily activity 7 or more of the last 30 days	7.9% (15/189)	12.2% (5/41)	6.8% (10/148)	3.0 (0.9–10.3)[d]
Sleep disruption				
Sleep disruption 7 or more of the last 30 days	29.9% (59/197)	39.5% (17/43)	27.3% (42/154)	2.1 (1.0–4.2)[e]

[a]Adjusted for recency of immigration.
[b]Adjusted for recency of immigration and immigrant status.
[c]Adjusted for education.
[d]Adjusted for immigrant status.
[e]Adjusted for recency of immigration and income.

Prevalence of Poor Health Outcomes

Poor physical health was reported by 10% of the overall sample ($n = 20$), and poor mental health by 16% of the sample ($n = 33$). Depression was reported by 15% ($n = 31$) of the sample; anxiety by 23% ($n = 48$), and suicide by 5% ($n = 11$). Sleep disruption was reported by 30% of the sample ($n = 62$). Pain-inhibited normal activity was reported by 7% of participants ($n = 14$), and health-inhibited activity was reported by 8% ($n = 16$) (see Table I).

Associations Between IPV and Poor Health

Abused women, as compared with women reporting no history of abuse in their current relationship, were significantly more likely to report poor physical health (AOR = 4.0, 95% CI = 1.3–12.0), depression (AOR = 4.1, 95% CI = 1.8–9.3), and suicidal ideation (AOR = 6.9, 95% CI = 1.9–25.1). Trends based on odds ratios of 2.0 or greater and confidence intervals including 0.9 or 1.0 were observed between IPV and sleep disruption (AOR = 2.1, 95% CI = 1.0–4.2); IPV and physical or mental health-inhibited functional health (AOR = 3.0, 95% CI = 0.9–10.3); and IPV and general mental health (AOR = 2.4, 95% CI = 0.9–6.2). IPV was not significantly associated with pain-inhibited functional health (see Table I).

Qualitative Findings

Qualitative analyses documented several subthemes under the overarching theme of poor health related to IPV victimization. These include injury from abuse, chronic physical health concerns, mental and emotional health concerns, suicidal ideation and suicide attempts, diminished functional health, and disturbances in sleeping and appetite.

Injury From Abuse

Interviewed women described ongoing pain and scars from incidents of severe physical assault (e.g., hitting with objects, kicking, burning, blows to the head and face) resulting in injury.

> That day he hurt me to bad with the beer bottle, my ankle got hurt and I was not able to walk properly . . . When I was with him, sometimes I could not even walk properly.

> There were times when I was, would go to class with the limping because he would have kicked me with shoes, you know.

> And he also burn all over my body from the iron. Sometimes four or five. I have still scars all over my body. And lots of scars. Burning, he burnt my leg and everything.

> I have (had) a severe headache. And my husband has hit me (in the head). And I cannot even talk... He hit me on my ear, my left ear, and it started bleeding from the back, which I did not realize... I reached work with wet blood coming from back of my ear. I could not move my head.

Chronic Physical Health Concerns

In addition to the pain and injury as a direct result of the abuse, women no longer in the abusive relationship described how chronic and intermittent pain, particularly headaches, backaches, and gastrointestinal concerns, resulted from the stress and trauma from past abuse.

> I still have pain in my body. I feel like, every night, he used to hit me every night. In the morning, still I have in my body pain. If it is a cloudy day, I will get sad, I will get depressed, my body will start pain. I'm talking, right now, I know he is not around me (anymore) but I think that he's around me and watching me and my body gets very sick to talk about him.

> I get stress headaches now. Bad stress headaches that I cannot get better in the morning. Lots of problems I have, mostly headaches. I, umm, I have, umm, severe pain in my left arm, they say it's also because of stress where my arteries constrict. Very bad pain ... I don't know. I have been very stressed.

> I used to start having hiccups, you know ... They would start coming automatically ... I, I had blocked mentally blocked myself to, you know, think that, ok, now what is coming, what's next coming, and it's always like, aaa ... it's not a pleasure it always aaa ... rape kind of thing ... Every time he would come in, I would start having these hiccups very hard, you know, and they would not go away, they just keep coming.

Mental and Emotional Health Concerns

Women described ongoing anxiety and depression both within the context of the abusive relationship and once they had left the relationship.

> At first (in the abusive relationship), I questioned my own sanity and wondered if there was something wrong with me. I felt very helpless. I was depressed and confused. Helplessness then turned into anger. (After leaving) My doctor says I am in depression. It does affect my health. I am losing weight. I am not happy.

> I have PTSD (posttraumatic stress disorder) ... I've been losing some of my memory and I cannot pay attention to anything. I have a panic disorder. I have a sleeping disorder and I have lots of other health issues.

> I'm always stressful. Always sad, always depressed. I'm going therapist, I have a doctor. I can tell my story. Back then I didn't have anything, I was dependent on him, and he was hurting me.

Suicidal Ideation and Suicide Attempts

Interviewed women described suicidal ideation and suicidal behaviors. Suicidality generally occurred within the context of the abusive relationship, but sometimes subsequent to leaving the batterer, as well.

> Basically working in a lab, I had access to all chemicals; I could have done anything what I wanted. I thought about suicide.

> ... Things happened again. So, that was the one and only time when I actually physically did something to myself ... I just took (an overdose of) extra strength Tylenol.

> One time I went to the river to commit suicide. Then my brother in law came and hit me. He said, "You are taking away the honor of the family"... I was mentally dead. Every time, I just wanted to go commit suicide. That is the only thing on my mind.

Diminished Functional Health

Women described how pain, poor physical health, stress, depression, and exhaustion kept them from engaging in normal life functions including time with family, recreation, work, and sexual relationships. Women tended to attribute reduced functioning to mental and emotional health concerns and exhaustion rather than to poor physical health or physical limitations.

> I am in now lot of stress all the time. I feel like ... When I come home, I feel like "I just want to lie down." My children tell me, "Mom, lets go out. Mom, I will take you for dinner. Mom, lets celebrate mother's day." I say, "No, I am so tired. I don't feel like going out."

> My health now is very bad. I'm always mentally upset. I am physically upset. I don't have the strength to do much work.

> I can't have it [sex] every day, I don't want it. It takes away my energy ...

Women further explained how the reduced functioning was in part affected by their diminished ability to enjoy life.

> (After the abuse) I started to lose my self-confidence and the, because earlier I used to be very bubbly, full of energy. But then I . . . I just lost everything . . .

> This (with fear and anxiety) is the way I was spending my life here, the country of my dreams. I am so tired mentally.

> Till today I have no feelings for anything. . . They killed me alive when I was young only.

Sleep Disruption

Many women described the effects of abuse on their patterns of sleeping. Women described the ways anticipation of imminent abuse and generalized stress from living in an abusive relationship interfered with sleep.

> If I had to go to the bathroom, I would not go, because he is a light sleeper. So if I wake up and go to the bathroom he comes to know that I am awake, I've gone to the bathroom and he would come after me to have sex. So I would hold it hold it till next morning or till I wake up my kid and then go to the bathroom. So it was such a bad situation. . .You can't sleep when you are holding the bathroom in.

> I was constantly stressed and frightened in the house. I often stayed awake through the nights worrying about my baby, my own health, my living situation, and my marriage. I had so much weighing heavily on my mind and my heart.

Women who were no longer with their abusers also described how they are continually haunted by nightmares recalling the abuse. As a consequence, some of these women came to fear bedtime and suffered the physical effects of exhaustion.

> I still have the emotional stress. I mean, I even dream about the things that actually occurred with him when I was there. . . It is such a disturbed sleep now I do not want to go to bed.

> . . . Sometimes I used to dream that he is coming and choking my umm, umm, throat.

Appetite and Eating Concerns

Eating concerns, not measured in our quantitative survey, were a recurring theme in in-depth interviews. Many women described how the stress of abuse affected their appetite, often resulting in weight loss. Appetite suppression occurred both within and subsequent to leaving the abusive relationship.

> I lost my appetite (in the abusive relationship). I mean I was not able to eat properly. I mean because the emotional stress maybe.

> My doctor says I am in depression. It does affect my health. I am losing weight. I am not happy.

> I'm not eating. I don't feel hungry at all. Even once in a day if I eat, I feel it is enough for me. I don't feel that I should eat. Because I was never like this. I used to eat a lot.

DISCUSSION

This U.S.-based study demonstrates that South Asian women victimized by IPV in their current relationship are significantly more likely to report poor physical and mental health than South Asian women reporting no such victimization. These health effects, apparently mediated through stress, erode abused women's sense of wellbeing and diminish their quality of life.

Interviews with South Asian victims of IPV indicate that physical health concerns stem both directly from injury and indirectly from the stress of IPV victimization. Acute physical complaints related to injury included burns, scars, and limp. Chronic complaints included headache, backache, and other body pain; recurring hiccups; and gastrointestinal problems. Women reported that these chronic health concerns began within the abusive relationship and continued beyond the termination of the relationship with the batterer. These findings are consistent with studies of U.S. women of other racial and ethnic heritage. The themes of partner-inflicted injury are echoed in U.S.-based emergency room data, which indicate that 11–30% of women whose injury mechanisms were recorded owed their injuries to IPV (17, 50). While acute physical outcomes are devastating, other data support our finding that many physical health concerns persist long-term, even after the abuse has ended (17, 51–53). Research with other U.S. populations corroborates the chronic health themes of body pain and gastrointestinal problems (17, 32, 54–56).

Mental health concerns significantly associated with IPV victimization in our sample included anxiety, depression, and suicidality; interviews reinforced these themes and, as with physical health concerns, demonstrated that women experience mental health concerns during and beyond the abusive

relationship. Interviewed women describe tremendous stress, sadness, and worry as well as bouts of uncontrollable crying. Similarly, the most frequently cited IPV-related mental health outcomes in the research literature include depression, posttraumatic stress disorder, suicidality, and generalized anxiety disorders, often out-lasting the abuse (18). Our findings are also consistent with previous research from South Asian immigrant communities demonstrating increased risk for suicide among battered women (41, 42).

While the current study did not find significant associations between IPV and functional health or sleep disruption, trends suggest both associations. Qualitative data support these associations. Many interviewed women described decreased energy for child care. Only one woman described limited strength for work. Although women described pain and injury, they cited the stress of IPV as the cause of their inhibited activity. Disturbed sleep—including sleeplessness and nightmares—and appetite reduction were frequently noted by interviewed women as effects of the immediate trauma and long-term stress and anxiety resulting from IPV. Past studies of the effect of victimization on health status cite an association between abuse and functional health, including the ability to work both in and outside the home (34, 35, 38–40), as well as associations between abuse and disrupted sleep, including nightmares (27, 33–35) and between abuse and diminished appetite (57). Lack of significant findings related to health- and pain-inhibited activity and disturbed sleep may be a function of sample size or may indicate that the high educational status and affluence of this sample was protective. More studies with socioeconomically diverse samples of South Asian women and broader measures of activity are needed to illuminate this issue.

While the current work offers important contributions to the field by documenting, for the first time, poor health outcomes among South Asian victims of IPV residing in the U.S., findings must be considered in the context of certain study limitations. Women were recruited via community outreach; thus, all women included in the current analyses were tied into the local South Asian community and/or formal domestic violence services. The IPV-related health needs of more isolated South Asian women remain unknown, but are likely worse than those observed in the current study, given that IPV-related injuries (6) and poor health worsen with isolation (58, 59). While the use of cross-sectional analyses limits assumptions of causality, qualitative findings from our sample and previous longitudinal study of other types of abuse (60) support the likelihood that poor health outcomes are a consequence of IPV. Our reliance on self-report data makes our quantitative findings subject to recall and social desirability biases; such biases, however, would more likely result in underreporting rather than overreporting of IPV(5). Our resource-limited study also necessitated the use of an English-based survey and a local convenience sample; these constraints resulted in a predominantly affluent, highly educated Asian Indian sample of women, limiting generalizability to the broader population of South Asian immigrants. Nonetheless, Asian Indians do comprise the overwhelming majority of South Asians in the United States (61) and are disproportionately more affluent and educated than the general U.S. population (62), so study findings may be generalizable to the Asian Indian community. Limitations of the current quantitative study call for longitudinal analysis of the associations between IPV and poor health with larger samples representative of the diverse ethnic groups comprising the South Asian community.

The generalizability of the qualitative study arm was also limited by the use of a convenience sample of women who identify as having had a history of IPV. Efforts were made to include women who were still with the abusive partner as well as women who had left their batterer and women who were tied into formal IPV services as well as those who had not accessed formal services. All women, nonetheless, were reached through formal or informal community-based IPV service providers and likely had more support than more isolated women. Further qualitative study of abused South Asian women who are isolated or who may not identify as abused, as well as of women identified via health care providers rather than domestic violence service providers, would provide further insight into the associations between IPV and poor health. Qualitative study is also warranted with diverse samples of South Asian women.

Despite these limitations, data from the current study demonstrate increased, enduring physical and mental health risk among battered South Asian women in the U.S. Given the large and growing number of South Asian residents of the U.S. (1–3) and the high prevalence of IPV in this community (5), better response efforts must be developed to assist battered South Asian women. Such efforts should

come from both the South Asian community and the health care system and must involve cooperation between these groups. South Asian Community-Based Organizations (CBOs) must work to increase health care providers' awareness of their services. Further, CBOs must identify and support victims of IPV and refer them to sensitive health care providers aware of their increased health risks. Health providers working with South Asian patients must screen for past and current IPV (18) and refer identified victims to culturally appropriate IPV services (63). This approach will be particularly important for immigrant South Asians, who may be less aware of available IPV services (64, 65). Health care providers should also be prepared to refer these women to tailored legal counseling services, as awareness of legal provisions may enable a woman to leave her abusive partner or report the abuse (43).

Given the increased depression, anxiety, and suicide risks among IPV victims from our sample and the cultural stigmas around both IPV and mental health in the South Asian community (12, 66, 67), special efforts are needed from both health care providers and South Asian CBOs to support South Asian IPV victims' linkage to mental health and trauma services. With the necessary attention from providers and CBOs with access to South Asian women, the impact of abuse can be lessened and the quality of women's lives restored.

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