Functioning outcomes for abused immigrant women and their children 4 months after initiating intervention

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ABSTRACT

Objective. *To measure the impact of shelter intervention and protection orders on the mental health functioning, resiliency, and further abuse of documented and undocumented immigrant women and their children in Houston, Texas, United States.*

Methods. *A prospective cohort study initiated in 2011 examined a subsample of 106 immigrant mothers, primarily from Mexico and Central America, and evaluated their functioning with a battery of 13 well-established instruments as they accessed either shelter or justice services; followed-up was conducted 4 months later to measure improvement. Data were analyzed with a series of repeated measures 2 x 2 x 2 factorial analysis of variance tests.*

Results. *Large effect size improvements were observed in abused immigrant women's mental health, resiliency, and safety, regardless of whether the intervention accessed was safe shelter or justice services, and regardless of duration of shelter stay and whether or not a protection order was issued. Similarly, large effect size improvements were observed in child functioning, independent of which type of intervention, the duration of shelter stay, or the issuance of a protection order.*

Conclusions. *Accessing protective services has the potential to improve the health of immigrant women and their children, regardless of documentation status. Global policy for improved access and acceptability of shelter and justice services is essential to promote immigrant women's safety and to maximize functioning of women and children.*

Key words Violence against women; domestic violence; emigrants and immigrants; child behavior; United States.

Intimate partner violence (IPV) and immigration are prevalent public health and social issues affecting women worldwide. As reported in the World Health Organization (WHO) multi-country study, women are victims of partner violence at epidemic rates (1) with lasting detrimental effects to health and functioning (2, 3). When abused women are mothers, the effect of abuse has an intergenerational impact and can negatively influence child behavior and functioning. Children who witness partner abuse have a higher risk of psychological problems, such as depression and Post Traumatic Stress Disorder (PTSD) (4, 5), physical ailments, such as asthma and growth delays (6), and behavioral problems, such as aggression and learning delays (7, 8). The traumatic effects of IPV exposure during childhood extend to psychosocial adjustment disorders when transitioning to adulthood (9). Furthermore, children whose parents are immigrants are at greater risk of partner violence exposure due to poverty, displacement, stress, communi-

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cation difficulties, and a lack of a stable support system (10).

The number of immigrant women is growing around the world (11). Immigrant women who are victims of partner violence endure more cultural, economic, and legal challenges compared to non-immigrant women (12, 13). These challenges are intensified when the women are undocumented in the host country (14–16). Prevalence data of partner violence among immigrant women in the United States are unavailable (17–19) and no literature was identified on the functioning and safety of immigrant women who report abuse before and after seeking intervention assistance.

Safe shelters and the justice system are the two primary models of care that exist for abused women worldwide. The differential effectiveness of these models toward the safety and wellbeing of immigrant women, documented and undocumented in the host country, is unknown. The objective of the present study was to address the critical gap in research on intervention outcomes for abused, documented and undocumented, immigrant women with children in the host country. Specific outcomes of maternal mental functioning, resiliency, and abuse 4 months after a shelter stay or contact with justice services were evaluated, along with whether or not the duration of shelter stay and or receipt of a protection order made a difference in outcome measures. Furthermore, the study considered whether documentation status in the host country made a difference in outcome measures. Lastly, child behavioral functioning was assessed 4 months after the abused immigrant mother received services.

MATERIALS AND METHODS

This study of 106 immigrant women is part of a larger study of 300 abused women detailed elsewhere (20). Since the median length of stay at a shelter in the Houston metropolitan area was 21 days, the group was divided in two: those with stays less than or equal to 21 days and those with stays greater than 21 days. For women applying for a protection order, two categories emerged: those who received a protection order and those who did not. The time measurement referred to entry into the study and 4 months later. Documentation status indicated whether the participant had documents required to legally reside in the United States, such as a green card, or no such documentation. Maternal functioning outcomes included mental functioning (i.e., anxiety, depression, PTSD, and somatization); resiliency (i.e., marginalization, safety behaviors, self-efficacy, and social support), and abuse (at risk of murder, threats, sexual, and physical abuse). Child outcomes included internal, external, and total behavioral problems. The study was approved by the institutional review board of Texas Woman's University (Houston, Texas, United States). All participants signed informed consent forms.

Procedures

Abused immigrant women were recruited through women's shelters and the Harris County District Attorney's office. As women reached out to use either of these services, English and Spanish speaking researchers provided the women with an overview of the study and invited them to participate. Entry interviews, as well as follow-up interviews, took 45 minutes to complete. Data were coded and entered into a database to maintain the confidentiality of study participants. Contact information was collected for each woman, including a back-up contact number of a close relative or friend through whom the woman might be reached for follow-up if necessary.

Participants

A total of 106 women self-identified as an immigrant to the United States. To be enrolled in the study, the women had to have at least one child. The majority (69 women; 73%) were from Mexico; the remaining women came from countries in Central America. Fifty-six (52.8%) were recruited from a shelter, while the remaining 50 came from the justice system (47.2%). Of these 106 immigrant women, 64 (55.5%) did not have legal documentation to reside in the United States. Table 1 shows these demographics.

Instruments to measure maternal mental functioning

Brief Symptom Inventory (BSI). This 18-item, shorter version (21) of the BSI-53 measures one global score of psychological distress and three sub-indices: anxiety, depression, and somatization. Internal consistency reliability ranges from 0.74 to 0.89

TABLE 1. Demographic frequencies and percentages, means, and standard deviations for abused immigrant women (*n* = 106) participating in a study to measure outcomes following use of a shelter or justice services, Houston, Texas, United States, October 2010–October 2013

Characteristic	No.	%
Ethnicity		
White	15	14.2
African American	2	1.9
Hispanic	84	79.2
Other	5	4.7
Documentation status		
Foreign-born with legal U.S. documents	42	44.5
Foreign-born without documents	64	55.5
Relationship status with abuser		
Not currently in a relationship with the abuser	55	51.9
Currently in a relationship with the abuser	51	48.1
Graduated from high school/high school diploma?		
No	59	55.7
Yes	47	44.3
Randomly-chosen child's gender		
Male	64	60.4
Female	42	39.6

	No.	Mean (range)	SD[a]
Age of woman (years)	106	32.9 (18–52)	7.66
Child age (years)	106	7.5 (2–16)	4.34
Children 1.5–16 years of age	106	1.9 (1–5)	1.03
Months in relationship	103	103.8 (2–300)	71.68
People living in household	104	3.8 (1–9)	1.64

[a] Standard deviation.

on the three subscales. Test-retest reliability over 2 weeks ranges from 0.68 to 0.91.

Post-Traumatic Stress Disorder (PTSD) (22). This 7-item symptom scale screens for PTSD and is a subset of items from the National Institute of Mental Health Diagnostic Interview Schedule for DSM-IV. A score of 4 or greater defines a positive case of PTSD with a sensitivity of 80%, specificity of 97%, positive predictive value of 71%, and negative predictive value of 98%.

Instruments to measure maternal resiliency

Safety Behavior Checklist (23). The checklist is a 7-item safety survey to assess present use of safety behaviors and to chart future adoption (24). Content validity was established by a group of nurse researchers in the field of violence against women, and since has been used to evaluate safety behaviors adoptions. Scoring of the checklist is "adjusted" for purposes of interpretation and comparison and can range from 0–7.

General Self-Efficacy Scale (25). This 10-item instrument was created to assess a general sense of perceived self-efficacy with the aim of predicting coping and adaptation after stressful life events. Responses to each item are made on a 4-point scale and scores can range from 10–40. Criterion-related validity is documented in numerous correlation studies and Cronbach's alphas ranged from 0.76 to 0.90, with the majority in the high 0.80s (25).

Norbeck Social Support (26, 27). The 6-item instrument measures multiple components of social support including functional properties of social support (e.g., emotional and tangible support) and the amount of support from specific sources (e.g., relatives, friends). A 5-point rating scale is used to describe the amount of support available from each person (26, 27). An extra question, which follows the Norbeck standard questions, asks if the abused woman has shared the violence with this individual.

Koci Marginality Index (KMI) (26). This 5-item, abbreviated version of the KMI-95 items and KMI-70 items is a 5-point Likert scale to assess women's marginality, the perception of living on the periphery of the social center. In previous research, the internal consistency (Cronbach alpha coefficient) of the (KMI-70) was 0.96 (n = 244) (28).

Instruments to measure maternal abuse

Danger assessment scale (DAS) (29). This 19-item questionnaire with a yes/no response format is designed to assist women in determining their potential risk for becoming a femicide victim. All items refer to risk factors that have been associated with murder in situations involving abuse. Initial reliability of the instrument was 0.71 and ranged from 0.60–0.86 in five subsequent studies (30). Weighted scoring results in four ranges of danger: < 8 = variable danger; 8–13 = increased danger; 14–17 = severe danger; and 18 or more = extreme danger.

Severity of Violence against Women Scale (SVAWS) (31). This is a 47-item instrument designed to measure threats of physical violence (19 items) and physical assault (28 items). For each item, the woman responds using a 4-point scale to indicate how often the behavior occurred. The possible range of scores is 19–76 for the threats of abuse and 28–112 for physical assault. Initial internal consistency reliability estimates ranged from 0.92–0.96 for a sample of 707 college female students and from 0.89–0.96 for a scale of 208 community women (31). Subsequent reliability for abused women ranged from 0.89–0.91 for threats of abuse and 0.91–0.94 for assault (32, 33).

Instruments to measure child functioning

Achenback Child Behavior Checklist, age 1.5–5 years and age 6–18 years (CBCL) (34, 35). This standardized instrument provides a parental report of the extent of a child's behavioral problems and social competencies (34). The CBCL is verbally administered to a parent who rates the presence and frequency of certain behaviors on a 3-point scale (0 = not true; 1 = somewhat or sometimes true; and 2 = very true or often true). Examples of behaviors include, "cruel to animals," "bully behavior," and "vandalism." The CBCL consists of two broadband factors of behavioral problems: internalizing and externalizing with mean scale scores for national normative samples, as well as clinically referred and non-referred samples of children (34, 35).

Data analysis

Data were confidentially encoded and entered into a secure database. In order to test the time (baseline, 4 month) by effect (days at shelter, receipt of purchase order,) by document status (documents, no documents), a series of repeated measures 2 x 2 x 2 factorial analysis of variance (ANOVA) tests were conducted. When significant interactions were found, further simple univariate ANOVAs were conducted to detect where significant differences were. For these F-tests, partial eta squared was used as the standardized measure of effect size. Partial eta square can be interpreted as ~0.01 as a small effect, ~0.06 as a medium effect, and any value >0.14 as a large effect (36). Additionally, due to slight deviations from normality, as indicated by standard deviations (SD) greater than half the mean, all parametric analyses were confirmed using non-parametric equivalencies, and the findings reported that follow were consistently found across both parametric and non-parametric analyses.

RESULTS

Four months after a shelter intervention, the following effects and outcomes were observed among the mothers.

Outcomes of a shelter intervention on mothers

Maternal mental functioning. There was a large effect size (η^2 = 0.491) of time on BSI Global Scores for women who sought safe shelter. As reported in Table 2, at 4 months followup, women from the shelter group had significantly lower mean BSI Global Scores compared to baseline, regardless of days at shelter and documentation status. Large effect size differences over time were also measured for the three subscales of Anxiety (η^2 = 0.377), Depression (η^2 = 0.415), and Somatization (η^2 = 0.347), irrespective of number of days spent at the shelter or documentation status. Lastly, there was a large effect size (η^2 = 0.474) of time on PSTD scores for women who sought shelter, with significantly lower mean scores at 4 months compared to entry, regardless of the amount of days spent at the shelter or documentation status.

Maternal resiliency. There was also a large effect (η^2 = 0.215) of time on Safety

TABLE 2. Means (M) and standard deviations (SD) of maternal mental functioning, resiliency, and abuse for shelter women (n = 56) by time (baseline to 4 months later), Houston, Texas, United States, October 2010–October 2013

	Baseline (entry to study) (No. = 56)		4 months later (No. = 54)		
	M	SD	M	SD	Main effect of time
Mental functioning					
BSI[a] global	27.23	16.12	13.98	15.38	F (1, 50) = 48.31 P < 0.001, η^2 =0.491
BSI anxiety	9.89	6.62	5.28	6.17	F (1, 50) = 30.30 P < 0.001, η^2 = 0.377
BSI depression	10.52	5.77	5.09	5.60	F (1, 50) = 35.45 P < 0.001, η^2 = 0.415
BSI somatization	6.82	6.47	3.61	5.07	F (1, 50) = 26.54 P < 0.001, η^2 = 0.347
Post-traumatic stress disorder symptomatology	5.36	1.86	3.26	2.17	F (1, 50) = 45.01 P < 0.001, η^2 = 0.474
Resiliency safety behaviors	2.94	1.81	3.98	1.64	F (1, 50) = 13.73 P = 0.001, η^2 = 0.215
General self-efficacy	29.64	6.92	33.43	5.68	F (1, 50) = 12.44 P = 0.001, η^2 = 0.199
Global social support	52.16	23.14	60.76	17.90	F (1, 42) = 3.23 P = 0.079, η^2 = 0.071
Marginalization	14.79	5.53	14.02	5.21	F (1, 50) = 0.82 P = 0.370, η^2 = 0.016
Abuse danger assessment	14.32	6.82	5.29	4.18	F (1, 50) = 85.74 P < 0.001, η^2 = 0.622
Threats score	41.39	12.65	23.26	7.27	F (1, 50) = 81.09 P < 0.001, η^2 = 0.619
Sexual abuse score	8.82	3.53	6.41	1.51	F (1, 50) = 48.28 P < 0.001, η^2 = 0.491
Physical abuse score	36.48	12.76	22.37	4.25	F (1, 50) = 48.39 P < 0.001, η^2 = 0.491

[a] Brief Symptom Inventory.

Behaviors for women who sought services through a safe shelter as reported in Table 2. Women engaged in a higher number of behaviors to protect their personal safety 4-months following a shelter intervention—than they did prior to staying at the safe shelter—regardless of days at shelter and documentation status. Although not as large, there was also a large effect (η^2 = 0.199) of time on self-efficacy scores for women who sought shelter, regardless of days at shelter and documentation status.

Maternal abuse. There was a very large effect size (η^2 = 0.622) on Danger for Murder scores for women who sought services through a safe shelter (Table 2), meaning women were in much less danger to be murdered by their intimate partner following a stay at a safe shelter, regardless of days at shelter or documentation status. With regard to severity of abuse, very large effect sizes were measured at 4-months for Threats (η^2 = 0.619), Sexual Abuse (η^2=0.491), and Physical Abuse (η^2=0.491), regardless of number of days at shelter and whether or not women had legal documentation for the United States.

Outcomes of justice services on mothers

Four months after the use of justice services the following effects and outcomes were observed among the mothers.

Maternal mental functioning. There was an extremely large effect size (η^2 = 0.522) of time on BSI Global Scores for women who applied for a protection order as reported in Table 3, regardless of whether or not a protection order was received and documentation status. Likewise, there was a very large effect size of time on the Anxiety subscale scores (η^2 = 0.502), the Depression subscale scores (η^2 = 0.406), and Somatization subscale scores (η^2 = 0.303), regardless of whether or not a protection order was received and irrespective of documentation status. Lastly, there was a large effect size (η^2 = 0.428) for time on PTSD scores for women who sought protection orders, regardless of whether or not a protection order was received and irrespective of documentation status. Mean PTSD scores moved from a clinical score (4 or greater) to less than 4.

Maternal resiliency. There was a very large effect size (η^2 = 0.522) of time on Self-Efficacy for women who sought protection orders as reported in Table 3. At the 4-month follow-up, women seeking protection orders had significantly higher Self-Efficacy compared to baseline, regardless of whether or not a protection order was received and irrespective of documentation status. There was also a significant three-way interaction of time by protection order status by Documentation Status, F (1, 46) = 7.01, P = .011, η^2 = 0.132. Further univariate analysis revealed that for immigrant women who did not receive a protection order and did not have documents, there was a large effect size (η^2 = 0.573) of time on Self-Efficacy scores. At the 4-month follow up, women who did not receive a protection order and did not have documents had significantly higher Self-Efficacy scores (Mean [M] = 31.20, SD = 3.79), compared to when they first applied for a protection order (M = 26.40, SD = 4.88). There was not a significant effect of time on Self-Efficacy for women who did not receive a protection order and had documents. There was also a very large effect size (η^2 = 0.601) of time for women who received a protection order and had documentation. Women who received a protection order and had documentation had significantly higher Self-Efficacy scores at 4 months (M = 35.80, SD = 4.52) compared to baseline (M = 29.27, SD = 5.81). Overall, women who received a protection order and had documents had the highest level of Self-Efficacy scores at 4 months.

Maternal abuse severity. There was a very large effect size (η^2 = 0.666) of time on Danger for Murder scores for women who applied for a protection order as reported in Table 3, indicating that after seeking support through justice services, women's risk of being murdered greatly declines, regardless of whether or not a protection order was received and irrespective of documentation status. With regard to severity of abuse, large effect sizes of time on Threat of Abuse (η^2 = 0.672) , Sexual Abuse, (η^2 = 0.553), and Physical Abuse, (η^2 = 0.245) as reported in Table 3, regardless of number of sheltered days and whether or not an order of protection was received and whether or there was legal documentation.

Outcomes of interventions on child functioning

Shelter intervention. There was a medium effect size (η^2 = 0.088) of time on

TABLE 3. Means (M) and standard deviations (SD) of maternal functioning for immigrant women using the justice services ($n = 50$) by time (baseline to 4 months later), Houston, Texas, United States, October 2010–October 2013

	Baseline (entry to study)			4 months later			
	No.	M	SD	No.	M	SD	Main effect of time
BSI[a] Global	50	25.84	14.55	50	11.64	12.67	$F(1, 46) = 50.18$, $P < 0.001$, $\eta^2 = 0.522$
BSI Anxiety	50	11.02	6.51	50	4.64	5.36	$F(1, 46) = 46.37$ $P < 0.001$, $\eta^2 = 0.502$
BSI Depression	50	9.32	6.01	50	4.80	4.71	$F(1, 46) = 31.50$ $P < 0.001$, $\eta^2 = 0.406$
BSI Somatization	50	5.50	5.03	50	2.20	3.73	$F(1, 46) = 20.00$ $P < 0.001$, $\eta^2 = 0.303$
PTSD Symptomatology	50	5.58	1.37	50	3.64	2.19	$F(1, 46) = 34.43$ $P < 0.001$, $\eta^2 = 0.428$
Safety behaviors	50	3.29	1.73	50	3.84	1.62	$F(1, 46) = 2.61$ $P = 0.113$, $\eta^2 = 0.054$
General self-efficacy	50	29.24	6.43	50	32.60	6.29	$F(1, 46) = 12.02$ $P = 0.001$, $\eta^2 = 0.522$
Global social support	48	70.19	10.82	48	67.13	17.48	$F(1, 43) = 2.22$ $P = 0.144$, $\eta^2 = 0.049$
Marginalization	50	14.04	5.18	50	14.40	6.36	$F(1, 46) = 0.18$ $P = 0.672$, $\eta^2 = 0.004$
Danger assessment	50	15.18	7.53	50	4.96	4.18	$F(1, 46) = 91.85$ $P < .001$, $\eta^2 = 0.666$
Threats score	50	40.40	12.88	50	22.20	6.91	$F(1, 46) = 94.42$ $P < 0.001$, $\eta^2 = 0.672$
Sexual abuse score	50	8.48	4.11	50	6.06	0.42	$F(1, 46) = 56.96$ $P < 0.001$, $\eta^2 = 0.553$
Physical abuse score	50	35.42	12.89	50	21.24	1.10	$F(1, 46) = 14.92$ $P < 0.001$, $\eta^2 = 0.245$

[a] Brief Symptom Inventory.

TABLE 4. Means (M) and standard deviations (SD) of child functioning for internalizing, externalizing, and total behavior problems for children of sheltered ($n = 56$) and protection order ($n = 50$) women at baseline and 4 months later, Houston, Texas, United States, October 2010–October 2013

	Baseline (entry to study)			4 months later			
	No.	M	SD	No.	M	SD	Main effect of time
Shelter group							
Internalizing	56	14.18	10.19	54	12.44	10.13	$F(1, 50) = 1.26$ $P = .267$, $\eta^2 = 0.025$
Externalizing	56	14.11	10.21	54	11.78	9.74	$F(1, 50) = 4.81$ $P = 0.033$, $\eta^2 = 0.088$
Total problems	56	46.84	27.93	54	40.20	26.99	$F(1, 50) = 4.02$ $P = 0.050$, $\eta^2 = 0.074$
Protection order group							
Internalizing	50	11.18	9.15	50	7.98	7.16	$F(1, 46) = 8.56$ $P = 0.005$, $\eta^2 = 0.157$
Externalizing	50	10.52	8.88	50	9.18	9.66	$F(1,46) = 1.47$ $P = 232$, η^2 031
Total problems	50	36.06	25.07	50	28.62	26.11	$F(1,46) = 4.68$ $P = .036$, η^2 092

Child Behavior Checklist (CBCL) Externalizing scores for children whose mothers sought support through a safe shelter (Table 4). At 4 months, children's externalizing scores, behaviors of anger and attention deficit, significantly decreased compared to baseline, irrespective of days at shelter or receipt or no receipt of a protection order. The main effect of time on Total Problem scores for children whose mother sought shelter approached statistical significance, $F(1, 50) = 4.02$, $P = .050$ and measured a medium effect size of $\eta^2 = 0.074$, meaning at 4 months, children's Total Problem scores were lower compared to baseline. There was not a significant main effect of time on Internalizing scores.

Justice services intervention. For children whose mothers applied for a protection order, there was a large effect size ($\eta^2 = 0.157$) of time on CBCL Internalizing scores, such as depression and anxiety, which dropped significantly at 4 months compared to baseline, as reported in Table 4. The dramatic decrease in Internalizing scores was irrespective of whether or not a protection order was received or of documentation status. Additionally, there was a medium effect size ($\eta^2 = 0.092$) of time on CBCL Total Problem scores for children in the protection order group, with scores dropping significantly at 4 months compared to baseline, regardless of whether or not a protection order was received or of documentation status.

DISCUSSION

Outcomes of mental health, resiliency, abuse severity, and risk of murder dramatically improved 4 months after receiving assistance, irrespective of documentation status in host country or length of shelter stay or receipt of a protection order. Safety behaviors practiced and self-efficacy of the women increased as well. The health of the children also improved, irrespective of length of shelter stay or receipt of a protection order. Similar to the findings of Durand and colleagues (8), improvement in maternal mental functioning and resiliency resulted in improvements in child behavior and functioning. Perhaps the act of disclosing the violence and taking action provided relief of stress from the abusive situation allowing the woman to move forward. Consistent with the work of Logan (37), improved outcomes occur regardless of the number of days spent in the shelter or if a protection order was received.

Social support and marginalization of the immigrant women did not improve 4 months after receiving services. Agency actions to secure safety and connect the women with resources seemingly appears to have an immediate impact on safety behaviors, risk for murder, and abuse measures, as well as mental health measures, but the same improvement was not noted in the measures of social support or marginalization. It is possible that these measures are slower to improve or may require specially-targeted socialization interventions. There is a lack of social support and a greater degree of marginalization experienced by immigrant women living in poverty with

or without abuse (38). Immigrant women without legal documents to reside in the United States are at even higher risk for marginalization (39). Even healthy immigrants to a new country who are not in poverty or abusive situations experience some degree of social isolation, marginalization, and health deterioration (40). Simply removing the woman from an abusive situation does not alter her immigration status, economic situation, or related social deficits.

Major improvements in child functioning were measured at 4 months. Since children who witness partner violence are at increased risk for developing traumatic stress symptoms and PTSD that are expressed by developmentally-determined internalizing and externalizing behaviors (41), the mother's improved mental health likely resulted in more positive parenting practices, which in turn improved child functioning. These positive child findings are similar to those of Samuelson and colleagues (42) which suggest that the mother's emotion regulation predicted the child's behavior and cognitive flexibility.

In this study, immigrant women with and without legal documentation in the host country reported major improvements in mental health, levels of resiliency, and abuse just 4 months after accessing safe shelter or justice services. The large effect size improvements were reported irrespective of documentation status in the host country, and regardless of length of stay at the shelter and with or without a protection order. Additionally, the functioning of the children of these women improved substantially. Increasing access to safe shelter and justice services has the potential to substantially improve the safety, functioning, and wellbeing of abused women, with and without legal documentation, and to positively impact the functioning of their children.

Study limitations

The study had some limitations. First, it was limited to English or Spanish speakers. Secondly, women may have underreported or minimized victimization or functioning status. As expected, recall bias was operant in all responses. Despite these limitations, the researchers feel this study provides the most detailed and comprehensive data available on abused immigrant mothers who use justice and safe shelter services.

Conclusions

Abuse of women is a global epidemic with lasting health and functioning implications. When children are exposed to the violence, their functioning may be impacted also. Contact with service providers, offering safe shelter and justice services can dramatically improve the safety and wellbeing of abused immigrant women with children, regardless of documentation status in the host country, or duration of shelter stay or receipt of a protection order. Global policy for improved accessible, acceptable, and affordable front line services of safe shelter and justice responses are essential to interrupt abuse of women and promote the safety of mothers and children.

Conflicts of Interest. None

REFERENCES

1. Garcia-Moreno C, Jansen HA, Ellsberg M, Heise L, Watts CH. Prevalence of intimate partner violence: Findings from the WHO multi-country study on women's health and domestic violence. Lancet. 2006; 368(9543):1260–9.
2. United Nations. Trends and statistics: the world's women 2010. Available from: http://unstats.un.org/unsd/demographic/products/Worldswomen/WW_full%20report_BW.pdf Accessed on 3 January 2014.
3. World Health Organization. Global and regional estimates of violence against women: Prevalence and health effects of intimate partner violence and non-partner sexual violence; 2013. Available from: http://www.who.int/reproductivehealth/publications/violence/9789241564625/en/index.html Accessed on 3 January 2014.
4. Cohen JA, Mannarino AP, Iyengar S. Community treatment of posttraumatic stress disorder for children exposed to intimate partner violence. Arch Pediatr Adolesc Med. 2011;165(1):16–21.
5. Spiller LC, Jouriles EN, McDonald R, Skopp N. Abused women's experiences of sexual aggression and their children's disruptive behavior problems. Psychol Violence. 2012; 2(4):401–10.
6. Breiding MJ, Ziembroski JS. The relationship between intimate partner violence and children's asthma in 10 US states/territories. Pediatr Allergy Immunol. 2011;22(1 Pt 2):e95–100.
7. Edleson JL. Children's witnessing of adult domestic violence. J Interpers Violence, 1999;14:839–70.
8. Durand JG, Schraiber LB, Franca-Junior I, Barros C. Impact of exposure to intimate partner violence on children's behavior. Rev Saude Publica. 2011;45(2):1–9.
9. Fergusson DM, Horwood LJ. Exposure to interparental violence in childhood and psychosocial adjustment in young adulthood. Child Abuse Negl. 1998;22(5):339–57.
10. Karin S, Vantar B, Bjorkly S. An interactional perspective on the relationship of immigration to intimate partner violence in a representative sample of help-seeking women. J Interpersonal Violence. 2010;25(10):1815–35.
11. Pearce S. Immigrant women in the United States: A demographic portrait. Immigration Policy Center. 2006. Available from: http://www.immigrationpolicy.org/images/File/specialreport/Immigrant%20Women%20(IPC%202006).pdf Accessed on 22 January 2014.
12. Erez E, Adelman M, Gregory C. Intersection of immigration and domestic violence. Voices of battered immigrant women. Fem Criminol. 2009;4(1):32–56.
13. Menjivar C, Salcido O. Immigrant women and domestic violence. Common experiences in different countries. Gend Soc. 2002;16:898–920.
14. Adams ME, Campbell J. Being undocumented & intimate partner violence (IPV): Multiple vulnerabilities through the lens of feminist intersectionality. Womens Health Urban Life. 2012;11(1):15–34.
15. Moynihan B, Gaboury TM, Onken KJ. Undocumented and unprotected immigrant women and children in harm's way. J Forensic Nursing. 2008;4(3):123–9.
16. Vives-Cases C, Gil-Gonzalez D, Ruiz-Perez I, Escriba-Aguir V, Plazaola-Castaño J, Montero-Piñar M, et al. Identifying sociodemographic differences in intimate partner violence among immigrant and native women in Spain: A cross-sectional study. Prev Med. 2010;51(1):85–7.
17. Easteal P. Violence against women in the home. How far have we come? How far to go? Fam Matters. 1994;37:86–93.
18. Golman M. The violence against women act. Meeting its goals in protecting battered immigrant women. Fam Concil Courts Rev. 1999; 37:375–92.
19. Runner M, Yoshihama M, Novick S, Robert Wood Johnson Foundation. Intimate partner violence in immigrant and refugee communities: Challenges, promising practices and recommendations, 2009. Available from: http://www.futureswithoutviolence.org/userfiles/file/ImmigrantWomen/IPV_Report_March_2009.pdf Accessed on 27 April 2013.
20. McFarlane J, Nava A, Gilroy H, Paulson R, Maddoux J. Testing two global models to prevent violence against women and children: methods and baseline data analysis of a seven-year prospective study. Issues Ment Health Nurs. 2012;33(12):871–81.
21. Derogatis LR. Brief Symptom Inventory (BSI)-18. Administration, scoring and procedures manual. Minneapolis: NCS Pearson, Inc.; 2001.
22. Breslau J, Peter E, Kessler R, Schultz L. Short screening scale for DSM-IV posttraumatic stress. Am J Psychiatry. 1999;56(6):908–11.
23. McFarlane J, Parker B. Abuse during pregnancy. A protocol for prevention and inter-

vention. New York: National March of Dimes Birth Defects Foundation; 1994.
24. McFarlane J, Parker B, Morgan B. Abuse during pregnancy: a protocol for prevention & intervention. White Plains. NY: March of Dimes Nursing Monograph; 2007.
25. Schwarzer R, Jerusalem M. Generalized self-efficacy scale. In: Weinman J, Wright S, Johnston M, eds. Measures in health psychology: A user's portfolio. Causal and control beliefs. Windsor, UK: NFER-NELSON; 1995. Pp. 35–7.
26. Norbeck JS, Lindsey AM, Carrieri VL. The development of an instrument to measure social support. Nurs Res. 1981;30(5):264–69.
27. Norbeck JS, Lindsey AM, Carrieri VL. Further development of the Norbeck Social Support Questionnaire: Normative data and validity testing. Nurs Res. 1983;32(1):4–9.
28. Koci A. Marginality, abuse and adverse health outcomes in women. [PhD dissertation]. Atlanta: Emory University; 2004.
29. Campbell JC. Assessment of risk of homicide for battered women. Adv Nursing Sci. 1986;8:36–51.
30. Campbell JC. Assessing dangerousness: Violence by sexual offenders, batters, and child abusers. Thousand Oaks, CA: Sage; 1995.
31. Marshall L. Development of the severity of violence against women scales. J Fam Viol. 1992;7(2):103–21.
32. Coker AL, Smith PH, McKeown RE, King MJ. Frequency and correlates of intimate partner violence by type: physical, sexual, and psychological battering. Am J Public Health. 2000;90:553–9.
33. Gist J, McFarlane J, Malecha A, Willson P, Watson K, Fredland N., et al. Protection orders and assault charges: Do justice interventions reduce violence against women? Am J Fam Law. 2001;15:59–71.
34. Achenback TM, Rescorla LA. Manual of child behavior checklist/4–18 and 1991 profile. Burlington, VT: University of Vermont; 1991.
35. Achenback TM, Rescorla LA. Manual for the ASEBA preschool forms & profiles. Burlington, VT: University of Vermont; 2000.
36. Cohen J. Statistical power analysis for the behavioral sciences. 2nd ed. Hillsdale, NJ: Lawrence Erlbaum Associates; 1988.
37. Logan TK, Walker R, Hoyt W, Faragher T. The Kentucky civil protective order study: A rural and urban multiple prospective study of protective order violation consequences, responses, and cost, 2009. Available from: https://www.ncjrs.gov/pdffiles1/nij/grants/228350.pdf Accessed on 27 April 2013.
38. Koci AF, McFarlane J, Nava A, Gilroy H, Maddoux J. Informing practice regarding marginalization: the application of the Koci Marginality Index. Issues Ment Health Nurs. 2012;33:858–63.
39. Montalvo-Liendo N, Koci A, McFarlane J, Nava A, Gilroy H, Maddoux J. Violence against women who are U.S. born compared to non-U.S. born women with and without documentation: results from a seven-year prospective study. Hispanic Health Care Intl J. 2013. [In press]
40. Kim IH, Carrasco C, Muntaner C, McKenzie K, Noh S. Ethnicity and postmigration health trajectory in new immigrants to Canada. Am J Public Health. 2013;103(4):e96–104.
41. Graham-Bermann SA, Castor LE, Miller LE, Howell KH. The impact of intimate partner violence and additional traumatic events on trauma symptoms and PTSD in preschool-aged children. J Trauma Stress. 2012;25(4):393–400.
42. Samuelson KW, Krueger CE, Wilson C. Relationships between maternal emotion regulation, parenting, and children's executive functioning in families exposed to intimate partner violence. J Interpersonal Violence. 2012;27(17):3532–50.

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RESUMEN

Resultados en cuanto al desempeño de mujeres inmigrantes maltratadas y sus hijos, 4 meses después de iniciada una intervención

Objetivo. Determinar la repercusión de la intervención de albergue y las órdenes de protección sobre el desempeño en cuanto a la salud mental, la resiliencia y el maltrato adicional de mujeres inmigrantes, documentadas e indocumentadas, y sus hijos, en Houston, Texas, Estados Unidos.
Métodos. En un estudio prospectivo de cohortes iniciado en el 2011, se examinó una submuestra de 106 madres inmigrantes, procedentes principalmente de México y Centroamérica, y se evaluó su desempeño mediante una serie de 13 instrumentos bien establecidos cuando accedían a los servicios de albergue o de justicia; cuatro meses después, se llevó a cabo su seguimiento con objeto de medir el grado de mejora. Los datos fueron analizados mediante pruebas de análisis de la varianza, con una serie de mediciones repetidas, según un diseño factorial 2 x 2 x 2.
Resultados. Se observaron mejoras de gran magnitud de efecto sobre la salud mental, la resiliencia y la seguridad de las mujeres inmigrantes maltratadas, independientemente de si la intervención correspondía a un albergue seguro o a servicios de justicia, e independientemente del tiempo de permanencia en el albergue y de la expedición de una orden de protección. De manera análoga, se observaron mejoras de gran magnitud de efecto sobre el desempeño de los niños, independiente del tipo de intervención, el tiempo de permanencia en el albergue o la expedición de una orden de protección.
Conclusiones. El acceso a los servicios de protección puede mejorar la salud de las mujeres inmigrantes y sus hijos, independientemente de su situación en cuanto a documentación. Resulta esencial el establecimiento de una política mundial dirigida a mejorar el acceso y la aceptabilidad de los servicios de albergue y de justicia para promover la seguridad de las mujeres inmigrantes y potenciar al máximo su desempeño y el de sus hijos.

Palabras clave Violencia contra la mujer; violencia doméstica; emigrantes e inmigrantes; conducta infantil; Estados Unidos.