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Abstract

Purpose: The purpose of this study was to examine the relationships between acculturative stress, perceived stress, social support, and postpartum depression (PPD) symptoms among immigrant Arab American couples.

Methods: Using a cross-sectional design, 30 Arab American immigrant couples were enrolled. During home visits, couples completed the demographic information, the Multi-Dimensional Acculturative Stress Inventory, Perceived Stress, the Multidimensional Scale of Perceived Social Support among Arab Women, and the Edinburgh Postnatal Depression Scale. Data were analyzed using bivariate linear regression and Pearson correlation.

Results: In bivariate regressions, paternal and maternal acculturative stress was moderately associated with maternal PPD symptoms ($r = .39$, and .46, respectively; $p < .05$). Maternal perceived stress ($r = .70$, $P < .01$) was strongly associated with PPD and maternal perceived social support was moderately associated with PPD ($r = -.42$, $p < .05$). Maternal and paternal acculturative stress was strongly correlated ($r = .61$, $p < .001$).

Conclusion: Couple's acculturative stress and mother's perceived stress were positively associated with mother's PPD symptoms. Our findings suggest the need to develop a culturally appropriate procedure to assess couple's stress that may affect immigrant women at high risk for PPD.

Key words: Acculturative stress; Immigrant family; Married couples; Postpartum depression; Stress.

ACCULTURATIVE STRESS AND POSTPARTUM DEPRESSIVE SYMPTOMS AMONG IMMIGRANT ARAB AMERICAN COUPLES

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Approximately 3.5 million Arabs live in the United States (Arab American Institute Foundation [AAI], 2011). However, Arab Americans are largely absent from health research on family mental health and infant outcomes. This can be attributed to the classification of Arab Americans within the U.S. racial schema as "White," which makes them invisible as a minority group. The Arab American Institute (AAI) defines Arab Americans as those who have ancestry in any of the 22 Arab countries, spanning from North Africa to the Middle East (Al-Hazza & Lucking, 2005). Although culturally, racially, or ethnically Arab, Arab Americans may be of any religious background (Kakoti, 2012). California has the largest number of Arab Americans of any U.S. state, however Arab, Americans are more visible in Michigan, especially in Wayne County. Michigan's Arab American community constitutes the third largest minority group and the fastest growing population in the state of Michigan (AAI).

At the social and cultural level, Arab Americans consider parenthood as a desirable social attribute (Inhorn & Fakih, 2006). Couples of Arab descent are expected to have children early within marriage. Arab Americans have larger number of children in the household and younger age structures than the general U.S. population (Inhorn & Fakih). The major hallmark in Arabic culture is family cohesion and loyalty (Nassar-McMillan & Hakim-Larson, 2003). Marital satisfaction has a secondary importance in comparison to the priority given to raising children and expanding the family (Beitin & Aprahamian, 2014); therefore, parenting is a basic component in Arab American families and married couples assume responsibility raising their children. The uniqueness of this

population is families are based on marriage; thus, fathers are present in the household and are the gate keeper of the family (Aroian et al., 2006).

Arab families are rooted in collective, extended family support systems (Beitin & Aprahamian, 2014). When they immigrate, their primary support network becomes smaller, which increases their experiences of stress and lack of support (Beitin & Aprahamian). Immigrant families face multiple layers of migration-related stress, some families experience premigration exposure to highly traumatic and stressful experiences including threat or torture of self or loved ones, death of significant others, loss of belongings, lack of basic living needs, and shortage of resources compared with some families who migrated by their choice to seek better life (Javanbakht et al., 2019). When resettlement happens after years of struggling, immigrant families face new stressors of being identified as a minority, lack of social support, language barriers, cultural conflicts (Javanbakht et al.), and acculturative stress (Alhasanat-Khalil et al., 2018).

Transition to parenthood is an important stage of family life that might expose parents to stress and depression. Postpartum depression (PPD) is a major complication that may occur from 1 to 12 months after childbirth and has profound negative effects on both mothers and children (O'Hara & McCabe, 2013). Postpartum depression affects approximately 9.7% to 23.5% of mothers in the United States (Bauman et al., 2020). Immigrant mothers may be more vulnerable to PPD due to their exposure to stress related to migration and resettlement, and barriers related to accessing health and social services (Fung & Dennis, 2010). Immigrant women may have experienced premigration trauma as well as postmigration stress from language and cultural barriers, legal status concerns, unemployment, homelessness, lack of access to education, family separation, and experiences of discrimination (Falah-Hassani et al., 2015). A systematic review and meta-analysis of 24 studies found immigrant women were twice as likely to experience PPD symptoms as nonimmigrant women (Falah-Hassani et al.).

Various stressors in immigrant families are identified as risk factors for the development of PPD. Perceived stress was significantly related to PPD symptoms among immigrant and refugee women (Falah-Hassani et al., 2015). In addition to perceived stress, recently immigrated families experience a stress reaction in response to immigration, known as acculturative stress. Acculturative

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stress, defined as the stress associated with maintaining cultural values and traditions in the host country, is unique and prevalent among immigrant families (Berry, 1997). Immigrant women reported high levels of acculturative stress, which was positively related to depressive symptoms during pregnancy and postpartum in immigrant Mexican American women in California (D'Anna-Hernandez et al., 2015). Acculturative stress predicted PPD symptoms in a sample of 115 immigrant Arab American women living in Michigan who migrated to the United States within an average of 7 years (Alhasanat-Khalil et al., 2018). Alhasanat-Khalil et al. (2018) used the (Rodriguez et al., 2002) Multi-Dimensional Acculturative Stress Inventory (MASI), which was used in this study to measure acculturative stress among mothers and fathers. Social support is another important factor to consider in studying PPD symptoms. Lack of social support predicted PPD symptoms among immigrant women (immigrating from different countries of origin and to a range of counties such as the United States, Canada, and the United Kingdom) in a meta-synthesis of 13 publications (Tobin et al., 2018), and specifically among immigrant Arab American women (Alhasanat-Khalil et al.).

Two studies of postpartum immigrant Arab American mothers found 25% to 36% of mothers reported PPD symptoms (Alhasanat et al., 2017; Alhasanat-Khalil et al., 2018). The transition to parenthood is one of the most stressful life transitions, restructuring couples' roles and relationships that might increase stress experienced by both parents and place couples at risk for psychological problems (Figueiredo & Conde, 2011). In one study, stress was found to affect the couples' relationship and was related to depression in women during the transition to parenthood (Najman et al., 2014). Another study reported that fathers' depression after birth was associated with mothers' PPD (Paulson & Bazemore, 2010). Despite the prominent role of fathers in Arab American families, there are little data on the interplay between fathers' and mothers' psychological symptoms during the postnatal period in this population. Understanding the effect of fathers' stress on mothers' stress and PPD could inform the development of psychological interventions that are tailored to the specific needs of this community. Therefore, the purpose of this study was to examine the relationship between acculturative stress, perceived stress, social support, and PPD symptoms in a sample of immigrant Arab American couples.

Methods

Design and Sample

A quantitative, cross-sectional study was conducted. Families (mother–father dyads) were recruited from a community center that serves Arab American immigrants and refugees in Detroit metropolitan area. This was an exploratory study and sample size was not determined by a power analysis. Instead, it is of interest to know the minimal detectable effect size (MDES) for the correlation analysis. A power analysis for the MDES with couples was conducted with PASS 2021 software. A sample of 30 couples has power of .80 to detect a correlation coefficient of .48 or larger, assuming two-sided alpha = .05.

During their visit to the community center, the couples were contacted by the study staff who spoke both English and Arabic. Couples who were interested in study participation were scheduled for a home visit for data collection that took place between 2019 and 2020 (prior to the COVID-19 pandemic). Inclusion criteria for mother and father dyads were as follows: (a) 18 years of age or older; (b) had a live and healthy infant, whether preterm or full-term; (c) mothers were 6 to 24 months postpartum and not pregnant at the time of enrollment in the study; (d) self-identified as of Arab descent and came to the United States as an immigrant after the age of 14; and (e) spoke and read either Arabic or English. We used up to 24 months postpartum to expand our recruitment, however, the mean age of the infants in this sample was 12 ± 3 months.

Procedures

The study was approved by the Institutional Review Board (IRB) at the university and participating community center. Research assistants conducted initial screening to determine eligibility of couples, using a checklist, during the family visit at the community center. Eligible couples who were interested in participating were scheduled for a home visit during which both parents were asked to be present. During a single home visit, written informed consents were obtained from mothers and fathers. The couples completed questionnaires independently, which were in English or Arabic according to language preference. The duration of home visits was between 40 and 60 minutes. Couples were reimbursed with a $30 store gift card for their time.

Instruments

All study instruments were previously translated (not by our team) into Arabic language tested for validity and reliability among Arabic-speaking population (Aroian et al., 2010; Chaaya et al., 2010; Ghubash et al., 1997; Wrobel et al., 2009). A demographic form was developed to collect sociodemographic and obstetrical data from participants such as age, education level, family annual income, medical conditions, and medical and obstetrical history. The 25-item MASI (Rodriguez et al., 2002) was used to measure acculturative stress in the past 3 months. Total score range is 0 to180 with higher scores indicating higher levels of acculturative stress. In this study, the MASI had adequate internal consistency reliability (Cronbach's α = .78 and .86 for mothers and fathers, respectively). The 14-item Perceived Stress Scale (PSS; Cohen et al., 1983) was used to assess levels of perceived stress experienced over the previous month. Total score range is between 0 and 56 with higher scores representing higher levels of perceived stress (Cohen et al., 1994). In this study, the PSS had adequate internal consistency reliability (Cronbach's α = .86 and .84 for mothers and fathers, respectively). The Multidimensional Scale of Perceived Social Support among Arab women (MSPSS-AW; Aroian et al., 2010) is a 12-item instrument that measures adequacy of social support from three sources:

TABLE 1. SOCIODEMOGRAPHIC CHARACTERISTICS OF PARTICIPANT ARAB FAMILIES (*N* = 30 MOTHER–FATHER DYADS)

Characteristic	Couples	
	Mothers (*N* = 30)	Fathers (*N* = 30)
Age (years), mean (SD)	32.23 (6.24)	38.54 (8.66)
Education, *n* (%)		
Less than high school	17 (56.7)	19 (63.3)
High school graduate	10 (33.4)	7 (23.3)
College graduate	3 (9.9)	4 (13.4)
Employment, *n* (%)		
Full-time employment	1 (3.3)	17 (56.7)
Part-time employment	0	10 (33.3)
Unemployed	29 (96.7)	3 (10)
Family income, *n* (%)		
Less than $20,000	15 (50.0)	
$20,000–$60,000	15 (50.0)	
Immigration status (years), mean (SD)		
Age of arrival to United States	28.02 (6.58)	29.63 (10.47)
Time in United States	3.67 (3.81)	8.05 (11.14)
Country of origin, *n* (%)		
Syria	16 (53.3)	16 (53.3)
Yemen	9 (30.0)	9 (30.0)
Lebanon	2 (6.7)	2 (6.7)
Iraq	3 (10.0)	3 (10.0)
Characteristics of the last pregnancy		
Unplanned pregnancy, *n* (%)	15 (50.0)	N/A
Gestational age at birth (weeks), mean (SD)	38.50 (1.50)	N/A
Infant/child demographic information		
Age (months), mean (SD)	12.69 (3.16)	
Male, *n* (%)	15 (50.0)	

family, friends, and husband. The MSPSS-AW had adequate internal consistency reliability (Cronbach's α = .68) in our sample. Only mothers completed the MSPSS-AW because it applies only to women. The Edinburgh Postnatal Depression Scale (EPDS; Cox et al., 1987) is a 10-item questionnaire that screens for PPD symptoms in the past 7 days. Total score of the EPDS ranges from 0 to 30, with higher scores representing increased severity of symptoms. In this study, the EPDS had adequate internal consistency reliability (Cronbach's α = .85).

Statistical Analysis

We checked for bivariate outliers and nonlinearity using bivariate regression analysis of PPD and maternal and paternal acculturative stress measured by MASI, and perceived stress measured by PSS. Descriptive statistics including means, standard deviations, and frequency distributions were calculated. Pearson *r* correlation coefficients were used to examine the correlations of sociodemographic and medical variables with maternal and paternal acculturative stress and perceived stress, maternal social support, and maternal PPD symptoms.

Results

Thirty mother–father dyads participated. Demographic and selected health characteristics of the sample are presented in Table 1. Fathers were on average 6 years older than mothers. The majority of mothers (56.7%) and fathers (63.3%) had less than high school education. Most fathers (90%) were employed, whereas nearly all mothers (97%) were homemakers. All participants preferred the Arabic language study questionnaires. Household annual income in this sample did not exceed $60,000; half of the sample had less than $20,000. Fathers on average had spent significantly more time in the United States than mothers ($t_{(29)}$ = -2.58, p = .01).

Descriptive statistics, correlations, and reliabilities of all study scales are shown in Table 2. Sample means were near the theoretical midpoint for all scales except the MSPSS, which had a negative skewness. All scales had acceptable Cronbach's α reliability (range .68–.86). Forty percent of mothers met the diagnostic threshold for PPD (EPDS scores >10 in the Arabic version [Ghubash et al., 1997]). Mothers who reported high levels of acculturative stress (r = .46, p = .01) and perceived stress (r = .70, p < .001), and low levels of social support (r = -.42, p < .05) also reported high levels of PPD symptoms. Maternal acculturative stress scores were moderately negatively correlated with the educational achievement of both mothers (r = -.42, p = .008) and fathers (r = -.41, p = .025). Paternal acculturative stress had a significant moderate positive correlation with mothers' PPD symptoms (r = .39, p = .04). Paternal perceived stress was not significantly related to maternal PPD symptoms (r = .26, p = .17). Maternal and paternal acculturative stress scores were significantly correlated (r = .61, p < .001).

Discussion

In this study, we examined the relationship between maternal and paternal acculturative stress and perceived stress, maternal social support, and PPD symptoms among immigrant Arab American couples. Each of the stress and social support variables were significantly correlated with maternal PPD symptoms (P < .05) except for paternal perceived stress. Our work revealed that maternal higher levels of perceived stress and acculturative stress, and lower levels of social support were significantly correlated with higher levels of PPD symptoms. This is consistent with previous literature among immigrant mothers wherein, mother's acculturative stress and low levels of perceived social support were significant predictors of PPD symptoms among immigrant Arab American mothers (Alhasanat-Khalil et al., 2018), and immigrant Mexican American mothers (D'Anna-Hernandez et al., 2015). Other researchers have reported an association between higher levels of maternal perceived stress and lower levels of social support with higher rates of reporting PPD symptoms (Razurel et al., 2013).

We also examined the association of paternal acculturative stress and perceived stress with maternal PPD symptoms. Our results showed that higher levels of acculturative stress reported by fathers related to higher levels of PPD symptoms reported by mothers. One of the main roles of the father in the Arab American culture is to provide financial support and the sense of security in the family (Aroian et al., 2017). Those cultural expectations along with the growing responsibilities during immigration and postpartum period may increase the emphasis on the father's role as the financial provider and may create psychological distress contributing to the development of stress and depression among couples. Families in this study were experiencing acculturative stress, had language barriers, reported low annual household income, and had lower levels of education which can amplify their stress. Previous research has suggested a variety of contextual stressors such as economic pressure was linked to couple's depression (Helms et al., 2014). Immigrant families may have experienced premigration

TABLE 2. CORRELATIONS, RELIABILITIES, AND DESCRIPTIVE STATISTICS ON ASSESSMENTS OF ACCULTURATIVE STRESS (MASI), PERCEIVED STRESS (PSS), SOCIAL SUPPORT (MSPSS), AND POSTPARTUM DEPRESSION (PPD; N = 30 MOTHER-FATHER DYADS)

r (*P*-value)	MASI Mother	MASI Father	PSS Mother	PSS Father	MSPSS Mother	EPDS Father
1. MASI, mothers	1.00					
2. MASI, fathers	**.61** (<.001)**	1.00				
3. PSS, mothers	.24 (.20)	.15 (.44)	1.00			
4. PSS, fathers	.23 (.23)	.16 (.40)	.36 (.05)	1.00		
5. MSPSS, mothers	-.29 (.12)	-.08 (.68)	-.09 (.64)	.27 (.16)	1.00	
6. PPD, mothers	**.46* (.01)**	**.39* (.04)**	**.70** (<.001)**	.26 (.17)	**-.42* (<.02)**	1.00
Mean	20.95	22.03	21.55	22.97	29.43	7.73
SD	12.30	14.99	9.65	10.84	3.69	6.26
Range	0–52	2–55	4–42	5–44	21–36	0–19
Cronbach α	.78	.86	.86	.84	.68	.85

Notes. MASI: Multi-Dimensional Acculturative Stress Inventory; PSS: Perceived Stress Scale; MSPSS: Multidimensional Scale of Perceived Social Support; PPD: Edinburgh Postnatal Depression Scale.

*p < .05. **p < .01.

Immigrant and refugee couples are often exposed to high levels of stress.

stress and trauma, in addition to the postmigration experience of acculturative stress, language and cultural barriers, unemployment, social isolation, lower education, family separation, and experiences of discrimination (Clare & Yeh, 2012). Therefore, further research with larger sample is needed to evaluate the possible indirect effect of paternal stress on maternal stress and depressive symptoms in immigrant population.

Our sample characteristics are consistent with other studies conducted among immigrant and refugee populations (Alhasanat-Khalil et al., 2018; Dennis et al., 2018; Inhorn, 2018; Roby et al., 2021). The majority of mothers and fathers in this sample had less than a high school education, most of the fathers were employed but not most of the mothers, and half of the families reported a low annual income. Forty percent of mothers met the diagnostic threshold for PPD (i.e., EPDS scores > 10). This is consistent with previous studies published over the past decade in which immigrant and refugee women have been identified as being at high risk for experiencing PPD (Alhasanat & Fry-McComish, 2015; Alhasanat-Khalil et al.; Dennis et al., 2017; Falah-Hassani et al., 2015; O'Mahony et al., 2012, 2013). Immigrant mothers are more vulnerable to PPD due to their exposure to stress, such as stress related to migration and resettlement, and barriers related to accessing health and social services (Fung & Dennis, 2010). Those factors may intensify risk of immigrant women who are at almost one-and-a-half to two-fold higher risk of experiencing PPD symptoms than nonimmigrant women (Falah-Hassani et al.).

This study had some limitations; the sample size was small and use of convenience sampling possibly limited the power to detect significant or indirect relationships. Inclusion of immigrant Arab American families studied late in the postpartum period may limit the generalizability of results. Mothers who were not immigrants or who were from other regions may have different experiences. Future studies should control for other stressors such as intimate partner violence, childhood maltreatment, and other potential traumatic events that might act as confounders. More research focusing on fathers is needed because their stress exposure and response might differ from mothers' stress and experiences. Additional examination of parent–child relationship and infant's cognitive assessment are highly encouraged for future research to explore the potential long-lasting impacts of fathers' and mothers' stress on children's stress experience and development. Despite the limitations, our study focused exclusively on immigrant mother–father dyads with approximately similar exposure to psychosocial stressors. Our results provide support for interventions and guidance from nurses and health care providers that encourage the participation of fathers in early stress assessment and early stress reduction interventions.

CLINICAL NURSING IMPLICATIONS

- Assist couples with symptom management to alleviate migration-related stress and explore possible resources to provide them with support from the community.
- Develop consistent systematic procedures to identify immigrant couples, examine language, and cultural barriers to health.
- Refer immigrant women and their spouses to community partners to provide them with early interventions during the perinatal period.
- Identify maternal and paternal stressors that may provide insights to understand the effects of stress transmission between couples and its impact on the mothers' PPD.
- Comprehensive assessment of stressors will guide development of culturally appropriate interventions to improve mental health among immigrant couples and prevent the negative impact on their children.

Nursing Implications

Our findings highlight key areas of practice for nurses, midwives, and health care providers, such as involving the couples in counseling sessions to help with symptom management related to migration-related perceived stress and exploring possible support from the community. Previous research reported that stress transmission affects spouses' depressive symptoms and psychological outcomes. Therefore, there is a need to develop a consistent procedure to identify immigrant couples, examine language and cultural barriers to health, and refer them to community partners to alleviate their stressors and provide them with early interventions during the perinatal period. In this study, maternal higher levels of acculturative stress and perceived stress, and lower levels of social support were related to higher levels of PPD symptoms. Maternal higher levels of acculturative stress were correlated with paternal higher levels of acculturative stress which in turn were correlated with maternal higher levels of PPD symptoms. These results suggest that nurses and midwives should identify maternal as well as paternal stressors that may provide insights to understand the effects of stress transmission between couples and its effect on mothers' PPD. Assessment of these stressors will guide the development of culturally appropriate interventions to improve mental health among immigrant couples and prevent the negative effect on their children. ✣

Acknowledgment

Funding has been received from Sigma Theta Tau-Lambda Chapter; American Nursing Foundation; International Association of Forensic Nurses of the American Nurses Foundation; the College of Nursing funds. The authors also highly appreciate the collaboration of the Arab American community centers in Michigan.

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The authors declare no conflicts of interest.

DOI:10.1097/NMC.0000000000000804

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