Evidence of the paradoxical effect of social network support: A study among Filipino domestic workers in China

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ABSTRACT

Labor migrants are at an increased risk for poor mental health. Post-migration stressors contribute significantly to this risk. Social network supports are vitally important to protect health but little is known about the role of social network supports among labor migrants. The current study evaluated the role of migration stressors on poor mental health among Filipino female domestic workers (FDW) and whether family and friend social network support (SNS) modified this relationship. Data were collected from 261 FDWs in Macau, China from May to September 2013. Hierarchical multiple regression was conducted to test for direct and moderating effects of social networks on psychological distress. Post-migration stress was associated with increased anxiety, depression, somatization, and post-traumatic stress disorder symptoms. SNS from family was not associated with the four psychological symptoms nor did it modify the association between stress and these symptoms. SNS from friends was positively associated with these symptoms, and significantly moderated the relationship between stress and these symptoms. Counterintuitive to the known buffering effects of SNS, greater SNS was associated with greater psychological symptoms among FDWs exposed to post-migration stressors. The present findings suggest that reliance on SNS to cope with post-migration stressors may worsen psychological distress.

1. Introduction

Migration is a global phenomenon and international migrants have increased 41% – from 173 million to 244 million (UN, 2015) in the last 15 years. Economic labor migrants are estimated as the largest group, comprising 150 million or two out of every three international migrants (ILO, 2015). Labor migrants are often engaged in "3-D" jobs (dangerous, dirty, and degrading) that local residents are reluctant to do (Benach et al., 2010). They are at high risk for hazardous occupational exposures, injury, and even death (Ahonen et al., 2007).

In addition to occupational hazards, substantial evidence shows that migration stress is linked to poor physical and mental health (Bhugra and Gupta, 2010; Bhugra et al., 2014; Griffin and Soskolne, 2003; Lindert et al., 2009; Qiu et al., 2011; Wong and Leung, 2008; Wong and Song, 2008; Wong and Chang, 2010; Zimmerman et al., 2011). This is especially true among "low-skilled" workers (Benach et al., 2010) and among female migrant workers in particular (Anbesse et al., 2009; Wong and Song, 2008; Wong and He, 2011). Research is needed to contextualize resources that may reduce the mental health impact of these stressors. The current study sought to determine the role of social

network support in buffering the impact of post-migration stress on mental health symptoms (anxiety, depression, somatization and PTSD) among Filipino female domestic workers in Macau, China.

1.1. Filipino female domestic workers

The Philippines ranks among top labor-sending countries. The latest estimate reached up to 1,802,031 in 2013 (IOM, 2013). Along with Indonesia and Sri Lanka, the Philippines meets the demand for female domestic workers (FDWs) in Asian and Arab cities and countries (Bhugra and Gupta, 2010). In Macau, China, the Human Resource Office of Macau reported that in 2016, nearly half or 49.67% (11,887) of non-resident domestic workers are from the Philippines.

Domestic workers do their job mainly within the private homes of their employers making the regulation and implementation of good labor practices difficult. The 2013 report of ILO indicated that "very low wages, excessively long hours, the absence of a weekly rest day, risks of physical, mental and sexual abuse and restrictions on freedom of movement, are some of the problems that have frequently characterized the working conditions of domestic workers worldwide" (ILO,

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2013, p. 109). The major stressors experienced by Filipino domestic workers range from inadequate finances, poor working conditions, conflict with employers, family problems, and even threats to personal safety (van der Ham et al., 2015). Several studies on Filipino domestic workers and homecare workers showed that they experience work-related abuse and abusive working conditions within their home/work environment which detrimentally affects their mental health (Action for Health Initiatives (ACHIEVE) and Vrije Universiteit Medical Center Metamedica/Health Care and Culture (VUMC-MHCC), 2011; Ayalon, 2009, 2012; Garabiles et al., 2017; Hall et al., 2017). The unique, isolated, and invisible nature of their work presents a wide-range of challenges to their well-being and psychological health.

1.2. The stress buffering hypothesis

Stress is reduced or buffered by social support (Cohen and Wills, 1985). The stress-buffering model posits that social support can intervene by providing necessary social resources to prevent a stress appraisal response or by reducing or eliminating the impact of stress appraisal by providing a solution to the problem. Social network members may also act as sources of information regarding appropriate health behavior (Cohen et al., 2000; Cohen and Wills, 1985; Sluzki, 2010). Social support can help with coping with stress (Thoits, 2011) and can contribute to positive mental health (Kawachi and Berkman, 2001) and the lack thereof is associated with high incidence of PTSD among communities affected by violence (Hall et al., 2015). In a cyclic pattern, a longitudinal study showed that psychological distress such as depression, PTSD, and traumatic grief was associated with decreased social integration (Hall et al., 2014). A study on immigrants also showed evidence of the main effects of social network support on psychological distress, specifically anxiety and depression (Jasinskaja-Lahti et al., 2006). Social network support also buffered the effects of discrimination on immigrants' somatic, anxiety, and depression symptoms (Jasinskaja-Lahti et al., 2006).

Despite the breadth of knowledge on the importance of social support on mental health, the relationship between the two remains complex (Nurullah, 2012; Thoits, 2011). The mechanisms through which social support directly influences or buffers stressors to mental health depends on the type and the source of support (Thoits, 2011). Moreover, research evidence on the role of social networks on migrant women's mental health is limited. Therefore, studies are needed that attempt to tease apart the relationship between different sources of support and type of support provision on mental health for migrant workers.

This current study examined whether social network support, specifically the size, frequency of contact, and closeness to family and friends, was associated with fewer psychological symptoms and whether these sources of social network support can buffer the effects of post-migration stress among Filipino female domestic workers. Specifically, we hypothesized that:

1) Post-migration stress would be positively associated with increased symptoms of depression, anxiety, somatization, and PTSD;
2) Both social support from family and from friends will significantly moderate the relationship between post-migration stress and the four mental health outcomes, such that those with greater social network support would have less symptom severity across these outcomes

2. Method

2.1. Participants

The study was conducted in Macau, China from May to September 2013. Study inclusion criteria was being employed as a domestic worker in Macau. Domestic workers have a heavily constrained availability due to their unique working arrangements. They are only available during Sundays and selected public holidays. This emphasized how hard-to-reach and time-constrained the sample was. To effectively identify and reach our population, we used snowball technique as our sampling method. This technique is used in studies among vulnerable (Gee et al., 2006; van der Ham et al., 2014), hard-to-reach (Shaghaghi et al., 2011; Valerio et al., 2016), and other unique populations (Browne, 2005).

Starting from a pool of respondents (n = 12), we solicited referrals to collect responses from other domestic workers. In total, 300 questionnaires were distributed and 261 were returned (87% return rate). The remaining 39 were contacted for collection of the questionnaire packet but could not be reached. Each questionnaire packet contained an informed consent with the details of the study and the study questionnaire.

2.2. Self-report measures

All scales used in the present study were in Filipino. The existing Filipino versions of the PHQ-9 and GAD-7 were used (Pfizer, 2016). The PHQ-15, PMLD, PCL-C and the LSNS-R were translated and adapted to ensure sematic and conceptual equivalence following a standard translation and adaptation protocol (WHO, 2016).

2.2.1. Depression

The Patient Health Questionnaire (PHQ-9) assessed nine symptoms of depression occurring in the past two weeks (Kroenke et al., 2001). Respondents indicated the severity of their symptoms on a Likert-type scale ranging from 0 (not at all) to 3 (all the time). Total score ranged from 0 to 27 where a higher total score indicated greater depression symptom severity. It was used in previous study among Filipino home care workers in Israel (Ayalon, 2012) and it was reliable at Cronbach's alpha = 0.87. Reliability in the current study was also high (Cronbach's Alpha = 0.79).

2.2.2. Anxiety

The GAD-7 was used to measure anxiety (Spitzer et al., 2006). It consists of seven items, rated from 0 to 3, providing an anxiety symptom severity score from 0 to 21. Its reliability in the present study was 0.80 (Cronbach's alpha).

2.2.3. Somatization

The PHQ-15 Somatization Scale is used to assess somatic symptom severity and the potential presence of somatization and somatoform disorders (Kroenke et al., 2002). It consists of fifteen items, scored from 0 to 2, for a total score ranging from 0 to 30. Cronbach's alpha in the present study was good 0.85.

2.2.4. PTSD symptoms

The PTSD Checklist for DSM-5 or PCL-5 was used to assess PTSD symptoms (Blevins et al., 2012; Weathers et al., 2013). The PCL-5 is a 20-item self-report measure using the symptom criteria of PTSD from the DSM-5. Respondents rate each item from 0 (not at all) to 5 (extremely) to indicate the degree to which they have been bothered by that particular symptom over the past month. In the present study, the Cronbach's alpha was 0.94.

2.2.5. Post-migration stress

The Post Migration Living Difficulties Scale or PMLD (Silove et al., 1997, 1998) was used to assess current stressors and difficulties faced by the respondents in Macau with a response option in a 5-point Likert scale (1 = no problem at all to 5 = a very serious problem). Consistent with D. Silove, personal communication, October 22, 2012 recommendations, items should be adapted or added to assess particular stressors appropriate in the study population. We conducted formative interviews with female domestic workers to generate six additional

Table 1
Items from formative interviews on post-migration stressors for Domestic Workers.

English (Filipino/Tagalog)
1. Physical abyse by employer (*Pisikal na sinaktan ng amo*)
2. No medical/health support from employer (*Walang suportang medical mula sa amo*)
3. Sudden dismissal by employer (*Biglang tinanggal sa trabaho*)
4. No acknowledgement or increase in salary even with good performance (*Hindi pinupuri o tinataasan ang sahod kahit na maganda ang performance sa trabaho*)
5. Accused for stealing or other criminal offence by the employer (*Pinagbibintangan ng amo ng pagnanakaw o iba pang criminal na gawain*)
6. Working hours is more than what is stated in the contract (*Pinagtratrabaho ng higit pa sa napag-kasunduang oras sa kontrata*)

post-migration stress items, which were added to the original PMLD (see Table 1). Three items were omitted as they are not applicable to the present population. The questions are "Interviews by immigration", "Delays in processing your application" and "No permission to work". There was a total of 27 items for the PMLD scale in the present study.

2.2.6. Social network support

The Lubben Social Network Scale or LSNS-R (Lubben and Gironda, 2004) was used to measure the level of perceived social support received from family and friends. The LSNS-R was a modified version of the original LSNS to better specify and distinguish the nature of family and friendship social networks. It consists of 12 items measuring size, closeness and frequency of contact with a respondent's social network. Other items ask about the number and frequency of contact with family members and friends. Other items ask about helping others, having confidants, being a confidant and current living arrangements. For this study, Cronbach's alpha was 0.73 for Family and 0.83 for Friends.

2.3. Data analysis

Eighty-seven respondents (33.33%) have completed cases. The modal number of item-level missing data was one (n = 78). Missing data was imputed using multiple imputation with chained equations (UCLA Statistical Consulting Group, 2016c). Twenty multiply imputed data sets were created. Total scores were generated for all scales using item-level imputed data. Pairwise correlation analyses were conducted on all study variables to examine interrelationships. Multiple regression models were tested for significant effects of social network support on severity of mental health symptoms. Age, educational level, marital status, and monthly income were included in the models as covariates. The main effect and moderating effect of the two types of social network support (from family and from friends) were tested separately with three regression models, one for each type of social support for each of the mental health outcomes (depression, anxiety, somatization, and PTSD symptoms).

For each analysis, all covariates were entered in Model 1. Social network support and post-migration stress were added in Model 2. Model 3 included the interaction term of social network support and post-migration stress. We used the mibeta command with the fisherz option in Stata 14 for the regression analyses to report standardized coefficients and R-squared measures for multiply-imputed data (UCLA Statistical Consulting Group, 2016a). The robust regression option was used to account for non-normality and heteroscedasticity of the data. The mimrgns command was used to illustrate the interaction effects (Klein, 2015; UCLA Statistical Consulting Group, 2016b).

3. Results

3.1. Sample characteristics

Of the 261 respondents, 37.55% were between 35 and 44 years old. Almost two-thirds of the respondents graduated from high school. Half

Table 2
Participant characteristics.

	n	%
Age		
18–24	30	11.49
25–34	78	29.89
35–44	98	37.55
45–54	47	18.01
55–64	8	3.07
Education		
Some high school and below	32	12.26
High school graduate/vocational training	171	65.52
Associate degree and higher	58	22.22
Marital Status		
Single, never married	86	32.95
Married, or living together (cohabiting)	131	50.19
Widow	10	3.83
Separated/divorced	34	13.03
Monthly Income		
Lower than 250 USD	2	0.77
250–374USD	71	27.20
375–500USD	99	37.93
500–625USD	53	20.31
Higher than 625USD	36	13.79

the sample was married or partnered (50.19%). Nearly 40% earned monthly salaries equivalent to 375–500USD. See Table 2 for complete sample characteristics.

3.2. Correlational analysis

Table 3 shows the association among study variables. Post-migration stress, was significantly and positively correlated with symptom severity across all four dimensions of mental health: PTSD ($r = 0.30$, $p < 0.01$), anxiety ($r = 0.27$, $p < 0.01$), depression ($r = 0.31$, $p < 0.01$), and somatization ($r = 0.38$, $p < 0.01$). Post-migration stress was not significantly associated with social network support from family and friends. Social network support from family was not correlated with any of the mental health dimensions measured. Social network support from friends was significantly and positively associated with depression ($r = 0.26$, $p < 0.01$) and anxiety ($r = 0.15$, $p < 0.05$).

3.3. Main and moderating effects of social network from friends

Model 1 included age, education, income, and marital status (Table 4). None of these covariates were found to be significant predictors of depressive symptoms, but were retained in subsequent models due to their theoretical association between social network support and mental health. In Model 2, social network support from friends and post-migration stress were entered. Model 2 showed that post migration stress was associated with greater depressive symptom severity ($B = 0.09$, $p < 0.01$) and social network support from friends was positively associated with depressive symptom severity ($B = 0.08$, $p < 0.001$). Model 3 included the interaction term post-migration stress × social network support from friends. This interaction term was significant ($B = 0.01$, $p < 0.05$). The final model was significant [$F(16, 242) = 4.21$, $p < 0.001$] and accounted for 16% of the variance of depressive symptom severity.

We plotted slopes of post-migration stress and depressive symptom severity on different levels of social network support from friends: low (–1 SD from the mean), moderate (mean value) and high (+1 SD from the mean). Post-migration stress was associated with increased depressive symptom severity (see Fig. 1). The relationship was significantly higher among those with greater social network support from friends, particularly those with moderate ($z = 0.10$, $p < 0.001$) and high social network support ($z = 0.14$, $p < 0.001$), but not for those who have low social network support ($z = 0.05$, $p = 0.06$).

The pattern of results was similar for anxiety symptoms (see Table 5). Post-migration stress ($B = 0.07$, $p < 0.001$) and social

Table 3
Relationship between variables.

Variable name (Measure)	M	SD	Pearson Correlations (r)						
			1	2	3	4	5	6	7
1. Depression symptoms (PHQ-9)	2.78	3.02	(0.79)						
2. Anxiety symptoms (GAD-7)	1.90	2.52	0.69**	(0.80)					
3. Somatization symptoms (PHQ-15)	7.57	4.70	0.56**	0.54**	(0.85)				
4. PTSD symptoms (PCL-5)	11.87	11.88	0.60**	0.52**	0.46**	(0.94)			
5. Social network support from Friends (LSNS)	17.76	5.56	0.15*	0.26**	0.08	0.13**	(0.83)		
6. Social network support from Family (LSNS)	17.32	5.58	0.04	0.07	−0.05	0.05	0.55**	(0.73)	
7. Post-migration Stress (PMLD)	40.66	9.65	0.29**	0.26**	0.38**	0.28**	−0.11	−0.04	(0.86)

Note: Scores shown in parentheses on diagonal are internal consistency reliabilities of the scales.

  * $p < 0.05$ level.
  ** $p < 0.01$ level.

network support from friends ($B = 0.12$, $p < 0.001$) were both associated with greater anxiety symptom severity. The interaction between post-migration stress × social network support from friends was significant ($B = 0.01$, $p < 0.05$), indicating that participants with greater post-migration stress reported higher anxiety symptoms if they were exposed to greater social network support from friends. The overall model was significant [$F(16, 242) = 2.27$, $p < 0.001$] and accounted for 20% of the variance in anxiety symptom severity. We plotted slopes to illustrate this effect in Fig. 2, as above. The slopes indicate that there were significant differences for those with moderate ($z = 0.07$, $p < 0.001$) and high social network support ($z = 0.12$, $p < 0.001$) in the association between post-migration stress and anxiety symptoms. The relationship was not significant for those with low social network support ($z = −0.03$, $p = 0.23$).

In the next set of models (see Table 6), post-migration stress was associated with somatization symptoms ($B = 0.17$, $p < 0.001$) but social network support from friends was not associated with somatization ($B = 0.09$, $p = 0.06$). The interaction term was significant ($B = 0.03$, $p < 0.01$), such that post-migration stress was associated with greater symptoms of somatization as social network support from friends

increased. The entire model accounted for 21% of the variance in somatization and was significant [$F(16, 242) = 4.48$, $p < 0.001$]. The relationship was significant on among those in the low ($z = 0.12$, $p < 0.01$), moderate ($z = 0.19$, $p < 0.001$) and high ($z = 0.26$, $p < 0.001$) social network support (see Fig. 3).

Similar to previous analyses, post-migration stress ($B = 0.31$, $p < 0.001$) and social network support from friends ($B = 0.32$, $p < 0.05$) were positively associated with PTSD symptom severity (Table 7). Although the overall model was significant [$F(16, 242) = 3.02$, $p < 0.001$] and accounted for 14% of the variance in PTSD symptoms, the interaction term post-migration stress × social network support from friends was not significant in predicting PTSD symptom severity ($B = 0.02$, $p = 0.13$).

3.4. Main and moderating effects of social network from family

The same steps were followed in testing the models for social network support from family as a moderating variable: all covariates were entered in Model 1, post-migration stress and social network support from family were added in Model 2, and the interaction term post-

Table 4
Regression results for post-migration stress and social network support from friends predicting depression.

	Model 1		Model 2		Model 3	
	B (rSE)	β	B (rSE)	β	B (rSE)	β
Age (Ref = 18–24)						
25–34	0.10 (0.62)	0.02	0.21 (0.58)	0.03	−0.03 (0.57)	−0.00
35–44	0.60 (0.64)	0.10	0.71 (0.58)	0.12	0.42 (0.58)	0.07
45–54	−0.40 (0.73)	−0.05	−0.08 (0.68)	−0.01	−0.29 (0.67)	−0.04
55–64	0.55 (1.22)	0.03	0.72 (1.04)	0.04	0.44 (1.02)	0.03
Education (Ref = Associate degree and higher)						
Some high school and below	0.43 (0.72)	0.05	0.54 (0.71)	0.06	0.53 (0.71)	0.06
High school/vocational school	0.15 (0.50)	0.02	0.23 (0.46)	0.04	0.21 (0.46)	0.03
Marital status (Ref = Married or cohabitating)						
Single	0.30 (0.48)	0.05	0.37 (0.46)	0.06	0.46 (0.48)	0.07
Widowed	0.64 (1.28)	0.04	0.11 (1.24)	0.001	0.19 (1.24)	0.01
Separated/Divorced	0.42 (0.68)	0.05	0.20 (0.61)	0.02	0.25 (0.61)	0.03
Monthly Income (Ref = Higher than 625USD)						
Lower than 250USD per month	−0.54 (1.06)	−0.02	0.07 (0.73)	0.002	−0.08 (0.73)	−0.00
250–374USD per month	−1.25 (0.70)	−0.18	−0.92 (0.67)	−0.14	−0.71 (0.66)	−0.10
375–500USD per month	−0.98 (0.69)	−0.16	−0.86 (0.66)	−0.14	−0.72 (0.64)	−0.12
500–625USD per month	−0.60 (0.77)	−0.08	0.59 (0.73)	−0.08	−0.38 (0.73)	−0.05
Post-migration stress (PMLD)			0.10*** (0.02)	0.31***	−0.06 (0.07)	−0.18
Social Network Support from Friends (SNSF)			0.09** (0.03)	0.17**	−0.26 (0.15)	−0.47
SNSF × PMLD					0.01* (0.003)	0.76*
R^2	0.04		0.14		0.16	
Adjusted R^2	–		0.09		0.10	
F-test for model	0.82		4.17***		4.21***	

Note. rSE = robust standard errors. SNSF = social network support from family. Post-migration living difficulties.

  * $p < 0.05$.
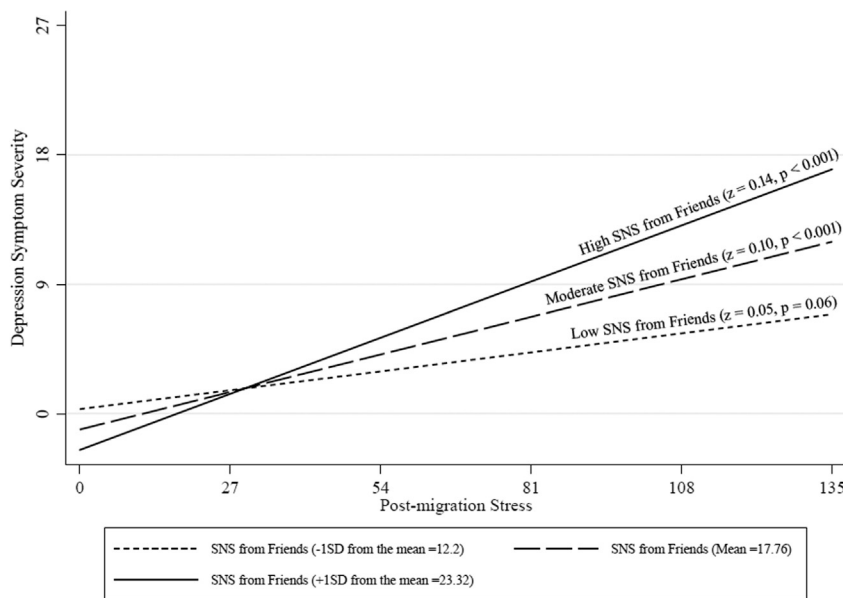 ** $p < 0.01$.
  *** $p < 0.001$.

Fig. 1. Depression symptom severity as a function of post-migration stress × social network support from friends.

migration stress × social network support from family was added in Model 3.

For depression symptom severity, neither the main effect or interaction effect ($B = 0.003$, $p = 0.36$) for social network support from family were significant. Similarly, for anxiety symptoms, social network from family and the interaction term post-migration stress × social network support from family were both not significant ($B = 0.001$, $p = 0.67$). Somatization symptom severity was also not associated with social network support and the interaction between post-migration stress × social network support from family was not significant ($B = -0.004$, $p = 0.33$). Finally, PTSD symptom severity was not associated social network support from family and the interaction between post-migration stress × social network support from family was not significant ($B = -0.01$, $p = 0.30$).

4. Discussion

Overseas Filipino Workers (OFWs) are among the largest population of labor migrants in the world. The present study is the first to explore the burden of common mental disorders and the potentially modifying role of social network support in a sample of Filipino Domestic Workers. The present study identified key social network support correlates of common mental disorders. Contrary to our hypotheses that social network support would buffer the effects of post-migration stress, the current study showed that increased social network support was associated with greater psychological distress.

Social network support from family had no main effects on the mental health dimensions and had no moderating effect on post-migration stress. People who have just moved into a new area will

Table 5
Regression results for post-migration stress and social network support from friends predicting anxiety.

	Model 1		Model 2		Model 3	
	B (rSE)	β	B (rSE)	β	B (rSE)	β
Age (Ref = 18–24)						
25–34	0.52 (0.46)	0.09	0.49 (0.44)	0.09	0.24 (0.44)	0.04
35–44	0.58 (0.46)	0.11	0.60 (0.45)	0.11	0.29 (0.46)	0.06
45–54	−0.09 (0.56)	−0.01	0.20 (0.55)	0.03	−0.02 (0.57)	−0.00
55–64	1.07 (1.05)	0.07	1.19 (0.86)	0.08	0.92 (0.83)	0.06
Education (Ref = Associate degree and higher)						
Some high school and below	−0.54 (0.49)	−0.07	−0.39 (0.47)	−0.05	0.39 (0.47)	−0.05
High school/vocational school	−0.18 (0.41)	−0.03	−0.11 (0.37)	−0.02	−0.12 (0.36)	−0.02
Marital status (Ref = Married or cohabitating)						
Single	−0.23 (0.34)	−0.04	−0.20 (0.32)	−0.03	−0.11 (0.33)	−0.02
Widowed	1.86 (1.53)	0.14	1.17 (1.44)	0.08	10.25 (1.43)	0.09
Separated/Divorced	0.09 (0.59)	0.01	−0.10 (0.53)	−0.01	−0.04 (0.54)	−0.01
Monthly Income (Ref = Higher than 625USD)						
Lower than 250USD per month	0.03 (1.10)	0.00	0.61 (0.65)	0.02	0.46 (0.65)	0.02
250–374USD per month	−0.85 (0.53)	−0.15	−0.58 (0.49)	−0.10	−0.36 (0.48)	−0.06
375–500USD per month	−0.25 (0.56)	−0.05	−0.18 (0.51)	−0.04	−0.04 (0.51)	−0.01
500–625USD per month	−0.46 (0.60)	−0.07	−0.48 (0.56)	−0.08	−0.27 (0.56)	−0.04
Post-migration stress (PMLD)			0.07*** (0.02)	0.28***	−0.08 (0.06)	−0.31
Social Network Support from Friends (SNSF)			0.12*** (0.03)	0.27***	−0.24 (0.13)	−0.52
SNSF × PMLD					0.01* (0.00)	0.95*
R^2	0.05		0.18		0.20	
Adjusted R^2	0.002		0.13		0.15	
F-test for model	0.83		2.73***		2.67***	

Note. ** $p < 0.01$. rSE = robust standard errors.
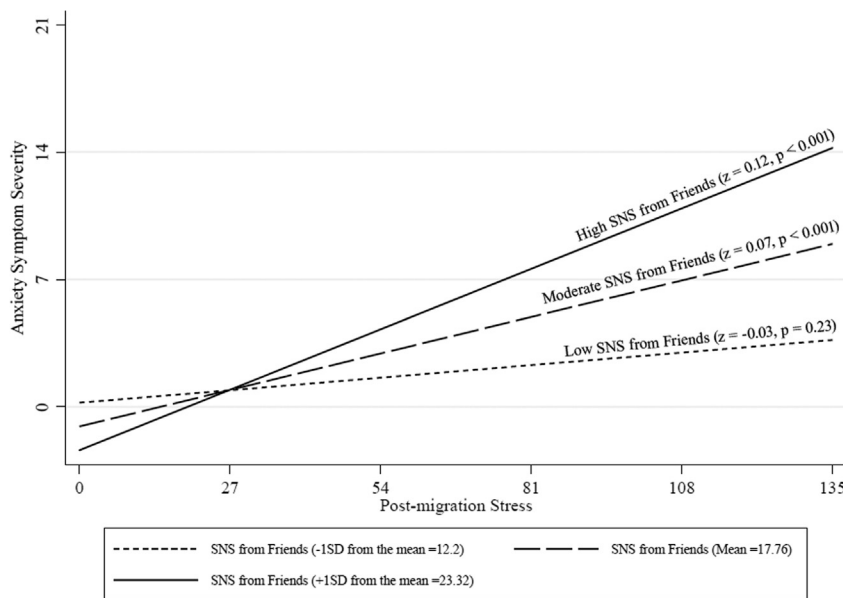 * $p < 0.05$.
  *** $p < 0.001$.

Fig. 2. Anxiety symptom severity as a function of post-migration stress × social network support from friends.

unavoidably have less dense and less varied social networks (Sluzki, 2010). In the context of domestic workers, they cannot afford to bring their family with them. The family of migrant workers remain in the Philippines hence limited family support can be obtained. The physical separation from family is emotionally difficult for Filipino migrants (Fresnoza-Flot, 2009) and family support is impeded when domestic workers tend to keep their stressors to themselves to protect their family from potential stress. Thoits (2011) noted that emotional support from primary group members or significant others is prevented when the distressed individual wishes to protect significant others by not informing them of their stressors. The responsibility to provide income for their family back home also increases the burden to domestic workers.

The effect of social network support from friends on all mental health dimensions was positive i.e. greater social support is associated with greater mental health symptoms. This is due to gender-related issues in relation to social support benefits. Kawachi and Berkman (2001) noted that social connections among women may increase mental illness symptoms. While support has ameliorated the effects of perceived stress for men, in contrast, for women, dimensions of social networks such as emotional support, tangible support, and the duration of social contact were associated with higher perceived stress as the number of negative life events increase (Falcón et al., 2009). This paradoxical effect of social ties was also observed among members of economically disadvantaged groups or high-poverty neighborhoods (Small, 2007) and women with low resource (Kawachi and Berkman,

Table 6

Regression results for post-migration stress and social network support from friends predicting somatization.

	Model 1		Model 2		Model 3	
	B (rSE)	β	B (rSE)	β	B (rSE)	β
Age (Ref = 18–24)						
25–34	0.25 (0.84)	0.02	0.69 (0.82)	0.07	0.32 (0.81)	0.03
35–44	0.81 (0.90)	0.08	1.20 (0.82)	0.12	0.76 (0.84)	0.08
45–54	0.24 (1.10)	0.02	0.80 (0.98)	0.07	0.48 (0.99)	0.04
55–64	0.22 (1.31)	0.01	0.56 (1.06)	0.02	0.15 (1.04)	0.01
Education (Ref = Associate degree and higher)						
Some high school and below	0.07 (1.02)	0.00	0.14 (0.96)	0.01	0.14 (0.96)	0.01
High school/vocational school	0.21 (0.71)	0.02	0.34 (0.63)	0.03	0.32 (0.62)	0.03
Marital status (Ref = Married or cohabitating)						
Single	−0.05 (0.65)	−0.01	0.13 (0.60)	0.01	0.26 (0.61)	0.03
Widowed	2.43 (2.24)	0.10	1.92 (2.23)	0.08	2.03 (2.28)	0.08
Separated/Divorced	−0.86 (0.99)	−0.06	−1.25 (0.83)	−0.09	−1.12 (0.83)	−0.08
Monthly Income (Ref = Higher than 625USD)						
Lower than 250USD per month	3.59 (2.15)	0.07	4.59[**] (1.39)	0.09	4.37[**] (1.38)	0.08
250–374USD per month	−1.89 (1.11)	−0.18	−1.28 (1.00)	−0.12	−0.95 (1.02)	−0.09
375–500USD per month	−0.64 (1.09)	−0.07	−0.38 (0.97)	−0.04	−0.17 (0.98)	−0.02
500–625USD per month	−0.28 (1.21)	−0.02	−0.20 (1.07)	−0.02	0.13 (1.11)	0.01
Post-migration stress (PMLD)			0.19[***] (0.03)	0.39[***]	−0.04 (0.09)	−0.08
Social Network Support from Friends (SNSF)			0.09 (0.05)	0.11	−0.43 (0.22)	−0.51
SNSF × PMLD					0.01[*] (0.01)	0.75[*]
R^2	0.05		0.20		0.21	
Adjusted R^2			0.15		0.16	
F-test for model	1.17		4.83[***]		4.48[***]	

Note. rSE = robust standard errors.
  * $p < 0.05$.
  ** $p < 0.01$.
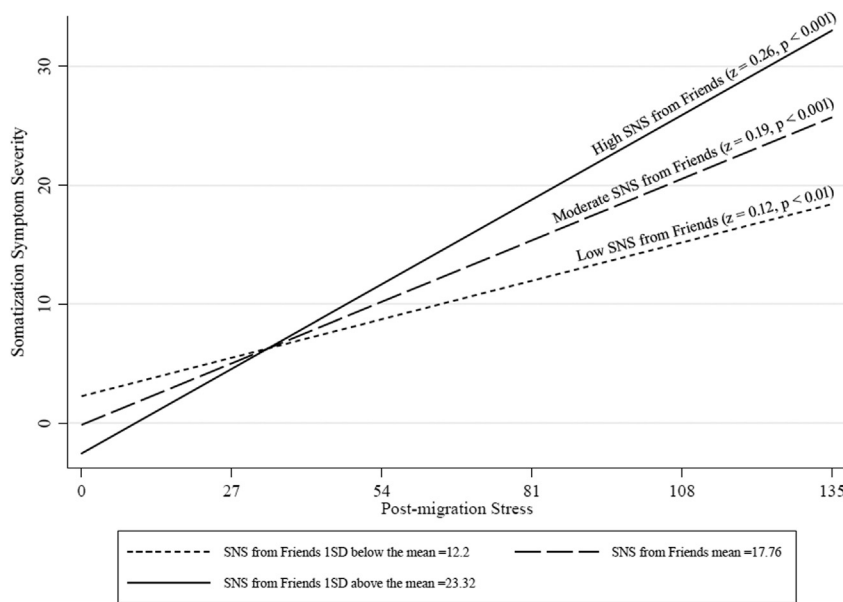 *** $p < 0.001$.

Fig. 3. Somatization symptom severity as a function of post-migration stress × social network support from friends.

2001). Stack (1975) found that under-resourced networks create additional burdens. In a sample of black urban families living in poverty, she noted that norms of reciprocity create demand for sharing limited resources, which exacerbated stress.

Increased social network support from friends did not buffer the effects of post-migration stress but instead increased depression, anxiety, and somatization symptom severity. Qualitative studies (Garabiles et al., 2017; Hall et al., 2017) showed that social networks of migrant domestic workers are complex. It is typical for social networks to share stories of tragedies and triumphs to each other about their members' lives (Thoits, 2011). When problems arise in their networks, women may align themselves with similar peers (Festinger, 1954) and this social involvement makes them vulnerable to vicariously experience the problems and stressful events of those to whom they feel

emotionally close. This can lead to increased burden or "contagion of stress" (Kawachi and Berkman, 2001). Their interactions with their peers can also result in emotional contagion (Kramer et al., 2014) which leads them to experience the same emotions that their peers in their network experience.

More so, the domestic workers' network can also be a source of gossips and rumors that circulate in their social networks leading to distrust and conflicts (Hall et al., 2017). Larger personal networks are less likely to be useful for health discussions compared to a smaller core network, which may facilitate discussing health problems due to higher cohesion, cooperation, and trust for each group member (Perry and Pescosolido, 2015). Although greater social network support was associated with greater distress, this network was comprised of close friends and family members. Research has shown that weak ties, or

Table 7
Regression results for post-migration stress and social network support from friends predicting PTSD symptom.

	Model 1		Model 2		Model 3	
	B (rSE)	β	B (rSE)	β	B (rSE)	β
Age (Ref = 18–24)						
25–34	−0.31 (2.51)	−0.01	0.19 (2.47)	0.01	−0.49 (2.53)	−0.02
35–44	1.44 (2.53)	0.06	1.96 (2.42)	0.08	1.13 (2.51)	0.05
45–54	−3.07 (2.75)	−0.10	−1.88 (2.68)	−0.06	−2.46 (2.72)	−0.08
55–64	0.14 (4.07)	0.00	0.77 (3.50)	0.01	0.02 (3.49)	0.00
Education (Ref = Associate degree and higher)						
Some high school and below	1.01 (2.97)	0.03	1.36 (2.85)	0.04	1.36 (2.88)	0.04
High school/vocational school	−1.89 (2.03)	−0.08	−1.60 (1.88)	−0.06	−1.65 (1.86)	−0.07
Marital status (Ref = Married or cohabitating)						
Single	−0.55 (1.94)	−0.02	−0.28 (1.85)	−0.01	−0.04 (1.84)	−0.00
Widowed	1.22 (4.88)	0.02	−0.60 (4.83)	−0.01	−0.38 (4.91)	−0.01
Separated/Divorced	−1.87 (2.30)	−0.05	−2.69 (2.07)	−0.08	−2.53 (2.07)	−0.07
Monthly Income (Ref = Higher than 625USD)						
Lower than 250USD per month	−7.92 (4.10)	−0.06	−5.70 (5.50)	−0.04	−6.10 (5.56)	−0.04
250–374USD per month	−4.09 (3.08)	−0.15	−2.87 (3.00)	−0.11	−2.27 (3.13)	−0.09
375–500USD per month	−1.74 (3.06)	−0.07	−1.30 (2.98)	−0.05	−0.91 (3.07)	−0.04
500–625USD per month	−2.73 (3.28)	−0.09	−2.67 (3.18)	−0.09	−2.10 (3.34)	−0.07
Post-migration stress (PMLD)			0.36*** (0.07)	0.30***	−0.06 (0.24)	−0.05
Social Network Support from Friends (SNSF)			0.32* (0.14)	0.15*	−0.65 (0.63)	−0.30
SNSF × PMLD					0.02 (0.01)	0.55
R^2	0.04		0.14		0.14	
Adjusted R^2			0.08		0.09	
F-test for model	0.92		3.30***		3.02***	

Note. ** $p < 0.01$. rSE = robust standard errors.
  * $p < 0.05$.
  *** $p < 0.001$.

people who are not close network members, provide additional benefits and access to a greater variety of resources over and above close network members (Granovetter, 1973).

From a cultural standpoint, it is theorized from multiple case studies in the Philippine local literature that specific family members, mostly females, may exhibit a tendency to 'catch' or carry the family's burdens in an overwhelming manner, also known as Carandang's theory of *tagasalo* (Arellano-Carandang, 1987; Udarbe, 2001). Filipino female migrant workers are known to have strong commitments and obligations to their families than their male counterparts – despite earning less money (Tacoli, 1996). They try to send more remittances back home to show support and care to their families which can, in outstanding circumstances, lead to heavy physical and emotional repercussions (Tacoli, 1996).

Although the current results contradict the stress buffering model, several previous studies support these findings. Falcón et al. (2009) found that social support was associated with higher levels of stress-related outcomes. When they delineated the moderating effects of gender, social support is distinctly not beneficial for women. As women's network are more likely to include other women and to include kin and neighborhood friends (Falcón et al., 2009), they may share the burdensome aspects of their networks. Migrant women also do not experience the protective effects of ethnic density (Arevalo et al., 2015).

Linking these points together, it appears that female migrant workers share their burdens to each other hence a form of 'shared' or 'collective' burden can also circulate their support networks that may not alleviate their distress. Hence, the increasing number of Filipino domestic workers in the region or the support they may provide does not necessarily guarantee a protective support network.

The findings of the present study also support the previous literature concerning the effects of post-migration to mental health. Post-migration stress was found to significantly predict depression, anxiety, somatization and PTSD symptoms. The process of migration may influence the mental health of migrant workers (Bhugra and Gupta, 2010; Zimmerman et al., 2011). Female domestic workers are at particular risk for poor mental health as they are placed in stressful situations where they can exert little control and face chronic separation from their families and social networks back home (Action for Health Initiatives (ACHIEVE) and Vrije Universiteit Medical Center Metamedica/Health Care and Culture (VUMC-MHCC), 2011). Despite these known challenges, female domestic workers from low-income countries who migrate for economic reasons remain to represent an understudied and extremely vulnerable population (Anbesse et al., 2009).

4.1. Limitations

Our study has several notable strengths. The majority of research among Filipino overseas workers are done upon their return in the Philippines (Action for Health Initiatives (ACHIEVE) and Vrije Universiteit Medical Center Metamedica/Health Care and Culture (VUMC-MHCC), 2011; van der Ham et al., 2014, 2015). This study is among the first studies on Filipino domestic workers conducted while they are in the host country where they are currently employed and exposed to current stressors. This is the first study to measure social support as a buffer of post-migration stress among domestic workers. We conducted formative work to adapt our migrant stress measure, which ensured the local relevance of the stressful events we measured. This is the first study that shows and supports the effect of post-migration stress on mental health using the post-migration living difficulties questionnaire among non-refugees. The findings suggest that it is a significant predictor of the burden of common mental disorders. More attention is needed on post-migration stressors experienced by labor migrants (Zimmerman et al., 2011).

We must also note several limitations. First, a convenience sample may not generalize to the entire target population of Filipina domestic

workers. We used snowball sampling to reach members of this community due to the inherent challenges in reaching this population. This may have led to sampling bias, which may have influenced the degree to which our sample was distressed and lead to higher network density among the sampled participants. Caution should be taken in generalizing the findings to the entire population of Filipina domestic workers. Future studies can use more rigorous sampling methodologies, for example, respondent-driven sampling, to efficiently increase the size and representativeness of the sample, possibly account for potential sampling bias, and to replicate the findings of the present study.

Second, the present study is cross sectional so causal relationships cannot be assumed. Future studies that are longitudinal are needed to investigate causal links between migration stress, social network support, and common mental disorders. Given the complexity in the relationship between social network support, stress and mental disorders described in this study, a more complete egocentric social network analysis should be considered in future studies.

More so, since the present study is conducted in a quantitative study design, we recommend that future research can use mixed-method designs that can shed clarity to specific type and source of support that migrant female domestic workers benefit from. Qualitative analyses of their experiences through focused-group discussion or key informant interviews can clarify and identify possible mechanisms to optimize the benefits of social support.

Finally, future research should measure additional factors related to the work and living experiences of migrants such as length of stay in host the country and reasons for migration (Wong and Song, 2008), working hours (Ayalon, 2012), working conditions, and relationship with employers (van der Ham et al., 2015), and other exposures like daily experiences of loneliness (van der Ham et al., 2015) and discrimination (Ayalon, 2012), which might confound the association between social network supports and mental health.

4.2. Conclusion

The present study adds to the limited literature examining the psychological correlates of migration stress on Filipina domestic workers and among OFWs in general. We found a paradoxical effect of social support, specifically that among migrant workers with greater exposure to stress, social network support from friends was harmful, not beneficial. Some caution should be taken when interpreting these findings. Since social network support was measured through self-reported size, contact frequency and closeness of support network, key dimensions of support such as informational, instrumental, appraisal and emotional social support were not measured. In this study, social network support did not identify specific family ties (e.g., husband, mother, son) as support providers.

Also, because the effectiveness of support networks for buffering stressors can also vary depending on the type of coping it elicits (Noh and Kaspar, 2003), it is also important to identify and assess whether domestic workers use problem-focused or emotion-focused coping in relation to the support provided by their peers. Other pertinent variables such as religious coping, a culturally relevant coping and support mechanism among Filipinos, can also be investigated in future research. Religious coping, despite known ambiguities, is known to alleviate emotional and work-related distress among Filipino migrant workers (Nakonz and Shik, 2009). Future research is needed to tease apart the nuanced associations between social network support and mental health among migrant populations.

The present study suggests that social network support may not necessarily generate positive outcomes for mental health. Network members could be trained to provide more beneficial support. Moreover, interventions to reduce stress by enhancing worker rights are also critical. As globalization continues to increase labor migration, increased attention is needed to understand how social and situational factors affect the mental health of migrant workers.

Ethical statement

This research was approved by the Research Committee formed by the Academic Council of the University of Saint Joseph. Each participant provided informed consent before their participation in the study.

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