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Social Constraints and PTSD among Chinese American breast cancer survivors: not all kinds of social support provide relief

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Abstract Research has demonstrated the association between social constraints and posttraumatic stress disorder (PTSD) symptoms among breast cancer survivors. Although perceived social support can buffer stress and improve emotional well-being, little is known about which type of social support is most effective in buffering the negative effects of social constraints among cancer survivors. We investigated the moderation of four types of social support (i.e., positive interaction, tangible support, emotional/informational support and affectionate support) on the association between social constraints and PTSD symptoms among Chinese American breast cancer survivors. One hundred and thirty-six Chinese American breast cancer survivors completed questionnaires that assessed social constraints, PTSD symptoms and perceived social support. Results of hierarchical regression analysis indicated that only support of positive interaction exerted a buffering effect, with social constraints associated with greater PTSD severity among survivors with low but not high levels of support of positive interaction. In contrast, high levels of tangible support potentiated the association between social constraints and PTSD symptoms. There were no moderating effects of emotional/informational support and affectionate support. These results demonstrated the roles of different types of social support in moderating the stress imposed by social constraints. Our findings highlight the importance of recognizing the potential cultural sensitivity of ethnic minorities in PTSD intervention and mental health services for cancer patients.

Keywords Breast cancer · Chinese American · PTSD · Social constraints · Social support

Introduction

Being diagnosed with and treated for breast cancer can be a traumatic life event. Posttraumatic stress disorder (PTSD) is a prevalent and significant condition among breast cancer survivors, and includes symptoms such as intrusive thoughts about cancer and emotional distress when exposed to cancer-related situations, increased avoidance in thinking about cancer, as well as emotional and physiological hyperarousal (for review, see Kangas et al. 2002). As breast cancer is the fastest-growing cancer type among Asian American women (Gomez et al. 2017; Torre et al. 2016), it is imperative to elucidate the potential risk factors for PTSD and the protective factors that can alleviate PTSD symptoms among Chinese American breast cancer survivors. The present study investigated the effects of social constraints on PTSD for Chinese American breast cancer survivors, and examined the moderating effects of different types of perceived social support.

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The association between social constraints and PTSD among Asian American breast cancer survivors

Because breast cancer is often disfiguring and unpredictable, it is common that survivors desire to talk about their thoughts and feelings about the cancer experience (Drageset et al. 2012; Figueiredo et al. 2004; Maunsell et al. 2009). However, due to cultural and language barriers, Asian American breast cancer survivors have relatively narrowed social networks and limited access to culturally sensitive mental health resources for emotional disclosure and stress coping (Lee et al. 2013; Wong-Kim et al. 2005). In addition, when Asian American breast cancer survivors attempt to disclose their concerns and worries to their families and friends, they rarely receive the positive responses they need (Warmoth et al. 2017). Indeed, research has indicated that breast cancer survivors experience social constraints in their networks (Badr et al 2013; Pistrang and Barker 2005), including perceiving themselves to be misunderstood, denied, or alienated by their social partners when they attempt emotional disclosure. Faced with this life threatening disease, healthy family members may not be psychologically ready to respond to cancer survivors' disclosures appropriately, even though they care about the survivor and want to help. As a result, they may convey socially constraining responses, such as minimizing survivors' problems, criticizing their fears, or avoiding discussing the disease for fear of worrying survivors (Lepore and Revenson 2007).

Previous studies have demonstrated that social constraints are associated with increased PTSD symptoms among cancer survivors. According to social-cognitive processing theory (Lepore 2001), feeling socially constrained can impede opportunities to cognitively process and make sense of one's cancer experience, which can lead to intrusive thoughts about cancer and psychological distress (Cordova et al. 2001; Schmidt and Andrykowski 2004). Social constraints may also contribute to cancer survivors' avoidance in thinking and talking about cancer to maintain relationship harmony and minimize conflicts (Cordova et al. 2001; Schmidt and Andrykowski 2004). Increased avoidance behaviors may further impede the habituation process, resulting in elevated emotional arousal when thinking about cancer (Lepore and Revenson 2007). Moreover, in Chinese culture, cancer is often perceived as "bad luck" and contagious, which has been associated with self-stigmatization and perceived burden among Chinese American breast cancer survivors (Wong-Kim et al. 2005). Socially constraining responses from significant others may aggravate the self-stigmatization as they remind survivors that the disease is a shame and burden to the family (Else-Quest et al. 2009), resulting in persistent emotional distress, lowered self-efficacy in stress coping and prolonged PTSD symptoms (Manne and Glassman 2000).

Social support as a potential buffer for social constraints

Previous research has demonstrated the essential role of social support in reducing stress and improving emotional well-being among breast cancer survivors (den Heijer et al. 2011; Fong et al. 2017). According to the stress buffering hypothesis (Cohen and Wills 1985), perceived social support can make individuals perceive stressors as less harmful, thus providing a buffering effect and enhancing an individual's self-efficacy in stress coping. The social constraining responses from the cancer survivor's networks, such as criticism, denial or withdrawal on the survivor's disclosure, may undermine the cancer survivor's evaluation about their social relationships, perceived control over their disease, and self-efficacy in stress coping (Lepore and Revenson 2007). A supportive social network, such as expressing love and affection, or just spending time together for relaxation, may buffer the negative implications of social constraints. Although these types of social support may not offer direct responses to breast cancer survivors' disclosure, they may facilitate feelings of being loved and cared for, making the survivor perceive the encountered social constraints to be less harmful to their relationship closeness and their self-esteem. The social support can also bolster the survivors' self-efficacy in coping with the stress imposed by social constraints, and alleviate PTSD symptoms.

The buffer function of social support may depend on cultural orientation

The stress-buffering hypothesis suggests that social support needs to match the individual's specific needs for stress coping in order for buffering to be effective (Cohen and Wills 1985). Thus, an important question is which type of social support would provide an effective buffer for social constraints in specific life contexts. Previous studies have found that people's needs for social support vary across cultures, and that social support is most effective in buffering stress when it is manifested in culturally appropriate ways (Kim et al. 2008; Taylor et al. 2004). In Asian collectivistic culture, emotional suppression is encouraged to preserve interpersonal harmony (Wei et al. 2013), and sharing personal problems with others is regarded as unacceptable as it may make inappropriate demands on the group (Butler et al. 2007; Taylor et al. 2004). Consistent with this cultural perspective, previous studies found that Asians and Asian Americans benefit more from social support types which emphasize interdependence but require less emotional disclosure, such as support of positive interaction (e.g., spending time together for relaxation) in comparison to support such as offering advice on personal problems or providing emotional comfort (Taylor

et al. 2007; Wong and Lu 2017). In contrast, for people in Western culture, emotional expression and sharing one's problems are more accepted (Kim and Sherman 2007; Mesquita 2001), and social support is more beneficial when it provides opportunities for emotional disclosure (Taylor et al. 2007; Wong and Lu 2017). In light of these previous findings, it is likely that support of positive interaction, which emphasizes mutual support and requires less emotional disclosure, would effectively buffer the negative implications of social constraints for Asian American breast cancer survivors. For the buffering effect of tangible support that provides material aid (e.g., preparing meals or providing transportation to the hospital), empirical studies are rather limited and have yielded mixed findings. One study found that tangible support was associated with lower anxiety among Chinese-speaking patients with epilepsy but higher depression among healthy controls (Wang et al. 2015). In another study about cancer patients in Taiwan, perceived tangible support predicted greater likelihood of depressive symptoms (Tang et al. 2016). The limited evidence suggests two possibilities for the moderating effect of tangible support for social constraints: On the one hand, tangible support, such as preparing a meal, may alleviate breast cancer survivors' difficulties in life adjustment after treatment and facilitate feelings of being cared for, and thus may buffer the negative effects of social constraints. On the other hand, heavy reliance on support for basic living needs may remind cancer survivors that their disease is a burden to the family, which may lower their self-esteem and aggravate the negative implications of social constraints.

The present study

The present study is intended to investigate the moderation of different types of social support on the association between social constraints and PTSD severity among Chinese American breast cancer survivors. We tested four types of social support as outlined by the widely used Medical Outcomes Study Social Support Survey (Sherbourne and Stewart 1991): (a) support of positive interaction that offers companionship; (b) tangible support which provides material aid; (c) emotional/informational support that offers advice on personal problems and provides emotional comfort; and (d) affectionate support that expresses love and adoration. We hypothesized that the detrimental effects of social constraints on PTSD would be reduced when breast cancer survivors perceive higher levels of support of positive interactions. We also examined the moderation of tangible support, emotional/informational support and affectionate support as exploratory questions.

Table 1 Demographic and Medical Characteristics of Participants (N = 136)

Variable	Frequency (%)[a]/mean (SD)	
Age (years)		
Mean (SD)	57.8 (9.2)	
Range	34—84	
Marital status		
Married	88	64.7%
Never married/divorced/widowed	46	33.8%
Educational level		
Below high school	23	16.9%
High school education	29	21.4%
College education	68	50.0%
Post-graduate degree	15	11.0%
Annual household income		
Less than $15,000	46	33.8%
$15,000–$45,000	43	31.6%
$45,000–$75,000	13	9.6%
More than $75,000	22	16.2%
Cancer Stage		
0	15	11.0%
1	43	31.6%
2	46	33.8%
3	23	16.9%
4	4	2.9%

[a]Percentages may not add up to 100% because of missing data

Methods

Participants

Participants were 136 Chinese American breast cancer survivors ($M_{age} = 57.8$, SD = 9.2), recruited from local communities in Los Angeles, New York, and Houston metropolitan areas. Inclusion criteria included: (a) having a breast cancer diagnosis, (b) completing breast cancer surgery within 5 years, and (c) being comfortable speaking and writing in Chinese (Mandarin or Cantonese). Among the enrolled participants, 64.7% were married, and 61.0% had some college-level education or above. The majority of participants (65.4%) had annual household income below $45,000. Participants had breast cancer diagnosis at stage 0 (11.0%), stage 1 (31.6%), stage 2 (33.8%), stage 3 (16.9%) and stage 4 (2.9%). The average months since diagnosis was 27.2 (SD = 19.3). Table 1 presents demographic information and clinical characteristics of the sample.

Procedures

The study received approval from the institutional review boards of The University of Texas MD Anderson Cancer Center (Protocol Number: PA18-0590) and University of Houston (Protocol Number: 16493-EX). Study procedures have been performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. Informed consent was obtained from all participants included in the study. The present study is based on the baseline data of a larger randomized controlled trial (Lu et al. 2018) that investigated the effectiveness of expressive writing on quality of life for Chinese American breast cancer survivors. Potential participants were introduced to the study by the community staff at local cultural events and educational conferences. Participants who were eligible and consented to participate received the questionnaire packages to complete at home, and mailed back the completed questionnaires in pre-paid envelopes. In the present study, all enrolled participants indicated that they were able to read and understand traditional Chinese characters. For the ease of administration, all the study materials were administered in traditional Chinese characters.

Measures

Social constraints. The Social Constraints Scale (Lepore and Ituarte 1999) was used to measure the frequency with which participants felt socially constrained when interacting with people in their social networks. Sample items were "How often did he/she minimize your problems" and "How often did he/she act uncomfortable when you talked about your illness". The original 15-item scale indicated high internal reliability (Cronbach's $\alpha = 0.92$) in other samples of Chinese American breast cancer survivors (Wong and Lu 2016). To reduce participants' burden, 10 out of the 15 items were selected based on our prior findings in a qualitative study exploring the social needs and challenges of this population of breast cancer survivors (Warmoth et al. 2017). Consistent with our prior findings in a different sample of Chinese American breast cancer survivors (Yeung et al. 2017), two of the selected items "How often did he/she tell you not to worry so much about your health?" and "How often did he/she tell you to try not to think about the cancer?" were removed due to low item-total correlations (rs = 0.22 and 0.26, respectively, compared with rs = 0.68–0.78 for other items). The remaining 8 items capture the fundamental concepts of social constraints experienced by cancer survivors (Lepore 2001; Lepore and Revenson 2007). For each item, participants rated how often they encountered the socially constraining response from either their spouse or partner for the past month on a 4-point scale from (1) *never* to (4) *often*. If a participant did not have a spouse or partner, they were asked to rate how often they experienced social constraints from their family or friends. A higher mean score indicates more frequent experiences of social constraints. The 8-item scale indicated high internal reliability (Cronbach's $\alpha = 0.93$) in the present study.

Perceived social support. Participants' perceived social support was measured using the Chinese version of the Medical Outcomes Study Social Support Survey (Sherbourne and Stewart 1991; Yu et al. 2004), which consists of four subscales assessing the four dimensions of support in the social system: support of positive interaction, tangible support, informational and emotional support, and affectionate support. An example item of the subscale of support of positive interaction was "Someone to get together with for relaxation". A sample item of the subscale of tangible support was "Someone to prepare your meals if you were unable to do it yourself". An example item of the informational and emotional support was "Someone you can count on to listen to you when you need to talk". A sample item of the subscale of affectionate support was "Someone to love and make you feel wanted". For each item, participants rated the frequency with which they perceived support from their social network on a 5-point scale from (1) *none of the time* to (5) *all of the time*. Subscale scores were computed by averaging the corresponding items, with a higher score indicating more adequate support in that dimension. The four subscales indicated good internal reliabilities in the present study (Cronbach's $\alpha = 0.83$–0.94).

PTSD symptoms. PTSD symptoms related to cancer were measured using the 17-item PTSD Symptom Scale—Self report (Foa et al. 1993). Sample items were "Having bad dreams or nightmares about the trauma", "Not being able to remember an important part of the trauma", and "Being jumpy or easily startled". For each item, participants rated the frequency with which they experienced the symptom related to cancer for the past month on a 4-point scale from (0) *not at all* to (3) *almost always*. An average PTSD score was computed for the 17 items, with a higher score indicating more severe PTSD symptoms. The scale had good internal reliability (Cronbach's $\alpha = 0.93$) in the current study.

Analytical strategies

Statistical analyses were performed in SPSS 24.0. We began by conducting descriptive statistics and correlation analyses among variables of major interest. Correlations and chi-square tests were conducted to test the association between PTSD severity and demographic and clinical variables to identify potential covariates. Hypotheses were investigated by running hierarchical linear regression analysis on PTSD severity, with potential covariate(s) entered in Step 1, social constraints and the four dimensions of social support entered

Table 2 Descriptive statistics and correlation matrix of variables of major interest

	M	*SD*	Range	1	2	3	4	5	6
1. Social Constraints	1.99	0.81	1.00–4.00	1	− 0.47**	− 0.45**	− 0.42**	− 0.38**	0.58**
2. Emotional/Informational support	3.29	0.93	1.00–5.00		1	0.85**	0.81**	0.81**	− 0.51**
3. Affectionate support	3.28	1.04	1.00–5.00			1	0.76**	0.87**	− 0.52**
4. Tangible support	3.25	1.12	1.00–5.00				1	0.76**	− 0.46**
5. Positive social interaction	3.22	0.98	1.00–5.00					1	− 0.50**
6. PTSD symptoms	13.83	9.71	0.00–43.00						1

** $p < .01$

in Step 2, and the interactions between social constraints and social support types entered in Step 3. Social constraints and social support types were centered before computing the interaction terms. All the predictors, moderators and the interaction terms were checked for multicollinearity, and the variance inflation factors (VIFs) were all below 10.

Results

Preliminary analysis

All of the enrolled 136 participants completed the baseline questionnaire. Descriptive statistics and correlations among variables of major interest are presented in Table 2. According to the PTSD diagnostic criteria in DSM-IV-TR, 59.6% (n = 81) of the participants were above the threshold for a likely diagnosis of PTSD, which was comparable to our finding of a PTSD prevalence rate of 61.5% in other populations of Chinese American breast cancer survivors (Chu et al. 2019).

Among the demographic and clinical variables, only annual household income was significantly related to PTSD severity ($r = -0.20$, $p < 0.05$). Thus, annual household income was used as a covariate in the subsequent analyses.

Regression analysis

Results of hierarchical regression analysis are presented in Table 3. Social constraints were positively associated with PTSD severity ($\beta = 0.45$, $p < 0.001$).[1] There were significant moderating effects of support of positive interaction ($\beta = -0.35$, $p = 0.04$) and tangible support ($\beta = 0.23$, $p = 0.04$), but not emotional/information support ($\beta = 0.00$, $p = 0.98$) and affectionate support ($\beta = 0.26$, $p = 0.14$).

As recommended by Aiken and West (1991), simple slope tests were conducted following significant interaction effects to examine the association between social constraints and PTSD based on high vs. low levels of perceived social support (i.e., 1 standard deviation above vs. below the mean, respectively). As is indicated in Fig. 1, for breast cancer survivors who perceived lower levels of support of positive interaction, social constraints were associated with more severe PTSD symptoms ($\beta = 0.82$, $p < 0.001$); for participants who perceived higher levels of support of positive interaction, social constraints were not significantly related to PTSD symptoms ($\beta = 0.17$, $p = 0.25$). These results suggest that more adequate support of positive interaction can buffer the detrimental effects of social constraints on PTSD symptoms. For tangible support, the opposite effects were

Table 3 Hierarchical regression analysis predicting PTSD severity from social constraints, with social support types as moderators

	β	R^2	ΔR^2	*df*	*F*
Step 1		0.04	0.04	1, 120	4.97*
Household income	− 0.20*				
Step 2		0.45	0.41	5, 115	15.42***
Social constraints	0.45***				
Emotional/Informational support	− 0.04				
Affectionate support	− 0.07				
Tangible support	0.01				
Positive interaction	− 0.22				
Step 3		0.49	0.05	4, 111	10.74***
Social constraints × EIS	− 0.00				
Social constraints × AS	0.26				
Social constraints × TS	0.23*				
Social constraints × PSI	− 0.35*				

EIS emotional/informational support, *AS* affectionate support, *TS* tangible support, *PSI* support of positive interaction. β s represent standardized regression coefficients. * $p < .05$, *** $p < .001$

[1] Among the enrolled 136 participants, 33 people (24.3%) indicated they did not have a spouse or partner when completing the Social Constraints Scale (that is, the experienced social constraints had come from their family or friends). To examine whether the association between social constraints and PTSD would depend on the person who conveys social constraining responses, we conducted a linear regression on PTSD, with social constraints, the sources of social constraints (spouse/partner vs. family/friend), and their interaction term as predictors. Household income was also added as a covariate. Results indicated that the association between social constraints and PTSD was not moderated by the sources of social constraints, $t = 0.38$, $p = 0.70$.

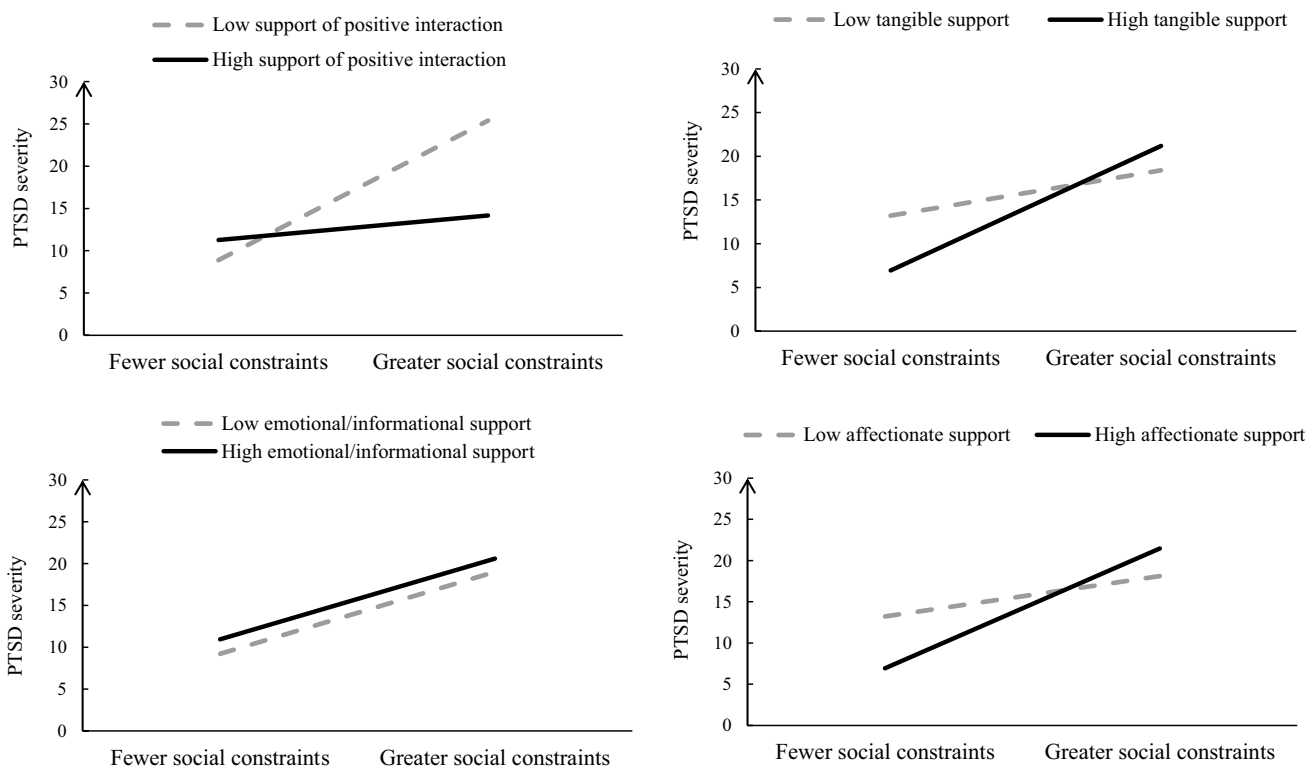

Fig. 1 Moderation of social support on the association between social constraints and PTSD severity

observed. For breast cancer survivors who perceived higher levels of tangible support, the association between social constraints and PTSD symptoms were stronger ($\beta = 0.75$, $p < 0.001$) than those who perceived lower levels of tangible support ($\beta = 0.26$, $p = 0.04$). These findings suggest that high levels of tangible support may exacerbate the influence of social constraints on PTSD symptoms.

Discussion

The present study investigated the moderating effects of four types of social support on the relationship between social constraints and PTSD symptoms among Chinese American breast cancer survivors. We found that only support of positive interaction effectively buffered the detrimental effects of social constraints.

The stress buffering hypothesis (Cohen and Wills 1985) suggests that effective buffering provided by social support depends on the match between the support being offered and the individual's specific coping demands. In Asian collectivistic culture, emotional restraint and self-disciplined silence are valued over emotional expression (Wei et al. 2013) to maintain relationship harmony. Disclosure of distressing feelings is also discouraged as it may burden others (Taylor et al. 2004). Previous studies found that Asians did not benefit from written emotional disclosure as much as European Americans (Knowles et al. 2011; Lu and Stanton 2010). Thus, social support types that emphasize relationship interdependence but involve less emotional disclosure may be most effective in buffering the stress imposed by social constraints for Chinese American breast cancer survivors. Positive social interactions, such as having a get-together for relaxation or simply offering companionship, may well meet Chinese American breast cancer survivors' needs for stress coping. Opportunities to spend time with families and friends for relaxation may facilitate feelings of being cared for and welcomed, and do not require emotional disclosure. Based on the stress buffering hypothesis (Cohen and Wills 1985), feelings of belonging and security can reduce cancer survivors' perceived harmfulness of the stress in the wake of social constraints, and enhance self-efficacy in stress coping. Indeed, previous studies have indicated that compared to emotional disclosure within their social networks, Asian breast cancer survivors tend to prefer to engage in leisure activities to take their minds off cancer worries; this appears to be an effective stress coping strategy for this population (Tam Ashing et al. 2003).

Although tangible support, which emphasizes relationship interdependence, is typically normative in Asian culture (Chen et al. 2012), we found that it did not buffer, but rather potentiated the association between social constraints

and PTSD symptoms. This finding suggests that too much tangible support may not be beneficial for psychological adjustment of Chinese American breast cancer survivors. In Asian collectivistic culture, interpersonal relationships are maintained based on mutual support and contribution (Kitayama and Uchida 2005). Asian women diagnosed with breast cancer tend to put higher values on family obligations or nurturing offspring rather than their own health (Tam Ashing et al. 2003), and often worry about burdening their family (Tam Ashing et al. 2003; Warmoth et al. 2017). Heavy reliance on tangible support for basic living needs may remind Chinese American breast cancer survivors of their loss of autonomy and independence, and may aggravate the perceived burdensomeness imposed by social constraints. In line with this suggestion, one study found that receiving greater tangible support was associated with higher likelihood of depressive symptoms among terminally ill cancer patients in Taiwan (Tang et al. 2016). Moreover, obtaining tangible support often requires explicit support solicitation, which is less acceptable in Asian culture as it may make inappropriate demands on others (Kim et al. 2008). Previous studies found that compared to European Americans, Asians and Asian Americans are more reluctant about explicitly seeking help from their social networks, for fear of burdening others and disturbing relationship harmony (Taylor et al. 2004, 2007). As a result, for those who receive high levels of tangible support from families and friends, the perceived burden of drawing support from close others may add to the stress imposed by social constraints.

In the present study, emotional/informational support and affectionate support did not provide a buffering effect. Elicitation of emotional/informational support and affectionate support may involve greater emotional expression, which Chinese American breast cancer survivors are not comfortable with (Lu et al. 2018; Lu and Stanton 2010). As a result, their buffering effects may be compromised. Future studies are needed to confirm these findings in other Asian subethnicities.

Implications

Our findings highlight the importance of recognizing the cultural sensitivity of ethnic minorities in mental health services and supportive care in cancer. Previous studies found that Asians and Asian Americans are less likely to seek professional mental health services (Kagawa-Singer et al. 1997; Wellisch et al. 1999) and more likely to have worse treatment outcomes (Zane et al. 1994) than non-Hispanic whites. Our findings point to the possibility that the low engagement in mental health services and the compromised treatment outcomes of Asians may result at least in part from the mismatch between Asian patients' culturally specific coping needs and the support offered by mental health practitioners. Mental health services and psychosocial interventions typically involve disclosure of innermost distressing feelings and discussions of personal problems. Our findings suggest that overemphasis of personal disclosure may be inconsistent with Asian cultural values and thus limit the potential treatment efficacy. As such, alternative intervention strategies that require less personal disclosure should be considered. For example, expressive writing interventions focused on cognitive re-appraisal processes have been found to be effective in reducing PTSD symptoms among Asian breast cancer survivors (Chu et al. 2019, 2020). Moreover, given our findings about the negative implications of tangible support, it is important for caregivers and practitioners to recognize Asian cancer survivors' needs for autonomy and independence when providing necessary tangible support. More consideration should be given to those support types that help cancer survivors relieve stress but do not require personal disclosure or explicit support seeking, such as companionship and group-based leisure activities.

Limitations

The present study has limitations that point to future research. First, analyses were reliant on cross-sectional design, and no conclusions can be made regarding causal associations between social constraints and PTSD symptoms. In particular, presence of certain PTSD symptoms, such as avoidance behaviors and emotional distress, may also influence individual's perceived social constraints. Future research is needed to confirm the findings using a longitudinal design. Second, PTSD symptoms were assessed based on self-report and with respect to the "past month", and may thus be subject to memory bias. Future studies should consider structured clinical interviews of PTSD symptomatology. Third, we did not measure the sources of social support offered in the participant's social network. It is likely that tangible support and the support of positive interactions offered by the survivor's spouse, partner, other family members or friends may exert differential buffering effects. It is also possible that social support offered by individuals who make social constraining responses may have a different buffering effect than social support offered by individuals who do not make any social constraining responses. It calls for future research to investigate whether the buffering effect of social support may vary depending on the sources of social support. Finally, samples were restricted to Chinese-speaking women with breast cancer, which limits the generalizability of the findings to other gender groups, ethnicities and cancer types. Future research is needed to investigate the moderating effect of social support with a more diverse population of cancer survivors.

Conclusion

The present study underscores the roles of different types of social support in buffering and even enhancing the association between social constraints and PTSD symptoms among Chinese American breast cancer survivors. Caregivers, support groups and healthcare practitioners should be aware of the potential cultural differences in cancer survivors' coping demands and offer culturally appropriate cancer care and support.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of The University of Texas MD Anderson Cancer Center (Protocol Number: PA18-0590) and University of Houston (Protocol Number: 16493-EX) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

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