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Acculturation matters in the relation between ambivalence over emotional expressions and well-being among Chinese American breast cancer survivors

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Abstract

Purpose Ambivalence over emotional expression (AEE) is the inner conflict of desiring emotion expression and fearing consequence of emotion expression. Few studies to date have examined the effects of AEE within an ethnic group that prioritizes emotional self-control. The present study examined the associations between AEE and well-being (viz., quality of life and depressive symptoms) as a function of acculturation among a sample of Chinese American breast cancer survivors.

Methods Ninety-six Chinese breast cancer survivors ($M_{\text{age}} = 54.64$ years old, $SD = 7.98$) were recruited from Southern California. Participants filled out a paper-pen questionnaire containing the Ambivalence over Emotional Expression Questionnaire (AEQ), the Functional Assessment of Cancer Therapy-Breast (FACT-B), and the Center for Epidemiologic Studies Depression Scale—Short Form (CESD-10).

Results Acculturation was a statistically significant moderator of the relations between AEE and depressive symptoms, and a statistically marginally significant moderator of the relations between AEE and quality of life. Simple slopes revealed that AEE was negatively associated with quality of life ($B = -.45$, $p < .001$) and depressive symptoms ($B = .20$, $p < .001$) for women with high

acculturation, but not associated for women with low acculturation ($Bs = -.15$ and $.04$, $ps > .05$, for quality of life and depressive symptoms, respectively).

Conclusions These results suggest that less acculturated Chinese breast cancer survivors are protected by Chinese cultural values of emotional self-control and restraint, and thus do not experience the detrimental effects of AEE on their depressive symptoms and quality of life. Implications are discussed.

Keywords Ambivalence over emotional expression · Asian American · Chinese · Quality of life · Depressive symptoms · Acculturation

Introduction

Breast cancer survivors are affected by the distress that accompanies the treatment and the life adjustments necessitated by the diagnosis. Cancer survivors experience greater depressive symptoms [1] and greater social constraints than the general population [2]. During this challenging time, they may experience ambivalence over emotional expression (AEE) as they toil over their emotional experiences. AEE is defined as individuals' internal conflict between wanting to express their emotions, but fearing the consequences of such expressions [3]. For example, individuals with high AEE may want to express their sadness, but fear burdening others with their negative mood. Individuals high in AEE tend to report greater psychological distress [4, 5] and poorer interpersonal functioning [6]. However, to contend that the harmful outcomes of AEE is universal across all cultural groups may be premature, as these relations have seldom been tested with Chinese American breast cancer survivors, who

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have different cultural norms and motivations surrounding emotion expression and suppression [7]. Moreover, Asian American women have one of the nation's fastest growing incidence rate for breast cancer [8], signifying the value of research with this understudied population. As such, the present study examines the relations between AEE and well-being (viz., depressive symptoms and quality of life) as a function of acculturation among a sample of Chinese breast cancer survivors.

The ability to assert one's opinions and independence through emotional expression is encouraged in an individualistic society like the United States [9]. At a young age, children from Western contexts are encouraged to speak up and express themselves when they experience distress and upsetting feelings [10]. Unsurprisingly, high levels of AEE were associated with maladjustment among European Americans [6]. Even more, AEE was associated with greater pain and lower quality of life among European American gastrointestinal cancer patients [11]. In tandem with these findings, highly expressive European Americans have greater psychological well-being [12] and greater interpersonal functioning [13].

Whereas low levels of AEE are regarded as essential to healthy interpersonal and intrapersonal functioning among European Americans [14–16], the ability to restrain or control emotions to maintain social harmony is a sign of social competence rooted in interdependent values among Asian Americans [9]. A growing number of studies [17] have illustrated these differences in the costs of expressive suppression, which is often the precursor to the experience of AEE (i.e., the AEE may result from actively suppressing emotions). For example, Asian Americans who valued emotional control expressed less anger and exhibited a “challenge” pattern of cardiovascular responding that is indicative of less physiological effort during a laboratory-based anger-provocation task compared to European Americans who exhibited a “threat” pattern of cardiovascular responding [18]. Second, trait emotion suppression was not associated with depressive symptoms among a sample of Hong Kong Chinese [19]. With the greater utilization of emotion suppression, Asian Americans are therefore more likely to experience AEE [20]. Indeed, Asian Americans reported more AEE than European Americans [21], and qualitative studies found that Asian American breast cancer survivors tend to hide their pain and distress with their loved ones to prevent burdening others [2]. Thus, it may be likely that AEE is not associated with maladjustment among Asian Americans, but these relations with people with chronic medical conditions are less known.

Chinese Americans represent a growing immigrant group in the United States [22]. Different from other Asian American ethnic subgroups (e.g., Filipino Americans), they

have been immigrating to the United States in waves from China, Hong Kong, and Taiwan for decades for a multitude of reasons including political refuge, educational attainment, and reunifications with other family members. Thus, there is tremendous within-group heterogeneity within the Chinese American community in exposure to and experiences with Chinese and American cultures among Chinese Americans [23]. For example, although both individuals may be ethnically Chinese, a recent adult immigrant from China will likely differ in attitudes, beliefs, and behaviors compared to an immigrant who emigrated during childhood. Acculturation is defined as the socialization process by which immigrants manage the keeping or letting go of their heritage culture, and their adjustments to the values, norms, attitudes, and behaviors of the mainstream European American culture [24]. These differences in levels of acculturation among Chinese individuals can be used to confirm differences *between* cultural groups [25]. For example, Chinese breast cancer survivors who are less acculturated to mainstream European American culture will likely value emotional restraint and therefore be more tolerant of their AEE. In contrast, Chinese breast cancer survivors who are more acculturated to mainstream European American culture might value self-assertion through emotion expression, and therefore experience maladjustment from their AEE. Investigating acculturation as a moderator of the AEE and well-being link among Chinese breast cancer survivors allows us to both examine important within-group heterogeneity and confirm known cross-cultural differences.

The present study

Few studies to date have examined AEE with an ethnic group that prioritizes emotional self-control. The present study examined the associations between AEE and well-being (viz., quality of life and depressive symptoms) as a function of acculturation among a sample of Chinese breast cancer survivors. Specifically, we hypothesized that AEE would be associated with lower quality of life and greater depressive symptoms among highly acculturated Chinese breast cancer survivors whereas such association would be lacking among less acculturated Chinese breast cancer survivors.

Methods

Participants

The sample was drawn from a larger intervention study examining the effects of emotional disclosure through writing on psychological and physical well-being among

Chinese breast cancer survivors [26]. Ninety-six Chinese breast cancer survivors were recruited in the present study and were told that the purpose of the study was to understand their cancer experience. Three participants who self-reported more than three standard deviations below the average value of depressive symptoms and quality of life were excluded from the analyses. Data from ninety-three Chinese breast cancer survivors ($M_{\text{age}} = 54.64$ years old, $SD = 7.98$) were analyzed in the present study. The participants were first-generation immigrants (i.e., born in a foreign country) and 63% were born in China, 21% were born in Taiwan, 5% were born in Hong Kong, 10% were born in Vietnam, and 1% were born in Japan.¹ Among them, 73% were married, 8% never married, and 14% divorced. Thirty-two percent were diagnosed at stage I, 42% at stage II, and 13% at stage III. Twenty-nine percent had a high school diploma, 26% had some college education, and 24% had a four-year college education. Forty-two percent reported having <\$15,000 annual personal income, 27% reported having between \$15,000 and \$45,000, 12% reported having between \$45,000 and \$75,000, and 1% reported having more than \$75,000 annual personal income (18% declined to report). Participants have been in the United States for an average of 19.3 years ($SD = 9.52$; range = 3–45).

Procedure

The present study was conducted entirely in Chinese (i.e., including communication and study material). Following established protocols for translating surveys for cross-cultural research [27], the surveys for the study variables were first translated into Chinese by a member of the bilingual research team, and then back-translated by another person into English. Finally, a third person compared the original English survey with the back-translated version and made suggestions until each item was equivalent in meaning.

Participants were recruited from local Chinese American community organizations in Southern California (e.g., the Herald Cancer Association). Community organization staff members provided information to potential participants about the present study at cultural events, educational conferences, and support groups. Study inclusion included 1) diagnosis of breast cancer at stage 0 to III within 5 years and 2) self-identified comfort with speaking, reading, and writing in Chinese. Interested participants were contacted and screened by community research staff via phone to determine eligibility. Once verbal consent was provided, paper-pen questionnaires and consent forms were mailed to the participants. They were instructed to return the

completed questionnaires with the signed consent form in a sealed return envelope. Participants were given US \$20 for their participation and this study was approved by the Institutional Review Board.

Measures

Ambivalence over emotion expression

AEE was assessed with the Ambivalence Over Emotional Expressiveness Questionnaire (AEQ) [3]. As previously mentioned, the AEQ was first translated into Chinese by a member of the bilingual research team, and then back-translated by another person into English. Then, a third bilingual, third person compared the original English version to the Chinese version to ensure equivalence in meaning. The construct of AEE have been validated with a Chinese population in the extant literature [20]. In the original scale, there were 28 items. In the present study, we removed four items due to their low relevance with our population and the feedback of a focus group. Thus, we only included 24 items in the questionnaire package. The following four items were removed: “I try to control my jealousy concerning my boyfriend/girlfriend even though I want to let them know I’m hurting,” “I try to hide my negative feelings around others, even though I am not being fair to those close to me,” “I would like to be more spontaneous in my emotional reactions but I just can’t seem to do it,” and “I would like to express my affection more physically but I am afraid others will get the wrong impression.” Thus, participants rated 24 items (e.g., “I want to express my emotions honestly but I am afraid that it may cause me embarrassment or hurt”) on the extent to which they agree with each item on a 5-point Likert scale (1 = “strongly disagree,” 5 = “strongly agree”). The AEQ has been previously used with rheumatoid arthritis patients [5] and gastrointestinal cancer patients [11]. In the present study, the Cronbach’s α was .95.

Depressive symptoms

Depressive symptoms were assessed with the Chinese version [28] of the Center for Epidemiologic Studies Depression Scale—Short Form (CESD-10) [29]. The short form of the Chinese version of CES-D was validated in Chinese-speaking communities with excellent reliability (internal consistency was 0.78–0.79) and validity [28]. Participants rated ten items related to depressive symptomatology (e.g., “I felt sad”) on a 4-point Likert scale on how often they have experienced each of the twenty symptoms during the past week. The 4-point Likert scale was 0 = “rarely or one of the time (<1 day),” 1 = “some or a little of the time (1–2 days),” 2 = “occasionally or a

¹ Although some participants were born in Vietnam or Japan, they self-identified as ethnically Chinese.

moderate amount of time (3–4 days),” or 3 = “most or all of the time (5–7 days a week).” The CESD-10 was constructed by taking 10 items from the 20 item Center for Epidemiologic Studies Depression Scale (CES-D) [30]. The CESD-10 showed comparable validity and reliability compared with the CES-D, which is one of the most frequently used and well-validated self-report measure of depression (see Orme et al., for a review) [31]. In the present study, the Cronbach’s α was .91.

Quality of life

Quality of life was assessed with Chinese version [32] of the Functional Assessment of Cancer Therapy-Breast (FACT-B) [33]. The Chinese version of the FACT-B was shown to have good psychometrics in Chinese-speaking cancer survivors [32]. Participants rated twenty seven items on breast cancer survivors’ physical (e.g., “I have a lack of energy,” emotional (e.g., “I am losing hope in the fight against my illness”), functional (e.g., “I am able to work”), and social (e.g., “I get emotional support from my family”) well-being with a 5-point Likert scale (0 = “not at all”, 4—“extremely”). A quality of life composite variable was created by summing across each dimension. In the present study, the Cronbach’s α was .91.

Results

Descriptive statistics and bivariate correlations are presented in Table 1. AEE was negatively associated with quality of life ($r = -.35, p < .001$) and positively associated with depressive symptoms ($r = .35, p < .001$). Acculturation was not associated with either depressive symptoms or quality of life, and AEE was not associated with levels of acculturation.

Two hierarchical regression analyses were conducted to examine whether women with lower levels of acculturation would experience protection from the harmful effects of ambivalence over emotional experience than women with higher levels of acculturation (Table 2). All the continuous variables were mean centered. We first tested age and stage

Table 2 Hierarchical regression is of acculturation and AEE on depressive symptoms and quality of life

Outcome	β	R^2	ΔR^2	df	F
Depressive symptoms					
Step 1		.21	–	(3, 83)	7.16***
AEE	.36***				
Acculturation	–.16				
Stage at diagnosis	.27*				
Step 2		.26	.06	(1, 82)	6.18*
AEE \times acculturation	.24*				
Quality of life					
Step 1		.20	–	(3, 85)	7.00***
AEE	–.36***				
Acculturation	.10				
Stage at diagnosis	–.28***				
Step 2		.23	.03	(1, 84)	3.36 [†]
AEE \times acculturation	–.18 [†]				

AEE ambivalence over emotional expression

[†] $p < .10, * p < .05, ** p < .01, *** p < .001$

at diagnosis as potential covariates in these regression models. In both models, stage at diagnosis was a significant covariate, but age was not. Thus, the final model tested involved acculturation, AEE, and stage at diagnosis variables at Step 1, and the acculturation \times AEE interaction variable at Step 2. Consistent with our hypotheses, we found that acculturation was a statistically significant moderator of the relations between AEE and depressive symptoms, $F(1, 82) = 6.18, p < .05, \Delta R^2 = .06, \eta_p^2 = .07$, and a statistically marginally significant moderator of the relations between AEE and quality of life, $F(1, 84) = 3.36, p = .07, \Delta R^2 = .03, \eta_p^2 = .04$. Simple slopes plotted in Fig. 1 revealed that AEE was positively associated with depressive symptoms for women with high acculturation ($B = .20, p < .001$), but not associated for women with low acculturation ($B = .04, p > .05$). Similarly, simple slopes plotted in Fig. 2 revealed that AEE was negatively associated with quality of life for women with high acculturation ($B = -.45, p < .001$), but not

Table 1 Correlations and descriptive statistics for each study variable

Variable	1	2	3	4	$M (SD)$
1. AEE	–				47.29 (22.46)
2. Acculturation	–.12	–			19.71 (4.60)
3. Depressive symptoms	.35***	–.15	–		10.31 (7.11)
4. Quality of life	–.35***	.10	–.77***	–	72.22 (18.29)

AEE ambivalence over emotional experience

* $p < .05, ** p < .01, *** p < .001$

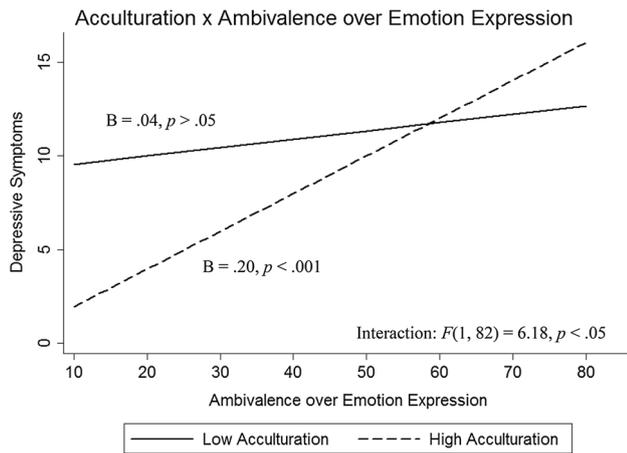


Fig. 1 The interaction of acculturation and ambivalence over emotional expression in predicting depressive symptoms. High acculturation denotes one standard deviation above the mean and low acculturation denotes one standard deviation below the mean

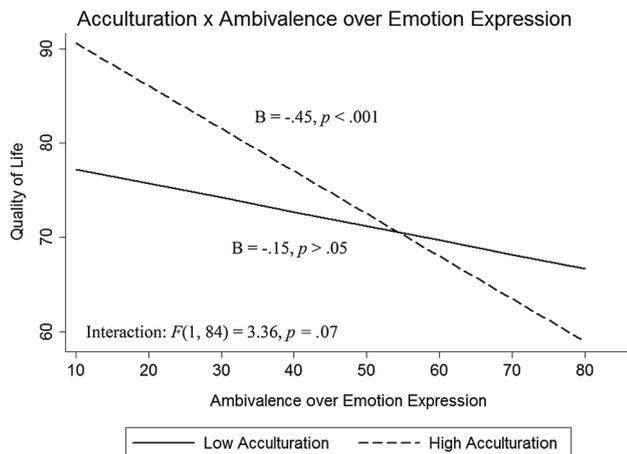


Fig. 2 The interaction of acculturation and ambivalence over emotional expression in predicting quality of life. High acculturation denotes one standard deviation above the mean and low acculturation denotes one standard deviation below the mean

associated for women with low acculturation ($B = -.15$, $p > .05$).

Discussion

The present study contributes to a small but growing literature on emotion regulation processes among Asian American breast cancer survivors. Our findings showcased the importance of testing within-group differences among Chinese Americans as a way to confirm theorized differences between cultural groups. That is, emotional expression is seen as a healthy way to assert the self among individuals from individualistic societies (e.g., United States), but the opposite (i.e., prioritization of emotional

control over individual assertion) is encouraged among individuals from collectivistic societies (e.g., China). When collapsed across acculturation level, AEE was associated with greater depressive symptoms and lower quality of life. However, when acculturation was tested, we found that independent of stage at diagnosis, AEE was associated with greater depressive symptoms and poorer quality of life for Chinese women who are highly acculturated, but not among those who are less acculturated. These findings have important implications for future research and interventions.

As Chinese breast cancer survivors acculturate to mainstream American culture, they ostensibly lose the protection conferred by Chinese values of emotional self-control and prioritization of group concerns. By extension, the experience of AEE becomes culturally incongruent with the American values of emotional expression and self-assertion, and thus is associated with poorer quality of life and greater depressive symptoms. Those highly acculturated usually have more interactions with European Americans who prefer emotion expression. Holding in emotions may impair the recruitment of social support, and thus lead to greater depressive symptoms and lower quality of life. Those with low acculturation usually have more interactions with people from their own culture and emotion suppression may not prevent people from making friends [34] and receiving social support.

While we cannot confirm directional inferences in the present study, one possibility may be that Chinese women with poor quality of life and high levels of depressive symptoms have impaired emotion regulation abilities, and thus greater experience of AEE. Supporting this explanation, the cultural norm hypothesis suggests that depressed individuals tend to regulate their emotions in ways that are culturally incongruent [35]. Thus, highly depressed Chinese women with poor quality of life may experience greater AEE due to preceding difficulties with their emotion regulation. However, if this explanation was true, it remains to be tested why these associations were only significant among highly acculturated Chinese women and not among the less acculturated Chinese women. Ultimately, given our correlational findings, these causal inferences are speculative and require examination. Future work should examine the directionality of these findings with a longitudinal design.

Our findings suggest that for highly acculturated Chinese women, it would be important to develop interventions to reduce AEE. Correspondingly, AEE has been found to be consistently associated with greater depressive symptoms among European American cancer patients [5, 11]. Thus, these findings together suggest that reducing AEE among Chinese Americans may be indicated. Along this vein, extant research have illustrated the benefits of

written emotional disclosure (e.g., expressive writing interventions) as an intervention for reducing maladjustment among medical samples [36, 37]. Indeed, individuals with higher levels of AEE benefited the most from the written emotional disclosure compared with individuals with lower levels of AEE [36, 38]. Asian Americans with higher levels of AEE also benefited more from written emotional disclosure compared with those with lower levels of AEE [21].

However, our findings also raise the question of whether AEE should be targeted as an intervention outcome for less acculturated Chinese women and whether emotion expression should be encouraged in therapeutic settings. On the one hand, the experience of AEE may be a cultural byproduct of the emphasis placed on avoiding interpersonal conflict and maintaining social harmony regardless of the desire to express emotions [20]. Because AEE may benefit the social group by maintaining social harmony, this view suggests that AEE should not be targeted as an intervention target because it is culturally normative. On the other hand, although AEE was not statistically associated with maladjustment among less acculturated Chinese women, we should be cautious that the lack of association could be due to outcomes assessed and sample sizes. Future studies should examine the relations between AEE, acculturation, and other outcomes important for Chinese cancer survivors, such as pain, fatigue, and sleep. For example, AEE has been shown to be associated with pain among a multiethnic sample [39] and Asians have been found to experience more laboratory-induced pain compared with other ethnic groups [40]. Thus, examining AEE, acculturation, and pain together could be a fruitful direction. Furthermore, given that the experience of AEE may be culturally normative among the less acculturated Chinese women, the effects of the expressive writing interventions on this population remain to be tested. That is, would less acculturated Chinese breast cancer survivors benefit from written emotional disclosure if they were not experiencing distress from their AEE? Future research should examine whether and what types of interventions designed to reduce the experience of AEE would benefit Chinese women across all levels of acculturation. For example, would the practice of Tai Chi (i.e., an exercise designed to improve mental and physical health) protect Chinese women from the detrimental effects of AEE by representing a pathway for alleviating negative emotions without harming interpersonal relations [41]? Another direction of future intervention is to provide social support for Chinese women without targeting AEE directly, which has shown to be promising for this population [42].

The present study has several limitations. First, we relied on self-report to assess quality of life and depressive symptoms. Because cultural norms can influence self-

reports of distress [43], future research should examine objective physical health outcomes as another predictor of well-being. Having stated that, the measures selected in this study have largely been validated for use with Chinese-speaking samples. Second, the present research included only Chinese breast cancer survivors with a moderate sample size. Generalizability of our findings to other Asian American subgroups, other cultural groups, and to individuals with other types of medical illnesses is warranted. Lastly, the study utilized a cross-sectional design, and thus, it was not possible to test directional hypotheses. Given the strong relations between AEE and maladjustment, and their implication for interventions, future research utilizing longitudinal, or experimental design is needed.

Despite these limitations, the present study extends prior findings by testing the associations between AEE and well-being as a function of acculturation among Chinese breast cancer survivors. In line with the Chinese cultural striving for maintaining social harmony, the detrimental effects of AEE that is frequently found with European Americans [6] and cancer patients [11] was not apparent among the less acculturated Chinese women. Our findings represent a small but important step in bridging cultural psychological theory with behavioral medicine, and allow us to expose meaningful variability in these emotion regulation processes that promote well-being and quality of life among the Chinese breast cancer survivors.

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Compliance with ethical standards

Conflict of interest The authors declare no conflict of interest.

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee 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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