

Cognitive and Affective Determinants of Decisions to Attend a Group Psychosocial Support Program for Women With Breast Cancer

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Objective: This prospective study assesses the roles of illness beliefs, emotion regulation factors, and sociodemographic characteristics in decisions to participate in a group support program for women recently diagnosed with breast cancer. **Method:** Women recruited during clinic visits 2 to 4 weeks after diagnosis completed measures of affective and cognitive factors identified by Leventhal's Common-Sense Model of illness self-regulation: cancer-related distress, avoidance tendencies, beliefs that the breast cancer was caused by stress and altered immunity, and personal control beliefs. Measures of general anxiety and depression, social support, and demographic characteristics were also completed; prognostic status information was obtained from medical records. All women were encouraged to participate in a free, 12-week program offering coping skills training and group support. Participation was recorded by program staff. **Results:** Of the 110 women, 54 (49%) participated in the group support program and 56 (51%) did not. Logistic regression analyses revealed that participation was predicted by stronger beliefs that the cancer was caused by altered immunity, higher cancer-related distress, lower avoidance tendencies, and younger age. **Conclusions:** Participation in the group psychosocial support program appeared to be guided by cognitive and affective factors identified by the Common-Sense Model. Psychosocial support programs and informational materials promoting their use may attract more participants if they are tailored to focus on resolving cancer-related distress rather than on general anxiety or depression, appeal to those with high avoidance tendencies, address the role of immune function in cancer progression, and meet the needs of older participants. **Key words:** cancer, psychosocial intervention, emotion regulation, self-regulation theory.

RCT = randomized controlled trial; CSM = Common-Sense Model; IPQ-R = Illness Perceptions Questionnaire-Revised; RIES = Revised Impact of Events Scale; CES-D = Center for Epidemiologic Studies Depression Scale.

INTRODUCTION

A key priority in cancer control is to provide patients with needed psychosocial support. Cancer patients often experience significant emotional distress during the treatment process (1–3), and substantial evidence indicates that psychosocial support programs can improve psychosocial adjustment and physical functioning and reduce health care costs (4–8). Yet use of support services remains low, with only 8% to 21% of eligible patients attending available group education and support programs (9–12). Lack of awareness of services and lack of provider referral are common barriers (9), but other psychosocial factors are also likely to impede use. By identifying factors influencing use of these services, barriers (such as misconceptions about the programs or beliefs that they will not address their needs) can be addressed in informational materials, and developers can tailor program contents to the clients who typically use them. This study assesses psychosocial and demographic determinants of participation in a group support program for women recently diagnosed with breast cancer. Support program participation is construed within the context of self-regulation theory (13) as a behavior motivated by illness beliefs, emotional distress, and coping tendencies.

A limited number of retrospective studies have explored

differences between users and nonusers of psychosocial support services, and they provide mixed evidence regarding relationships between personal characteristics and attendance. Younger age and higher education have been associated with a greater propensity to use cancer support services (14–18), although opposite associations of age and education with use have been found (19,20). Emotional distress factors also have been associated with use of cancer support services, although studies provide conflicting evidence regarding the direction of these associations (15,17,18). Taylor et al. (19) found that support group attenders (versus nonattenders) reported less depression but more cancer-related worries, suggesting that illness-specific distress may be the critical affective factor motivating attendance. In terms of coping factors, there is limited evidence that use of cancer support services is associated with higher social support (9,14) and less use of avoidance coping strategies (15).

These findings are limited by the retrospective study designs, as psychosocial differences between attenders and nonattenders may be attributable to support services effects on those factors. Several RCTs of cancer support interventions provide evidence that participants (compared with patients declining RCT participation) report greater distress (21–23). In these RCTs, however, participation reflects a willingness to be randomized into either program or control conditions but not a willingness to attend the programs per se. Decliners may be less distressed because they avoid randomization and retain the option of attending other support programs (24). Evidence is also limited by the high proportion of studies using patients with a variety of cancer types and lengths of time since diagnosis, because determinants of participation may vary according to these factors. Finally, the research is limited by the lack of attention to illness beliefs as potential determinants and by the atheoretical nature of the studies.

Self-regulation theory provides a useful framework for understanding illness behaviors such as support group use by identifying how illness beliefs and emotions motivate behav-

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ior (13). According to Leventhal's Common-Sense Model (CSM) of illness self-regulation (25), illness behaviors are guided by cognitive representations of the illness and associated emotional reactions. Representational beliefs about the illness's causes, expected duration, personal control over illness progression, and other attributes direct the use of strategies to control the illness. Illness distress (e.g., anxiety induced by the illness) also direct coping by motivating emotion-focused strategies such as engagement of social support, stress-management, or avoidance responses (e.g., efforts to ignore the illness and its ramifications).

Guided by the CSM, we propose that causal beliefs and personal control beliefs influence decisions to use support programs. In terms of causal beliefs, patients frequently adopt a "stress model" and view stress as a contributor to their disease progression (26–28). Cancer patients are also likely to have an "altered immunity" model, particularly as the role of immune function in cancer has received considerable media attention. Patients who attribute their cancer to stress and altered immunity may be motivated to attend a support program as a means of controlling stress and enhancing immune function. High control beliefs may also motivate use of self-help programs (29). For example, a retrospective study found breast cancer patients with high control beliefs used more complementary therapies (30). This association may, however, reflect the impact of the therapies on perceived control. In addition to these representational attributes, emotion regulation factors are also expected to influence use of cancer support programs. Illness distress may motivate protective behaviors, such as use of support services, as a means of alleviating distress either directly via distress reduction strategies (e.g., relaxation) or indirectly by controlling the illness (31–34). In contrast, efforts to control distress through avoidance tactics may inhibit use of support services.

This study assessed predictors of participation in a group support and coping skills training program for women recently diagnosed with breast cancer. We predicted that participation would be associated with beliefs that stress and immune function play a causal role in cancer progression, high control beliefs, high illness-specific distress, and low avoidance. The roles of general anxiety and depression were assessed to identify whether illness distress uniquely predicts participation after controlling for general distress. Finally, we explored other potential barriers to participation by assessing its associations with demographic and clinical characteristics and social support (given retrospective evidence of its positive relationship with participation).

METHOD

Participants

Study participants were women attending a private breast clinic who had been diagnosed with primary breast cancer within the past 8 weeks. Eligible women had a prognoses ranging from *very poor* to *good* (35); women with *excellent* prognoses (who required no further treatment) were excluded as the psychosocial program was designed to provide support to women as they were undergoing further treatment. Women also had to be within traveling distance of the program venue and free of clinical psychopathology and

communication difficulties, as determined by the clinic's psychologist. Of the 149 women invited to participate, 110 women (74%) agreed, 26 women (17%) declined, and 13 women (9%) did not respond to follow-up contacts. Reasons for declining (some women gave two or more reasons) included too many commitments ($N = 14$), beliefs that the cancer was gone ($N = 4$), emotional shock precluding ability to be involved ($N = 4$), and not wanting to be reminded of cancer by the questionnaires ($N = 9$). Research ethics approval was obtained before recruitment. Demographic and clinical characteristics are presented in Table 1.

Group Support and Coping Skills Training Program

The "Health and Healing Program" is a 12-week course adapted from a program developed by Cunningham and associates (36). Groups of 8 to 11 women met with two facilitators weekly for two-hour sessions and received manuals and audiocassette tapes for home use. The facilitators were from a group of five therapists trained in the program's delivery by A. Cunningham and the researchers. The program provides training in stress management (relaxation, imagery, emotion regulation, setting priorities and goals, emotional disclosure through writing, anger management, and meditation), and group discussion and support.

Procedure

On arrival to the clinic, the patient was given a letter, signed by the clinic director and the clinic psychologist, describing the potential benefits of the support group program and encouraging participation. The oncologist then invited the patient to meet with a researcher to discuss study participation. The researcher explained that the study would evaluate support services use and the potential benefits of the support group program and other services. It was emphasized that women could choose to participate in the study and, independently, the group program. The program was described as providing training in skills for coping with cancer and opportunities to discuss experiences with other breast cancer patients. It was stressed that the program was free and transportation to sessions could be provided. Evening sessions were scheduled according to the preferences of the women. Women were called within one week and asked if they wished to participate in the program. Women who were undecided were called again and provided with updates on session arrangements until a decision was made.

Recruitment began in June 2000 and continued for 23 months. All eligible patients were approached until at least 100 women were recruited and at least 50 women agreed to participate in the group program, as this sample size provided sufficient power (0.80) to detect effects of $Exp(B) = 1.2$ at $p < .05$. An additional 3 program participants were recruited so that the final group included 8 women, yielding a sample of $N = 110$. Six groups were run.

TABLE 1. Demographic and Clinical Characteristics of the Sample ($N = 110$)

| Characteristic | Sample M (SD) or % |
|-------------------------------------|----------------------|
| Age | 51.48 (9.26) |
| New Zealand (NZ) European ethnicity | 83 |
| Married/de facto relationship | 72 |
| Tertiary level education | 56 |
| Currently employed | 55 |
| Annual household income | NZ\$ 60,500 (15,084) |
| Prognosis | |
| Good | 42 |
| Average | 35 |
| Poor | 16 |
| Very poor | 7 |
| Chemotherapy | 33 |
| Radiation therapy | 71 |
| Tamoxifen/Zoladex | 60 |
| Weeks since surgery | 2.41 (0.32) |

Measures

Illness Beliefs and Illness Distress

Measures of illness beliefs and distress were adapted subscales of the Illness Perceptions Questionnaire-Revised (IPQ-R) (37). Because of the questionnaire length, we used shortened versions of the personal control and illness distress subscales, each consisting of 3 to 4 of the 5 to 6 items that loaded most highly on the subscale factors in principal components analyses (37). Psychometric analyses using the data from the IPQ-R validation study ($N = 711$) (37) revealed that the shortened and full subscales exhibited comparable discriminant and convergent validity with measures of other illness beliefs and negative affectivity. For example, correlations with duration beliefs were $r = -.28$ and $r = -.25$ for the short and full personal control subscales, respectively, and $r = .53$ for both the short and full illness distress subscales. Correlations with negative affectivity were $r = -.08$ and $r = -.07$ for the short and full personal control subscales, and $r = .53$ and $r = .54$ for the short and full illness distress subscales. A series of t tests assessing known groups validity by comparisons of acute and chronic pain patients ($N = 95$; see ref. 41) revealed that chronic pain patients reported less control and more distress (p values < 0.001), and analyses using the shortened and full subscales yielded comparable effect sizes. For short and full personal control scales, $\eta^2 = 0.20$ and $\eta^2 = 0.17$, respectively; for both the short and full illness distress scales, $\eta^2 = 0.15$.

Items were rated from 1 (*strongly disagree*) to 5 (*strongly agree*). The personal control items are as follows: "What I do can determine whether my breast cancer gets better or worse," "My actions will have no effect on the outcome of my breast cancer," and "Nothing I do will affect my breast cancer" ($\alpha = 0.80$). The illness distress items are as follows: "I get depressed when I think about my breast cancer," "My breast cancer makes me feel angry," "Having breast cancer makes me feel anxious," and "My breast cancer makes me feel afraid" ($\alpha = 0.83$). Scores reflect summed ratings. The IPQ-R causal beliefs subscale was used; it includes two items for rating agreement that one's breast cancer was caused by "stress or worry" and "altered immunity."

Avoidance

The avoidance subscale of the Revised Impact of Events Scale (RIES) (38) was used. This measure contains 8 items ($\alpha = 0.83$) assessing the frequency (in the past week) of cognitive and behavioral avoidance of cancer-related thoughts and emotions (e.g., "I tried not to think about it" and "I stayed away from reminders of it").

Anxiety

General anxiety was assessed with the short form of the State-Trait Anxiety Inventory state scale, which has been found to have acceptable reliability and validity (39).

Depression

General depression was assessed using the Center for Epidemiologic Studies Depression (CES-D) Scale, a measure with established reliability and validity (40,41).

Social Support

A social network measure (42) assessed contacts with each of 12 social relationships (e.g., spouse or partner, friend, or workmate). Respondents indicated (*yes* or *no*) whether they speak to someone in that relationship at least once every 2 weeks. Scores indicate the number of *yes* responses. Emotional support was assessed with Social Support Behaviors Scale (43). Respondents indicate the likelihood that their family and friends would provide support (e.g., "comfort you if you were upset"). Ratings, which ranged from 1 (*would not do this*) to 4 (*would certainly do this*), were summed; $\alpha = 0.93$.

Demographic and Clinical Characteristics

Age, ethnic identity, education, income, marital status, and employment status were assessed with single items in the questionnaire. Data on diagnosis,

tumor histology, and chemotherapy/radiation therapy were obtained from medical records. Data on tumor size, grade, and nodal status were used to calculate prognostic status using the Nottingham Prognostic Index (35). This method categorizes prognostic scores as excellent (0), good (1), average (2), poor (3), and very poor (4).

Participation Decisions

Participation was defined as attendance of one or more of the program sessions. Participation was corroborated by the group facilitators.

Statistical Analyses

Tests of skewness and kurtosis were used to evaluate the normality of distributions for the continuous variables. Pearson and point-biserial correlations were calculated to assess zero-order associations among demographic, clinical, and psychosocial variables. Logistic regression analyses were used to assess the predictive relationships of the demographic, clinical, and psychosocial variables with program participation.

RESULTS

Assessments of distribution normality revealed that two variables exhibited significant skewness: functional support (-1.92 , $SE = 0.24$), attributable to 5 outlier values (> 3 SDs); and personal control (-0.91 , $SE = 0.24$) attributable to 2 outlier values. Two sets of the correlation and logistic regression analyses involving functional support and personal control were conducted, first with outlier values truncated to $M - 3SD$ and then without truncation. Both sets of analyses revealed identical patterns of results, and so the final analyses used the untruncated values.

Table 2 presents the correlations for the psychosocial variables and the demographic and clinical variables that significantly correlated with at least one psychosocial variable (age, ethnicity, income, marital status, use of chemotherapy, and use of radiation therapy did not). Poorer prognosis was associated with higher control beliefs. Higher education was associated with lower control beliefs, poorer functional support, and lower avoidance. Employed women tended to have higher anxiety and were more likely to believe their cancer was caused by stress. General anxiety, depression, illness distress, and avoidance were all moderately correlated. The causal beliefs of altered immunity and stress were positively correlated, indicating that they tend to co-occur in causal models of breast cancer.

Of the 110 patients, 54 (49%) decided to attend the group support program and 56 (51%) did not. Program participants attended a median of 9 sessions ($M = 8.50$, $SD = 3.75$), with attendance ranging from 1 session ($n = 3$) to 12 sessions ($n = 7$).

Four logistic regression analyses were conducted to assess whether program participation was independently predicted by: (a) demographic features, (b) clinical factors, (c) general distress and social support, and (d) self-regulation factors. The first analysis, which included age, income, tertiary education, marital status, employment status, and ethnicity, revealed that age was the only demographic variable predicting participation. Younger age was associated with a greater propensity to participate, $Wald = 6.01$, $Exp(B) = 0.93$, $p < .02$; for all other variables, $Wald < 2.91$, $p > .11$. The next analysis included

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TABLE 2. Zero-Order Correlations, Means, SDs, and Score Ranges

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-----------------------------------|-------|--------|-------|--------|--------|-------|-------|--------|------|--------|-------|-------|
| 1. Prognosis | — | | | | | | | | | | | |
| 2. Education | -0.16 | — | | | | | | | | | | |
| 3. Employment | -0.03 | 0.06 | — | | | | | | | | | |
| 4. General anxiety | -0.09 | 0.13 | 0.24* | — | | | | | | | | |
| 5. General depression | 0.03 | 0.10 | 0.16 | 0.68** | — | | | | | | | |
| 6. Functional support | 0.04 | -0.23* | -0.12 | -0.16 | -0.16 | — | | | | | | |
| 7. Social network | -0.01 | 0.01 | 0.09 | 0.06 | 0.08 | 0.05 | — | | | | | |
| 8. Altered immunity causal belief | 0.11 | -0.05 | 0.14 | 0.09 | 0.02 | 0.05 | 0.15 | — | | | | |
| 9. Stress causal belief | 0.01 | -0.03 | 0.21* | 0.21* | 0.09 | -0.16 | -0.05 | 0.32** | — | | | |
| 10. Illness distress | 0.06 | -0.02 | 0.06 | 0.54** | 0.39** | -0.02 | 0.06 | 0.16 | 0.15 | — | | |
| 11. Personal control beliefs | 0.20* | -0.19* | 0.10 | -0.15 | -0.21* | 0.13 | 0.11 | 0.07 | 0.12 | -0.04 | — | |
| 12. Avoidance | 0.10 | -0.19* | 0.01 | 0.37** | 0.33** | 0.03 | 0.07 | 0.17 | 0.11 | 0.44** | 0.00 | — |
| Mean | 1.89 | 0.49 | 0.69 | 14.12 | 7.16 | 18.72 | 6.38 | 2.92 | 3.55 | 11.29 | 11.91 | 12.54 |
| SD | 0.93 | 0.30 | 0.47 | 5.06 | 4.81 | 2.52 | 2.10 | 1.03 | 1.07 | 3.56 | 2.44 | 8.47 |
| Range | 1-4 | 0-1 | 0-1 | 6-29 | 0-21 | 5-20 | 2-12 | 1-5 | 1-5 | 4-20 | 3-15 | 0-36 |

Note. For prognosis, a higher score indicates a poorer prognosis. For education, 0 = no tertiary education and 1 = some tertiary education. For employment, 0 = unemployed and 1 = employed. For all other measures, higher scores reflect greater levels of the factor.

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

age, prognosis, radiation therapy, chemotherapy, and tamoxifen/Zoladex use. Age significantly predicted program participation, $Wald = 11.61$, $Exp(B) = 0.91$, $p < .01$; the clinical variables were not significant predictors, $Wald < 1.10$, p values $> .30$. The third analysis included age, general anxiety and depression, and the social support variables as predictors. Again, only age was significant, $Wald = 9.18$, $Exp(B) = 0.92$, $p < .01$; for the other variables, $Wald < 2.48$, p values $> .12$. The final analysis included age and the self-regulation variables (Table 3). Age remained a significant predictor of participation. As predicted, altered immunity causal beliefs and illness distress were associated with a higher propensity to participate whereas avoidance was associated with a lower propensity to participate. Contrary to predictions, stress causal beliefs and control beliefs did not predict participation.

DISCUSSION

The findings revealed that younger age, beliefs that altered immunity caused one's cancer, illness-specific distress, and avoidance responses independently predicted decisions to attend a support group program for breast cancer patients. To our knowledge, this is the first prospective study to assess determinants of participation in a cancer support program outside of a RCT context, and the first study to use the CSM to develop and test hypotheses regarding cognitive and affec-

tive determinants of this illness behavior. Participation was guided primarily by illness representation and emotion regulation factors identified by the CSM; other factors such as social support, education level, general distress, and cancer prognosis were not significant predictors. The minimization of common barriers (by providing detailed program information, endorsement from clinic staff, convenient times, and transportation) and sample heterogeneity (by including patients with the same type of cancer and time since diagnosis) provided a clearer assessment of self-regulation factors influencing participation.

The finding that immunity causal beliefs motivate participation contributes to evidence that causal attributions critically influence illness behaviors (44,45). Stress causal beliefs were not associated with program participation, in contrast with retrospective findings that cancer survivors making stress attributions were more likely to use complementary therapies (27). Causal beliefs of stress and altered immunity were correlated, suggesting that they tend to co-occur and reflect a causal model of breast cancer involving reduced immune function attributable to stress. It appears, however, that it is beliefs about the role of immune function, which may be seen as affected by many factors such as diet or pollution, that influence participation.

The perceived causal role of immunity may motivate use of

Table 3. Logistic Regression Analysis of Factors Predicting Participation in a Group Support and Coping Skills Training Program

| Variable | B | SE B | Wald (df = 1) | p | Exp(B) | 95% CI for Exp(B) |
|-------------------------|-------|------|---------------|-----|--------|-------------------|
| Age | -0.10 | 0.03 | 10.56 | .01 | 0.91 | 0.86-0.97 |
| Immunity causal belief | 0.86 | 0.26 | 11.14 | .01 | 2.36 | 1.43-3.91 |
| Stress causal belief | -0.24 | 0.24 | 0.99 | .32 | 0.79 | 0.49-1.26 |
| Personal control belief | 0.10 | 0.11 | 0.91 | .34 | 1.11 | 0.90-1.37 |
| Illness distress | 0.18 | 0.08 | 5.68 | .02 | 1.20 | 1.04-1.39 |
| Avoidance | -0.09 | 0.04 | 6.24 | .01 | 0.91 | 0.85-0.98 |

a psychosocial support program, particularly one providing training in coping skills, because the patients hope the program activities will enhance immune function. There is some evidence that such programs influence immune processes (46–49), although more research is needed to establish whether these effects reduce recurrence or increase survival (50). The program information did not mention any potential influences of its activities on immune function. Some women may spontaneously develop beliefs that their cancer was caused by poor immunity and positive expectations regarding the immune effects of support programs, and programs may need to address these expectations by carefully discussing the empirical evidence of such effects.

Contrary to hypotheses, personal control beliefs did not predict participation in the support group program. Control beliefs do not appear to determine participation early in the treatment process, although further research may find that they influence participation at later time points, for other cancer groups, or for other types of support services. Interestingly, women with poorer prognoses tended to have stronger control beliefs. This association may reflect a defensive response to the threatening prognosis, in which women form stronger beliefs that their actions influence cancer progression in order to reduce fear and hopelessness.

The findings help to clarify the role of distress factors motivating support group participation. Participants (relative to nonparticipants) were not more anxious or depressed in general, but they reported greater cancer-specific distress. Programs offering support and coping skills training may be most effective if they focus primarily on cancer-specific distress and not on general anxiety and depression. For example, relaxation exercises might target coping with cancer experiences (e.g., doctor visits, chemotherapy, or difficult family issues related to cancer), and cognitive-behavioral therapy techniques might address cancer-specific beliefs rather than more generic thought processes. Avoidance was associated with a lower propensity to attend the support program, indicating that this coping tendency may inhibit use of a potentially helpful service. This finding is particularly important in light of evidence that women high in avoidance tendencies may be more prone to problems in adjustment to cancer and disease progression (1,51–53). More work is needed to determine whether group support programs are helpful for women high in avoidance and, if so, how to make them attractive to these women. The findings also contribute to evidence that these programs are less attractive to older patients (14,15). As there is no evidence that programs are less helpful for older patients, there is a need to develop information materials highlighting their appropriateness for older people. Contrary to retrospective evidence, participation was not associated with education or social support. That functional support, social network, and marital status were unrelated to participation suggests that women did not attend the program because of loneliness or poor relationships. However, participation may be motivated by more complex social incentives, such as desires to compare experiences with those of other patients.

Several study limitations warrant comment. The women tended to be of European ethnicity and moderate socioeconomic status, and only recently diagnosed breast cancer patients with very poor to good prognoses were included. For other sociodemographic and cancer groups, different beliefs or conditions may determine their use of support group programs. Reasons provided by women declining study participation suggest that the findings may generalize only to women without extreme emotional shock, denial, or cancer avoidance. Other samples of patients receiving cancer treatment have exhibited comparable levels of avoidance (RIES avoidance $M = 11.95$, $SD = 9.19$; 54) and depression (CES-D $M = 5.89$, $SD = 4.50$; 55), however, suggesting that study participants were not relatively less avoidant or depressed. The use of the IPQ-R causal beliefs subscale, which assesses each causal belief with a single item, provides only preliminary indications of how stress and immunity causal beliefs are structured in mental representations of breast cancer and relate to use of a support program. Future research should explore how patients construe the role of immunity in cancer progression and develop a measure that effectively assesses this construal. Although the adapted measures of control beliefs and illness distress exhibited comparable psychometric properties in relation to the original IPQ-R measures, future research should compare the predictive relationships of the adapted and original measures with support group participation and other health behaviors. Efforts to replicate and extend the present findings are particularly warranted given the limited sample size. Finally, the descriptive findings assist in identifying factors influencing participation decisions, but their causal roles remain to be determined.

To conclude the present study demonstrates the utility of using the CSM as a model for decisions to use cancer support services. The moderate participation rate (49%), even after strong encouragement and removal of common barriers to participation, highlights the importance of identifying psychosocial determinants of support program use. The findings contribute to the development of the CSM by identifying the importance of specific illness-representational contents and emotion regulation processes for this type of illness behavior, and they suggest the utility of developing a more detailed understanding and modeling of the self-regulation components of immunity causal beliefs, illness distress, and avoidance coping.

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