Language acquisition, unemployment and depressive disorder among Southeast Asian refugees: a 10-year study

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Abstract

The current study examines the risk-inducing effects of unemployment and the protective effects of language facility on the mental health of Southeast Asian refugees resettling in Canada. Rates of depression and of unemployment declined dramatically during the first decade after arrival. Although language fluency also improved during this period, approximately 8% of the sample spoke no English even after 10 years in the country. Initial depression was a strong predictor of subsequent depression. For males, job experience in Canada was the strongest predictor of subsequent employment whereas, for women, depression proved an important predictor of employability. For men in particular, unemployment was a potent risk factor for depression. During the initial period of resettlement, English-speaking ability had no effect on depression or on employment. However, by the end of the first decade in Canada, English language fluency was a significant predictor of depression and employment, particularly among refugee women and among people who did not become engaged in the labor market during the earliest years of resettlement. Study results demonstrate that the mental health salience of risk and protective factors changes according to the phase of resettlement. © 2001 Elsevier Science Ltd. All rights reserved.

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Introduction

Refugee resettlement is a protracted, perhaps even a life-long process (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988).

Many countries have acknowledged a moral obligation to admit refugees in order to protect them. Providing the services necessary to help refugees resettle in countries which offer them permanent asylum is an equally important moral imperative. Facilitating successful resettlement also makes good sense: an early investment in their future helps to ensure that people admitted as refugees will become contributing members of their adopted societies (Beiser, 1999). Research identifying resettlement stresses that jeopardize mental health as well as the personal and social resources that protect it provides an important knowledge base for effective programming. Longitudinal research is particularly important because service planning must take cognizance not only of which programs are most likely to be helpful, but, in addition, the points during the resettlement process at which they are likely to be the most effective (Beiser, 1999; Beiser, Turner, & Ganesan, 1989; Westermeyer, Neider, & Callies, 1989; Westermeyer, Neider, & Vang, 1984).

The current report from the University of Toronto Refugee Resettlement Project (RRP), a study of the resettlement of Southeast Asian refugees in Canada, examines the mental health effects of putative risk and

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protective factors. To address the longitudinal perspective necessary for effective planning, the report focuses on data gathered at three different points during the refugees' first decade in Canada.

Towards a dynamic model of resettlement and psychological adjustment

Drawing upon stress process theory (Pearlin, 1989; Coyne & Downey, 1991; Thoits, 1995), the RRP has developed a model to guide its investigations (Beiser, 1990, 1999). According to this model, resettlement stresses such as unemployment or underemployment, separation from family and the experience of discrimination jeopardize mental well-being, while personal resources such as ability to speak the host country language, and social resources, such as intimate relationships, and the availability of a like-ethnic community, help safeguard mental health (Beiser et al., 1989; Beiser & Hyman, 1997a, b; Beiser, 1999; Chung & Kagawa-Singer, 1993; Hinton, Tiet, Tran, & Chesney, 1997; Rumbaut, 1989).

The present study examines the model within a longitudinal context. Cross-sectional studies provide snap-shots of adaptation to a new environment. Static images cannot, however, do justice to resettlement, a moving sequence of challenges and adaptive responses whose importance is conditioned by time. For example, research (Beiser, 1988; Beiser et al., 1989; Grinberg, 1984; Rumbaut, 1985; Tyhurst, 1977; Westermeyer et al., 1984) suggests that mental health risk increases during the first 10–24 months after arrival and subsequently declines. Although the factors underlying these changes are poorly understood, substantial evidence highlights the role of support provided by a like-ethnic community (Beiser, 1988). It is, however, a role whose salience is affected by the phase of resettlement. During the early months of resettlement, the presence of a like-ethnic community helps protect individual mental health. However, after the first 2–3 years in a country of asylum, the mental health significance of the like-ethnic community declines (Beiser et al., 1989; Beiser, 1999).

Besides addressing possible changes in salience, longitudinal research also makes it possible to study antecedent, concurrent and consequent relationships. The status of a variable at one particular point in time may affect not only subsequent levels of the same variable, but of other variables as well. For example, major depression tends to be a persistent, or highly recurrent condition (Rumbaut, 1989; Sargent, Bruce, Florio, & Weissman, 1990; Keller et al., 1984). Baseline measures of psychological states such as depression act as a proxy for predisposition, the extent to which vulnerability and experience combine to produce psychological disorder. Although mental health is often considered a dependent variable, it may also act as an important predictor of psychosocial variables involved in the resettlement process (Thoits, 1995; Kessler, Turner, & House, 1987). For example, family stress can jeopardize mental health. On the other hand, persons with mental disorders not only create stressful situations for themselves and for their families, but alienate extra-familial contacts as well.
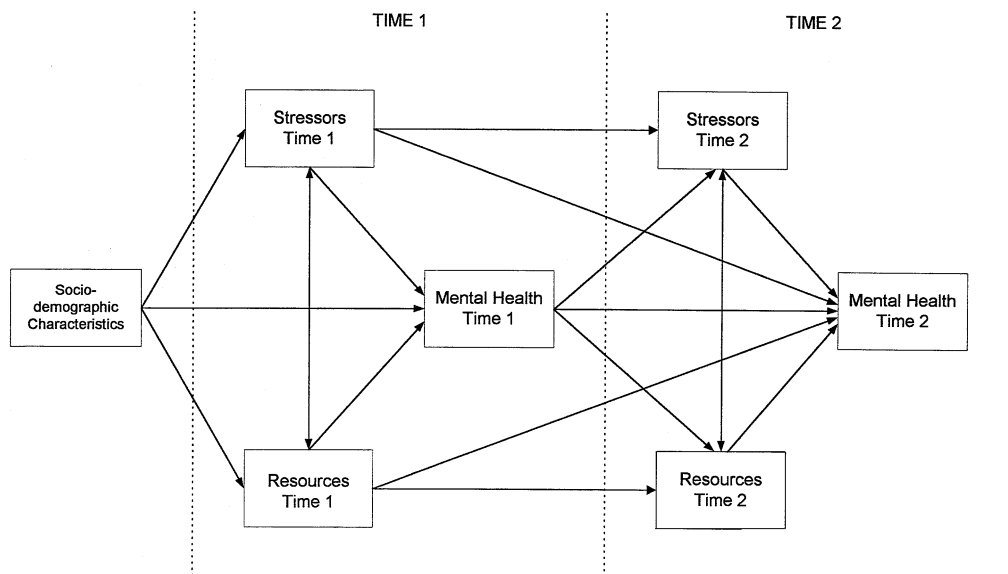

Fig. 1. A simplified dynamic model of psychological adjustment among immigrants and refugees.

Fig. 1 presents a two-stage longitudinal model depicting the relationship between resettlement and depressive disorder. The model's incorporation of a time dimension highlights the importance of temporal changes in salience, as well as potential feed-back and carry-over effects. This analytical approach considers mental health outcomes, stressors, and resources as both exogenous and endogenous variables and estimates their effects simultaneously. Stressors and resources are treated not only as predictors of the occurrence of depressive disorder, but as variables subject to the potential effects of other predictors. In order to take into account possible reciprocal relationships, the lines in the figure connecting stressors and resources are bidirectional.

The model includes age, sex, and education which, according to previous research, have important links to the occurrence of depressive disorder (Weissman & Klerman, 1977; Weissman, 1987). Although the passage of time does not change moderating variables such as these, the phase of resettlement may affect their salience (Hinton et al., 1997; Beiser, Cargo, & Woodbury, 1994; Beiser, 1999).

Language ability, unemployment, and depressive disorder

The current study examines the mental health impact of lack of language proficiency and unemployment, two of the most common resettlement stressors facing immigrants and refugees (Beiser, Johnson, & Turner, 1993; Noh & Avison, 1996; Vega, Gil, Warheit, Zimmerman, & Apospori, 1993).

Language proficiency and psychological adjustment

According to theory, language proficiency protects mental health by facilitating social contact, by militating against dependence on others, by promoting the development of new social resources, by enlarging the repertoire of individual coping strategies, and by increasing refugees' sense of internal coherence (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988; Dorais, 1987; Nicassio, 1985; Westermeyer et al., 1984; Ying & Miller, 1992; Ying & Akutsu, 1997). Empirical investigation of this proposition has, however, yielded conflicting results, with some studies demonstrating the expected relationship between lack of language fluency and symptoms of psychological distress (Chung & Kagawa-Singer, 1995), while others demonstrate no apparent linkages (Beiser & Hyman, 1997a; Nicassio, 1985; Nwadiora & McAdoo, 1996; Rumbaut, 1989; Westermeyer et al., 1989).

Such discrepant results may be due, at least in part, to failure to take account of the moderating effect of phase of resettlement. For instance, Hinton et al. (1997) found that English proficiency was not significantly related to depression among Southeast Asian refugees who had been in the US for 6 months or less. Once the refugees had been in the US 12 months or more, however, the relationship became significant. Using cross-sectional data, Chung and Kagawa-Singer (1993) demonstrated that English-speaking ability was significantly correlated with depressive symptoms, but only for refugees resettled for 5 or more years.

Failure to examine potential indirect effects of language fluency on mental health may also help explain the inconsistent results reported in the literature. For example, poor English language skills may increase the possibility of unemployment which, in turn, jeopardizes mental health.

Unemployment and psychological adjustment

Unemployment threatens psychological well-being (Brenner, 1995; Kessler et al., 1987; Ying & Akustsu, 1995). For the native born population of North America, unemployment may create depression through a variety of pathways including financial strain, loss of self-esteem and restriction of social contact (Warr, 1982, 1987; Olafsson & Svensson, 1986; Kessler et al., 1987; Atkinson, Liem, & Liem, 1986; House, Williams, & Kessler, 1986). Although unemployment also jeopardizes the well-being of immigrants and refugees (Beiser et al., 1993; Caplan, Whitmore, & Choy, 1989; Selten & Sijben, 1994; Westermeyer, 1989), this relationship is affected by the phase of resettlement, by differential exposure and vulnerability to unemployment, and by differential mediating factors.

A study of Hmong refugees in Minnesota illustrates the moderating effect of phase of resettlement on the mental health salience of unemployment (Westermeyer, Vang, & Neider, 1983; Westermeyer et al., 1984). An initial, positive relationship between employment and depressive symptoms among recent arrivals was reversed a few years later. The study's authors suggest one possible explanation. During the first few months after arrival in a resettlement country, sponsorship programs cushioned the refugees against financial hardship, thereby making employment less imperative than it might have otherwise been. At this phase of resettlement, refugees who were working were more exposed to acculturative stresses than their non-employed counterparts, as a result of which they may have experienced correspondingly greater mental health risk. Later, however, when support from social programs ran out, unemployment became a threat to mental well-being (Westermeyer, 1989).

Since financial strain is at its zenith during the earliest years of resettlement (deVoretz, 1995), one might expect unemployment to affect newly arrived immigrants and

refugees more than their longer-established counterparts. Compensatory factors such as family solidarity (Chan, 1987) and trust in a brighter future (Beiser et al., 1993) may, however, cushion individual mental health against the potentially deleterious effects of early unemployment.

Socio-demographic characteristics and mental health

According to most community surveys, women have higher rates of depression than men (Nolen-Hoeksema, 1987; Weissman & Klerman, 1977; Weissman, 1987), and youth have higher rates than the middle-aged or the elderly (Klerman et al., 1985). Although gender and age are significant correlates of refugee mental health, changes in these relationships over time highlight the importance of context in determining mental health salience. For example, Hinton et al. (1997) found no relationship between age and mental health in a group of Vietnamese refugees during the 6-month period following their arrival in San Francisco. Two years post-arrival, however, older refugees had significantly higher rates of symptoms than their younger counterparts. Previous Refugee Resettlement Project (RRP) publications have suggested that, during the early resettlement years, young males constitute the group at highest risk for Major Depression. However, in subsequent years, risk shifts to the elderly, possibly as a result of dislocation from the labor market and increasing social isolation (Beiser et al., 1994; Beiser & Hyman, 1997b; Beiser, 1999).

Education is another sociodemographic variable which tends to show a changing pattern of relationship to mental health. During the first wave of a longitudinal study of Southeast refugees in San Diego, education was positively correlated with depressive symptoms. One year later, the relationship was reversed, possibly because education level now affected the probability of finding and holding a job, and unemployment created mental health risk (Rumbaut, 1989).

The present study investigates a number of specific hypotheses:

1. Throughout the resettlement period, unemployment is both a contemporaneous and predictive risk factor for depression.
2. Throughout the resettlement period, English fluency is a contemporaneous and predictive mental health protective factor.
3. Depression has a feedback effect on both employment and English-speaking ability. Depressive symptoms increase the likelihood of unemployment, and mitigate the probability of learning English at subsequent phases of resettlement.
4. Language facility increases the likelihood of being employed.

5. Associations between age, gender, education and depression are mediated by the effects of employment and language fluency. For example, if elderly refugees appear to be at higher risk for depression than younger, the greater likelihood that young refugees will be working and speaking the host country language should explain this association.

Study methods and measures

Between 1979 and 1981, Canada admitted 60,000 Southeast Asian refugees, about 5000 of whom resettled in Vancouver, British Columbia. The Refugee Resettlement Project, a study of the psychological, economic and social adaptation of these survivors of war, persecution, flight and refugee camp internment began in 1981, with a survey of approximately 1 in 3 of all refugee arrivals 18 years of age and older. The respondents were re-surveyed in 1983, and again in 1991.

The study sample

Because Canada's confidentiality laws prohibited the Federal Department of Employment and Immigration's release of refugee names and addresses, we could not identify a population universe from which to draw a sample. Instead, we used a combination key informant and probability sampling technique suggested by Mendenhall, Ott and Schaeffer (1971) and described in more detail elsewhere (Beiser & Fleming, 1986; Beiser, 1988, 1999). Ninety-five percent of the refugees approached for the study agreed to participate, for a total initial sample of 1348. The sample's demographic profile closely resembled that of the total population of adult refugees resettling in and around Vancouver between 1979 and 1981.

Most of the refugees were young, three quarters of them under age 35. People older than 46 comprised only 13% of the sample. There was a slight preponderance of males over females (58% versus 43%, respectively).

In 1983, we succeeded in locating and re-interviewing 1169 persons, 87% of the original sample. Six hundred and forty-seven members of the original sample participated in a third wave of the survey 1991. Thirty-nine refugees who took part in the third survey had not participated in the second wave. Data for the current study are based on the 608 cases with complete records for all three waves.

In order to examine possible selection bias due to sample attrition, we adopted a two-stage estimation procedure proposed by Heckman (1979). In stage one, a probit model was constructed to estimate the propensity to remain in the follow-up survey. The probit model

considered gender, age at immigration, marital status, ethnicity, educational level, English ability, employment status, and use of Canadian media at wave 1. These variables are important factors affecting SEA refugees' cultural, economic, and psychological adaptation (Beiser, 1999). According to the results of the probit model analyses, being married was the only variable significantly associated with decreased probability of attrition at wave 2. At wave 3, younger age at immigration, being married, and higher levels of initial English proficiency were significantly associated with lower probabilities of attrition.

In stage two, a correction factor, the hazard rate (the inverse Mill's ratio), was computed for each observation based on the probit estimates. The hazard rate was then entered as an explanatory variable in multivariate models for selected outcome variables. The results indicated that the correction factor was not significant and had no substantial influence on the parameter estimates of other variables in the models. There was, however, a slight mental health trend: those who were the least mentally healthy in 1983 were the most likely to agree to a 1991 reinterview (Beiser, Johnson, & Roshi, 1994).

The final sample contained more males (57%) than females. Ages ranged from 26 to 88 years, with a mean of 41 years. About 80% of the sample was married. Most (72%) had been continuously employed during the 5-year period preceding the third wave survey. Of the total sample, 43% were ethnic Chinese from Vietnam; the rest were either ethnic Vietnamese or Laotian.

Measures

Previous multivariate analyses of the RRP's symptom inventory revealed a coaggregation of depressive and somatic complaints which strongly approximated the DSM category of Major Depressive Disorder. This symptom complex forms the basis for the measure of mental ill-health employed in the current study. The measure, the probability of qualifying for a diagnosis of Major Depressive Disorder, was derived by applying Grade of Membership (GOM) analysis to a symptom inventory of 45 items covering depression, anxiety, and somatization. The inventory, which appeared in the mental health section of each of our three surveys, included items from the CES-D (Radloff, 1977), from the Senegal Health Scales (Beiser, 1985; Beiser & Fleming, 1986), and from the DSM-based Diagnostic Interview Schedule (Robins et al., 1981). It also contained culturally based idioms of distress derived from the Vietnamese Depression Scale (Kinzie et al., 1982), as well as from RRP key informant interviews. Bilingual interpreters translated the questionnaires from English into Cantonese, Vietnamese and Laotian. The study used standard translation and back-translation

procedures (Brislin, 1970). Prior to initiating the field work, project staff trained the bilingual interviewers in the conduct of structured interviewing. At each interview wave, respondents were given the choice of being interviewed in English or their mother tongue: most chose the latter.

Grade of Membership (GOM), a form of multivariate cluster analysis, describes symptom clusters as diagnostic prototypes with fuzzy boundaries (Blazer et al., 1988; George, Blazer, Woodbury, & Manton, 1989). A previous publication, detailing the application of GOM to wave 1 RRP data, identified an empirically derived symptom cluster closely resembling the DSM-III-R description of Major Depressive Disorder. The report also described the symptoms making up the measure, the measure's construct validity, its cross-cultural invariance and the fact that culturally based idioms of distress did not cluster to form culturally specific categories of distress, but rather coaggregated with naturally occurring syndromes found among Euroamerican populations[1] (Beiser et al., 1994). A GOM analysis of mental health data pooled from the three longitudinal surveys produced very similar results to those obtained from the wave 1 interviews. As its measure of mental disorder, the current study employs the DSM-like diagnostic cluster derived from the pooled longitudinal data.

After identifying mental health clusters, the GOM program assigns each respondent in each wave of interviewing a statistical value, g_{ik}, indicating the probability that he or she qualifies as a true case of depression. g_{ik} values vary between 0 and 1.0, with a score of 1.0 signifying 100% probability that the respondent in question is one of psychiatry's elusive "classic cases" of Major Depressive Disorder. The higher the g_{ik}, the more likely it is that an individual best fits the prototype of major depression. The prevalence of major depression at each of the periods under study was estimated by calculating the average g_{ik} for Major Depressive Disorder at each wave of the survey, then multiplying this value by the sample n (see Blazer et al., 1988; Beiser et al., 1994).

At each of the interview waves, respondents rated their English language ability on a three point scale of "none", (coded as 1) "little", (coded as 2) and "good" (coded as 3). The validity of this self-reported measure

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[1] GOM analysis produced remarkably similar psychopathological categories in two different ethnocultural groups, one largely Caucasian, mostly native-born Canadians, the second a sample of refugees from Southeast Asia. From 45 depressive, somatic and panic symptoms, GOM analysis identified five common symptom profiles for each group: major depression, depression with panic, subclinical depression, restless agitated, and asymptomatic.

was examined by Chiswick and Miller (1998)[2] and confirmed in a previous publication (Beiser & Hou, 2000).

To define employment status, we asked respondents whether they were currently working and, if not, why they were not working. Using a classification system based on the approach of Statistics Canada, we grouped employment status into three categories — "employed", "unemployed" and "not available". We classified as "employed" only those people who said they were currently working. The "not available" group included full-time students, housewives, women in the latter stages of pregnancy, retired persons, or persons with a health problem. The multivariate analyses in this report utilized two approaches to deal with the "not available" group. First, we excluded anyone categorized as "not available" during any wave of the survey, a procedure which reduced the sample size to 451 (referred to hereafter as the "restricted sample"). Data from a previous publication demonstrating no mental health differences between the "not available" and the "employed" groups at wave 1 (Beiser et al., 1993) suggested a second analytic strategy in which we combined the two into a single group referred to hereafter as the "full sample". The results section focuses on results based on the first procedure, but includes comparisons based on utilizing the two different approaches.

Gender, age, and education appear as control variables in the multivariate models, with gender coded as female = 1, male = 0, and age and years of education recorded as continuous variables, coded as they were reported at the time of initial interview.

Results

This section is in two parts. The first part describes changes in the distribution of English language ability, employment levels and depressive disorder during the 10 years of the study. The second explores specific study hypotheses within the framework of the dynamic resettlement model.

Changes in language fluency, employment, and depressive disorder over 10 years

Over time, the over-all level of English language proficiency improved. In 1981, 17.4% of the respondents

reported that they spoke English well, and 16.3% spoke no English. At wave 2, the proportion reporting good English ability increased to 25.3%, and the proportion speaking no English dropped to 8.4%. Between wave 2 in 1983 and 3 in 1991, the proportion with good language ability continued to increase (from 25.3 to 32.4%). However, the decrease in the numbers of people who spoke no English was minimal (7.7% at wave 3).

Labour force participation increased over the 10-year period. The proportion of refugees who were not available to participate in the labor force decreased from 22.0% in 1981 to 17.6% in 1983, and to 16.4% in 1991. This trend is particularly striking in view of the fact that, as a result of cohort aging, a higher proportion of people were in the post-retirement age group at the end of the study than at the beginning (percentage of people aged 65 and over was 1.2% at wave one, 1.5% at wave two, and 3.1% at wave three). The unemployment level increased from 10.9% at wave 1 to 18.1% at wave 2, but decreased to 8.1% at wave 3. Unemployment rates in the Province of British Columbia during the periods corresponding to the study surveys were 7, 14, and 9.9%, respectively (Statistics Canada, 1984, 1993).

During the 10 years covered by the study, the prevalence of major depression declined. The prevalence rate was 6.48% in 1981, 4.37% in 1983, and 2.27% in 1991. Differences between prevalence levels at each of the three time periods were statistically significant at $p < 0.001$. Correlational evidence of stability suggests that depressive symptoms experienced early in the process of resettlement affected later levels. The Pearson r between waves one and two was 0.27 ($p < 0.01$), and 0.36 between waves two and three ($p < 0.01$). As might be expected the correlation between wave 1 and wave 3 depression levels was smaller than that between contiguous periods; it was, however, still statistically significant ($r = 0.19$, $p < 0.01$).

Investigating the dynamic nature of psychological adaptation

We used a covariance structural equation model to test the study hypotheses. The model explored the relationships between waves 1, 2 and 3 GOM scores; waves 1, 2 and 3 employment status; waves 1, 2 and 3 language fluency; and gender, age and level of education. All correlations between residuals were set to zero. The model estimates were conducted with the EQS Window 5.6 program (Bentler, 1995).

We simplified and improved the initial model by using the Wald test to constrain free parameters that were not statistically significant (Bentler, 1995, pp. 128–131; Bentler & Dijkstra, 1985). The Lagrange Multiplier (LM) test (see Bentler, 1995, pp. 126–128) was also performed to determine whether the model could be improved by freeing previously fixed parameters; how-

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[2] Chiswick and Miller (1998) examined a variety of measures of immigrant language skills, including self-assessed over-all level of skills, speaking and reading skills in specific situations including the work place, and immigrant reports about whether language difficulties were interfering with job opportunities. Information from all these domains was internally consistent. Furthermore, for each of the definitions of language skill employed, the pattern of relationships with important explanatory variables was similar. These results suggest that a single question of over-all ability is satisfactory.
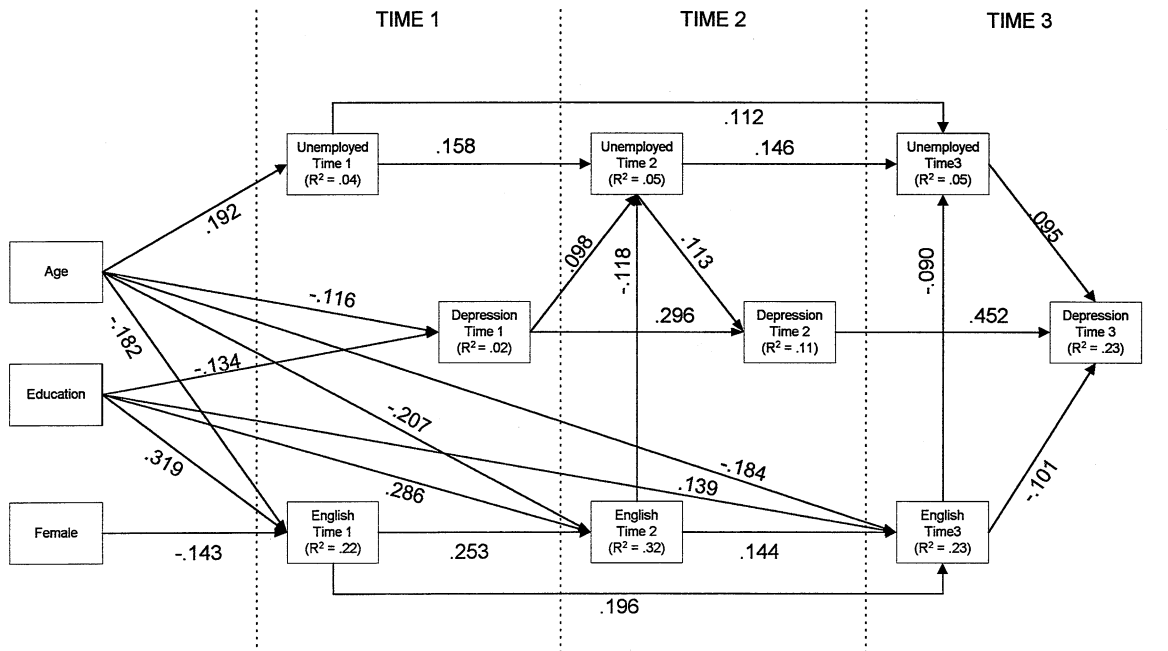
Fig. 2. Structural equation model of resettlement and psychological adjustment of Southeast Asian refugees.

ever, none of the fixed parameters proved either statistically substantial or theoretically meaningful.

Based on the restricted sample, which excluded the "not available" category, the results of the three tests used to estimate model fit were as follows: Chi-square = 51.50, df 40 ($p = 0.105$); Bentler–Bonett normed fit index (NFI) = 0.934; comparative fit index (CFI) = 0.984. [3] These results suggest an excellent fit. A test of the model with the full sample, which lumps together the "employed" and "not available" groups, also produced an excellent fit, with Chi-square = 33.38, df 41 ($p = 0.795$); NFI = 0.973; CFI = 0.992[4].

Fig. 2 diagrams the final model based on the sample which excludes the "not available" category. In the interests of clarity, Fig. 2 omits statistically non-significant relationships among the variables, as well as error terms or correlations among exogenous variables.

Fig. 2 confirms the tendency towards stabilization of mental health risk suggested by the bivariate analyses. Depression levels at wave 1 influenced depression levels at wave 2 which in turn influenced depression levels at wave 3. Education and age were inversely related to

wave 1 depression, suggesting that the best-educated refugees had the least risk of depression and that younger people were at higher risk for depression than their older counterparts.

The study results were partially consistent with study hypothesis one, which posited that unemployment would prove a contemporaneous as well as a predictive risk factor for depression. Although unemployment was significantly related to depression at waves 2 and 3, this effect was not observed at wave 1. In addition, there was no discernable effect of antecedent unemployment on depression at subsequent waves of interview. Hypothesis 2, which predicted that English language fluency would have both a contemporaneous and predictive effect on risk for depression received only partial confirmation, and only at wave 3. Hypothesis 3, suggesting that depression has a feed-back relationship on unemployment and English ability, received only partial support. Depression levels at wave 1 increased the probability of unemployment at wave 2, but had no predictive effects on English language proficiency.

Consistent with hypothesis 4, language fluency was associated with increased probability of employment at waves 2 and 3. The study results were consistent with hypothesis 5, which posited that associations between depression and the demographic variables of age, gender, and education were likely mediated by employment and language fluency. When employment and language fluency were controlled, there were no statis-

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[3] Both NFI and CFI range from 0 to 1, a value larger than 0.90 indicates acceptable fit.

[4] As explained later, the two models had different degrees of freedom because some relationships were significant in one model but not in the other.

tically reliable relationships linking age, education, or gender to waves 2 or 3 levels of depression.

The model also suggested that early experience in the labor market was critical to later chances of being employed. Being unemployed at wave 1 increased the possibility of being unemployed again at wave 3 directly, as well as indirectly through an effect on wave 2 levels. At wave 1, age was a deterrent to employment: older refugees were more likely to be unemployed than younger. Levels of education and gender had no significant direct effect on employment among Southeast Asian refugees.

In similar fashion, initial English language proficiency was an important predictor of later English language ability. Education and age had much stronger effects on English language acquisition than on employment. The strong and positive associations between formal education and language fluency at each wave suggest that the best-educated refugees were the most likely to improve their English ability over time. The negative association between age and language fluency at each of the three waves suggests that the elderly were less likely to learn English than the young. At wave 1, women were less likely than men to have learned English.

Although analyses which excluded the "not available" group (restricted sample) and those which combined them with the "employed" (full sample) yielded similar results on the whole, there were two differences. The first concerned the relationship between depression and employment levels. In contrast to the analyses using the restricted sample, which showed no relationship between Time 1 depression and Time 3 unemployment, results based on the full sample suggested that initial levels of depression had significant direct effects both on Time 3 levels of depression and on employment. The second difference concerned the relationship between language ability, depression and employment. Although analyses based on the restricted sample demonstrated a relationship between language fluency and depression at wave 3, and between fluency and employment levels at waves 2 and 3, these relationships were not observed in the full sample.

In order to examine the possible influences of gender differences in the resettlement stress, we estimated the structure equation models separately for males and females, based on the restricted sample. Some interesting gender differences emerged. First, among refugee women, the standardized regression coefficient from wave 1 to wave 2 depression (0.446) was much stronger than that from wave 2 to wave 3 depression (0.248; the difference between the two coefficients is statistically significant at $p < 0.001$). The opposite was true for refugee men (from wave 1 to wave 2, $r = 0.202$; from wave 2 to wave 3, $r = 0.596$; the difference between the two coefficients is statistically significant at $p < 0.030$). Second, at wave 3, unemployment was associated with increased levels of depression among men, but not among women. In contrast, English language proficiency had an inverse relationship with depression among women at wave 3, a relationship not observed among men. Third, English language proficiency had no significant associations with unemployment among men, but did have a significant and inverse relationship with unemployment levels for women.

Discussion

Against all odds, Southeast Asian refugees were displaying remarkably good socioeconomic and psychological adaptation a decade after they first arrived in Canada.

Consistent with reports from studies among immigrants (Chiswick & Miller, 1995), the Refugee Resettlement Project results suggest that mastery of the receiving society's language increases with duration of residence. Although recognizing that language acquisition is a protracted process can help to correct overly optimistic expectations — both on the part of the receiving society and immigrants themselves — it should not become grounds for complacency. The fact that, a decade after their arrival, almost 8% of the refugees still spoke no English is troubling, and it is apparently not unique to the Southeast Asian experience. A 1980 study found that, on average, 8.5% of all immigrants in the US spoke no English (Jasso & Rosenzweig, 1991).

Lack of language compromises employability and access to services; it also limits options to participate in other important domains such as civic life and mainstream entertainment. It is particularly troubling that precisely those persons most likely to be isolated by circumstance — women, the poorly educated and the elderly — are those least likely to learn English, and thus to risk further isolation.

Southeast Asian refugees experienced high rates of unemployment during the early years of resettlement. However, 10 years after they arrived in Canada, the former refugees were more likely to be working than resident Canadians. The model employed for the study explained relatively little variance in employment levels. Other variables, such as market forces and recognition for credentials acquired abroad — a recognition only grudgingly bestowed by receiving societies (Canadian Task Force on Mental Health of Immigrants and Refugees, 1988) — are probably more powerful determinants of immigrant and refugee employment than the more person-centred variables considered in the current report. Nevertheless, because they sometimes run counter to intuition or to the common wisdom, it is worth considering some of the study results regarding personal factors which did and which did not appear to make a difference.

Contrary to expectation, education did not prove to be an important determinant of employability. One possible interpretation is that, when they first arrived, refugees tended to work at menial jobs where education probably made little difference (Beiser, 1999). However, securing jobs early in the resettlement process, and thereby presumably acquiring relevant Canadian job experience, improved men's chances for subsequent employment. For men, English ability had no apparent effect on employment. In contrast, although past jobs had no significant effect on subsequent employment for refugee women, English ability conferred an advantage. This finding is not without irony. In a previous publication (Beiser & Hou, 2000), we reported that language training programs provided for the refugees at the time of their arrival were primarily directed towards persons deemed most likely to take part in the labor force. As a result of this policy, men were more likely than women to receive English language training. The results of the current study suggest that, since English fluency was a more salient job-securing advantage for women than for men, the policy regarding language training may have been misguided, not only on the grounds of fairness but of practicality.

During their first 2 years in Canada, refugee rates of depression approximated those found in majority culture North American communities (Robins et al., 1984; Meyers et al., 1984). Thereafter, the prevalence of depression among the refugees declined; after a decade, it was far lower than the rates found in most general population surveys. Although theory and common sense would lead one to predict higher mental health risk for refugees than for resident North Americans, selection factors help explain what appear to be counter-intuitive findings. Canadian immigration officers working in the refugees camps of Southeast Asia screened applicants carefully in order to select those most likely to adapt successfully in Canada. The people they chose were probably an exceptionally healthy and resourceful group (Beiser & Hyman, 1997b; Beiser, 1999).

Mental health during the initial periods of resettlement affects subsequent adaptation. The observation that depression in the early years increased the risk of subsequent depression supports Rumbaut's (1985) contention that depression among refugees is "not an acute or transient mood state, but a chronic and persistent affective condition" (p. 165).

There is, and probably always will be, disagreement concerning the relative importance of nature versus nurture in the genesis of depression. RRP gender analyses introduce an intriguing commentary on the debate. The study results showed that, for women, there was a stronger association between waves 1 and 2 depression scores than between waves 2 and 3. The reverse was true for men. The commentary rests in part on the assumption that persistent or recurrent depression suggests predisposition, whereas depression which disappears over time is more likely to be associated with situational factors. At wave 1, rates for depression among the Southeast Asian refugee males were higher than they were among females, a finding which runs counter to almost every other community study of depression reported in the literature (Nolen-Hoeksema, 1987; Weissman & Klerman, 1977; Weissman, 1987). Thereafter, however, the rates for men dropped more rapidly than for women with the result that sex ratios for depression among the Southeast Asian refugees, began, over time, to resemble those found among other populations (Beiser, 1999). In a previous publication (Beiser, 1999), we suggested that, shortly after arrival, men were more likely than women to be subjected to acculturative stress because they were more likely to be in the labor force. Men tended to be charged with the burden not only of providing for family who accompanied them to Canada, but for those remaining at home or in refugee camps abroad. At the beginning of their stay in Canada, women were more sheltered from such stressors than men. With the passage of time and the resolution of initial resettlement stresses, depression rates for men declined. Perhaps, as the risk factors for depression gradually lessened (between 1981 and 1983), predisposition began to play a stronger role in predicting future depression, thereby accounting for the strengthening of association between depression observed between waves 2 and 3 of the study.

A reverse process may have accounted for the female pattern. Predisposition may have played a strong role in accounting for the relatively strong relationship between depression levels at waves 1 and 2, periods when, compared to their male counterparts, the female refugees were relatively protected from acculturative stresses. However, the longer they remained in Canada, the more likely refugee women were to be exposed to the structural factors in society which have helped account for elevated rates of depression among women in general (Weissman & Klerman, 1977; Weissman, 1987). The increasing importance of external factors in the genesis of depression may have diluted the role of predisposition, thereby reducing the strength of association between waves 2 and 3 levels of depression.

Consistent with the "social drift" hypothesis suggesting that psychiatrically disabled persons drift downward on the social ladder (Dohrenwend, 1975), depression during the early phases of resettlement increased the risk of subsequent unemployment, particularly for women, and for people who did not become engaged in the labor force during the earliest years of resettlement. Although the early identification and treatment of psychiatric problems would potentially benefit future mental health as well as socioeconomic adjustment (Hinton et al., 1997), immigrants and refugees tend to avoid or to be ill-served by the formal treatment system (Munroe-Blum,

Boyle, Offord, & Kates, 1989; Beiser, Gill, & Edwards, 1993). However, experience has shown that, although refugees may avoid ''main-stream'' mental health services, they will use and benefit from culturally sensitive care (Kinzie, 1985; Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988).

The decline in unemployment — a potent psychological stressor — probably helps explain the improvement in refugee mental health over time. The fact that unemployment became a risk factor for depression only after the refugees had been in Canada for about 2 years is consistent with results from a study of Hmong in Minnesota, as reported by Westermeyer (1989). Westermeyer's interpretation of the phenomenon may also be applicable to the RRP results. Like the Hmong in Minnesota, the Southeast Asian refugees received financial support during the first year of resettlement. This support curtailed the imperative to find work initially but, when this support was withdrawn, unemployment became a significant stressor.

The possibility that unemployment has different psychological meanings at various phases of resettlement raises an alternative explanation. During the initial resettlement period, unemployment is an experience common to many new immigrants and refugees (McDonald & Worswick, 1997; deSilva, 1997; Swan et al., 1991), whose effects may be cushioned because the condition is considered to be temporary, and not a sign of personal inadequacy (Beiser et al., 1993). During the first 2 years that the refugees were in Canada, unemployment affected their mental health only because it created economic deprivation, and not, as it does in majority culture populations, because of stigmatization and social isolation (Warr, 1982; Beiser et al., 1993). After 2 years of living in Canada, unemployment may have begun to take on a different psychological meaning. Refugees who were not working after the initial period probably felt out of step not only with majority culture norms, but with the over-all success of their fellow refugees.

A decade after the refugees' arrival in Canada, the mental health effect of unemployment was stronger for men than for women, while English ability provided stronger mental health protection for refugee women than for men. Expectations based on traditional gender roles might have created greater stress for unemployed males as compared with unemployed females. On the other hand, refugee women with little English were probably more disadvantaged by this than refugee men, who, by virtue of contacts at work, suffered less risk of social isolation than non-English speaking females (Beiser, 1999).

At wave 1, young refugees experienced a greater risk for depression than their older counterparts. Over time, however, the mental health advantage of age disap-

peared, probably because the reduced likelihood of employment or of achieving linguistic fluency over time balanced off any initial mental health advantages otherwise enjoyed by older persons.

Findings from the present study highlight the dynamic nature of resettlement and psychological adjustment as well as temporal changes in the salience of risk and protective factors. Previous studies have shown that, although pre-immigration traumas create a risk for depressive symptoms immediately after arrival, the effects of post-immigration experience tend to increase over time (Beiser et al., 1989; Chung & Kagawa-Singer, 1993; Hinton et al., 1997; Rumbaut, 1989; Starr & Roberts, 1982; Westermeyer et al., 1984). These findings serve to focus attention on what happens to people as they go about trying to resettle in a new country, a period during which the policies and programs of receiving societies can potentially make a large difference in the lives of the uprooted and dispossessed.

Although, during the early years of resettlement, the effect of pre-migration factors on depression pales in comparison with that of post-migration vicissitude, this may result in part from the efforts of traumatized groups such as refugees to psychologically distance themselves from the past in order to concentrate on the present (Beiser, 1999; Beiser & Hyman, 1997a). Although adaptive in the short and medium term of resettlement, shutting out the past may not be permanently sustainable. The past may ultimately re-emerge and threaten mental health (Beiser, 1999; Beiser & Hyman, 1997a). Program planners must be sensitive to the principle that resettlement is a life-long process, during the course of which needs are constantly changing.

This study's limitations should be noted, among them the disappointing loss of about half the original sample throughout the course of the study. However, the RRP retention rates are higher than those obtained by other investigators (Lewis, Fraser, & Pecora, 1988; Burwel, Hill, & Van Wicklin, 1986) who have studied new settlers, a notoriously mobile population. Furthermore, analyses introduced to adjust for possible attrition bias demonstrated little in the way of significant effects on substantive findings. Mental health is one possible exception: those who fell into the psychologically impaired category at wave 1 were slightly more likely than their healthy counterparts to take part in the wave 3 interviews. The finding has an important implication: since psychiatric disorders tend to be persistent or recurrent conditions, 1991 data may overestimate the amount of refugee psychopathology in the total sample (Edwards, 1994).

The use of measures based on western constructs of mental disorder is open to the challenge that neither constructs nor measures can be assumed to be cross-culturally valid (Weiss & Kleinman, 1988; Obeyesekere, 1985; Littlewood, 1992). However, empirical investiga-

tion supports the utility of the Depressive Disorder construct (Beiser & Fleming, 1986; Beiser et al., 1994; Cheung, Lau, & Waldman, 1980; Kinzie, 1985), and contradicts the notion that, because systems such as the American Psychiatric Association's DSM were developed within a specific cultural context, transposing them to another situation compromises any validity they might have initially possessed (Kleinman, 1980, 1982, 1987). Although culture plays a strong role in the conceptualization and categorization of mental disorders, limits imposed by physiology and imagination probably place boundaries around human experiences of emotional suffering (Beiser, 1999).

Although probably the most prevalent of all mental health problems, depression is not the only mental health concern associated with refugees, and the present study's findings concerning depression cannot be extrapolated to other conditions. For example, Post-traumatic Stress Disorder (PTSD) is an increasingly recognized legacy of the persecution and violence to which refugees have been subjected (Kinzie et al., 1986; Dohrenwend, 1998). Unlike depression, in which post-migration factors may play a more significant etiological role than pre-migration history, pre-migration exposure to trauma is a sine qua non for PTSD. Although post-migration settlement processes may affect the emergence and perpetuation of PTSD symptoms as they do for depression, the relative salience of pre- and post-migration stress, as well as the factors which constitute stress, are probably different in the two disorders.

The statistical model employed in the current study was limited by the circumscribed number of variables included in the analyses. Limiting the number of variables was essential in order to retain clarity in order to explore the utility of the risks and contingencies model proposed. Although the model succeeded in explaining the covaiances among the included variables, it accounted for relatively little variance in the depression and employment variables. Future RRP publications focussing on mental health will expand the exploration of stressors such as discrimination, loneliness, homesickness, and life events, as well as the mitigating role of social and personal resources (Noh, Beiser, Kaspar, Hou, & Rummens, 1999; Beiser, 1988; Beiser & Hyman, 1997a; Beiser et al., 1993, 1989). RRP publications addressing labor force activity will examine the role of factors such as marital status, presence of children, existence of ethnic community and social network.

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