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# **UMI**

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FREQUENCY OF SELF-REINFORCEMENT, PERCEIVED CONTROL,  
AND DEPRESSION IN ASIAN AND CAUCASIAN COMMUNITY-  
DWELLING ELDERS

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION  
OF THE UNIVERSITY OF HAWAII IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

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By

Shyh Shin Wong

Dissertation Committee:

Elaine M. Heiby, Chairperson  
Sarah W. Bisconer  
Joan P. Dubanoski  
Velma A. Kameoka  
Anthony M. Lenzer  
Authur W. Staats

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Dedicated to my parents and teachers

## ABSTRACT

This study was concerned with the extent to which behavioral competencies of self-reinforcement and perceived control covary or predict depression concurrently and at a later point in time. It was also concerned with whether there are significant differences between Asian American and Caucasian American elders in terms of depression, frequency of self-reinforcement, and perceived control. The study found no significant differences between Asian American and Caucasian American elders in depression mean scores. The results showed that a lower frequency of self-reinforcement was significantly associated with a higher level of depression concurrently and five months later for both Asian and Caucasian participants. Asian elders reported significantly lower self-reinforcement scores than Caucasian elders. In contrast, low perceived control was significantly associated with higher level of depression concurrently and five months later for Caucasian elders only. Asian elders reported significantly lower perceived control scores than Caucasian elders. The role of behavioral competencies in accounting for concurrent and future depression scores and the ethnic subsample differences in self-reinforcement and perceived control scores are discussed.

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CHAPTER 1  
INTRODUCTION

Interest in the study of depression among the elderly has been fueled partly by the growing increase in this population and partly by recent studies of prevalence rates. It has been found that the number and proportion of Americans over 65 is accelerating rapidly and will continue to increase over the next four decades (Ferrini & Ferrini, 1993). According to the American Psychological Association (APA; 1993), nearly 5 million individuals age 65 and above suffer from serious and persistent symptoms of depression, and over 1 million suffer from major depression.

Due to the seriousness of the problem and subsequent societal and individual consequences involved in geriatric depression, the APA Taskforce for gerontology research (1993) has emphasized that major research initiatives are needed in the study of geriatric depression.

The present study uses some of the data archived by one such initiative, the Cross-Ethnic Elder Depression and Life Satisfaction (CEDL) Project. The purpose of the CEDL project is to identify the behavioral competencies, health factors, and environmental conditions that are predictive of depression and life satisfaction among the elderly living in the communities

of Hawaii. Data for the CEDL project were collected at two points in time, for both prediction and test-retest reliability purposes. The data were collected using the revised version of the Elder Life Adjustment Interview Schedule (ELAIS; Schlatter, Heiby, Dubanoski, Kameoka, & Denney, 1993; Dubanoski, Heiby, Kameoka, & Wong, in press). The original version of the ELAIS (Schlatter et al., 1993) contained 234 items in 14 sections. Thirteen sections were created from commonly used self-report scales, modified for the purpose of interviewing elders. The remaining section was designed to measure demographic information. Details of the modifications of the original ELAIS (Dubanoski et al., in press) will be outlined in Chapter 4.

#### Purpose of Study

The purpose of this study is twofold. The first purpose is to determine the extent to which behavioral competencies of self-reinforcement and perceived control covary or predict depression scores among elderly individuals concurrently and at a later point in time. The second purpose is to examine possible differences between Asian American and Caucasian American elders in reported depression, self-reinforcement, and perceived control scores.

The results of this study will guide future research efforts in designing and testing culturally sensitive interventions to prevent as well as treat

depression. In the area of assessment, cross-cultural differences may also suggest the need for different norms and cutoff scores in the assessment and diagnosis of depression, self-reinforcement, and perceived control. Before reviewing the relevant literature for this study, definitions of self-reinforcement and perceived control, as well as research questions guiding this study will be examined first.

#### Definitions of Self-Reinforcement and Perceived Control

Self-reinforcement has been defined as the self-administration of reinforcers contingent on one's own behavior (Kratowill, 1984). Others define self-reinforcement skills to also include self-administration of noncontingent positive events (Staats & Heiby, 1985). Self-controlled reinforcement is often distinguished from environmentally controlled reinforcement (Heiby, 1983b).

Self-reinforcement is one of the three components in Rehm's (1977) self-control theory of depression. The self-control theory suggests that depressed people show skill deficits in self-monitoring, self-evaluation, and self-reinforcement. According to Rehm, self-reinforcement consists of three basic components, namely, (a) establishing response criteria for reinforcement; (b) discriminating the response when it occurs; and (c) administering self-reinforcement either overtly or covertly. According to Staats and Heiby

(1985), self-control also includes noncontingent self-administration of affective and directive stimuli.

The relation between self-reinforcement scores and depression has been demonstrated among young and middle aged adults (Heiby & Staats, 1990). Measures of self-reinforcement (e.g., Heiby, 1983a) assess both Rehm's (1977) and Staats and Heiby's (1985) proposed self-controlled reinforcement skills. The present study evaluated the generalizability of these findings to older adults. The relation between self-reinforcement and depression will be furthered addressed in Chapter 2.

In contrast to the limited work done in self-controlled reinforcement, an enormous amount of research has been done based on constructs related to the perception of personal control (Burger, 1992). Examples of constructs that have been studied which have relevance to perception of personal control include locus of control (Rotter, 1966, 1975, 1990, 1992), attributional style (Abramson, Seligman, & Teasdale, 1978; Peterson & Stunkard, 1992), self-efficacy (Bandura, 1977; 1992), and perceived control (Ireys, 1979).

In varying degrees, these constructs include perception of control over behaviors and/or outcomes that affect mood, including depression. Perceived control deals with the degree of control one perceives having over life events. Since this study utilized

Ireys' Perceived Control Scale (Ireys, 1979), his conceptual definition will be used to discuss the nature of perceived control as a theoretical construct. Ireys was interested in what he called "situationally specific perceived personal control" (abbreviated Perceived Control; 1979).

According to Ireys (1979), "situationally specific perceived personal control is defined as the felt capacity to cause some desired change in the immediate situation" (p. 51). Ireys intended that the four areas of power, predictability, choice, and control be the theoretical constructs measured by his Perceived Control Scale. Ireys later (1979) divided the items into three subscales of control: the cope subscale (containing items related to the perception of predictability and contingencies), the choice subscale, and the power subscale. Perceived predictability can be defined as the extent one perceives one has predictability -- how well a person can determine future events. Perceived contingency can be defined as the perception of a response-outcome relationship in one's behavior and the environmental outcome -- whether the environmental outcome is seen as the result of one's behavior. Choice can be defined as the perception of different options or means to an end -- how many options a person believes he/she has in attempting to master his/her environment. Power can be defined as power over others and



environment -- how much environmental influence a person's behavior has, including control over other people's behavior and control over outcomes in the environment. Therefore, it seems that perceived control is a more heterogeneous and broader construct than self-control or self-reinforcement. It also appears that there may be some overlap between perceived control and self-reinforcement skills. This is because perceived control may include self-control over events/situations that may or may not involve self-administered reinforcers or punishers.

The definition of perceived control also appears to overlap with the other constructs involving the concept of personal control. First, perceived control is related to locus of control of reinforcement. The idea of locus of control of reinforcement is derived from Rotter's social learning theory. According to Rotter (1954, 1955, 1960), a reinforcing event leads to an expectation that a particular behavior will, in the future, result in the same reinforcement. Once reinforcement is no longer forthcoming, such acquired expectations about the contingencies of behaviors and their consequences will be unlearned, i.e., decreased or completely extinguished. The expectancy variable is a function of two independent determinants: (a) the specific expectancy based on past experience with the particular behavior in a particular situation resulting

in a particular consequence; and (b) a generalized expectancy which has become generalized over a broad range of similar situations, behaviors, and consequences.

Rotter (1966) suggested that there are two types of generalized expectancies: (a) internal locus of control, where people will perceive a link between their own actions and the reinforcements they receive; and (b) external locus of control, where people will almost fatalistically be resigned to thinking that nothing they do will affect what happens to them. It appears that Ireys' (1979) definition of high perceived control may include components defined by Rotter as internal locus of control. Similarly, Ireys' definition of low perceived control may include components defined by Rotter as external locus of control.

Second, attributional style may be related to perceived control (Abramson, Seligman, & Teasdale, 1978; Peterson & Stunkard, 1992). The attributional theory posits that a causal interpretation of uncontrollable events predicts when depression follows uncontrollable events (Abramson, Seligman, & Teasdale, 1978; Peterson & Stunkard, 1992). According to the reformulated theory, there are six types of attributions: internal, external, stable, unstable, global, and specific.

The theory holds that people who explain negative events according to these three types of attributions are most vulnerable to depression: (a) internal attribution in that

the person attributes the cause of the negative event to his/her own fault (e.g., attributes failures to personal inadequacies, rather than external factors such as environmental resources); (b) stable attribution in that the attribution made will remain even after the negative situation or event has passed (e.g., attributes failures to fixed personality factors rather than unstable or changable factors); (c) global attribution in that the attribution made is generalized to other areas of the person's life (e.g., attributes failures to sweeping flaws in personality rather than specific factors which reflect limited areas of functioning) (Abramson, Seligman, & Teasdale, 1978; Barlow & Durand, 1995). In this case, Ireys' low perceived control may be related to the attributions of internality, stability, and globality for negative events. In contrast, Ireys' high perceived control may be related to the attributions of internality, stability, and globality for positive events.

Third, the relation between perceived control and self-efficacy (Bandura, 1977; 1992) can also be examined. Bandura (1977) distinguished between efficacy expectancies and outcome expectancies. An efficacy expectation (i.e., self-efficacy) is the "conviction that one can successfully execute the behavior required to produce the outcomes" (Bandura, 1977, p. 193). In other words, self-efficacy is expectancy regarding one's own competence to perform the behavior needed to influence outcomes. An outcome expectancy is a "person's estimate that a given behavior will lead to

certain outcomes" (Bandura, 1977, p. 193). In other words, outcome expectancy is expectancy regarding the consequences of one's own behaviors. It appears that there is some overlap between Ireys' (1979) perceived control's power component and the definition of self-efficacy. In addition, it appears that there is overlap between Ireys' perceived contingency (together with perceived predictability) components of perceived control and the definition of outcome expectancy.

Besides Ireys' definition of perceived control, other definitions of perceived control have also been used (e.g., Cohen-Mansfield, 1990). Details of relations between perceived control as defined by other researchers will be examined in Chapter 2. It is also important to note that not all definitions related to perceived control have been studied as predictors of depression, which makes this study even more crucial.

To summarize, in this section, definitions of self-controlled reinforcement or simply self-reinforcement and perceived control, and related theoretical constructs have been examined. The examination suggests that the construct of self-reinforcement is more specific than that of perceived control. Self-reinforcement as defined by Staats and Heiby (1985) refers to skills involved in the self-administration of both contingent and noncontingent positive events.

In contrast, the construct of perceived control proposed by Ireys (1979) is broader because it describes

the perception of control over events affecting mood as including predictability, contingency, choice, and power. It was argued that Ireys' construct of perceived control subsumes similar constructs, such as locus of control (Rotter, 1954, 1955, 1960).

The above discussion focused on the conceptual similarities and differences between self-reinforcement and perceived control. This study examines the possible unshared or unique contribution of self-reinforcement and perceived control in the prediction of depression among the elders. Since the constructs of self-reinforcement and perceived control were developed in United States's predominantly western and individualistic culture, this study also examines these two constructs in a minority group (i.e., Asian) whose cultures traditionally have been considered eastern and collectivistic. The details of cross-cultural variations will be examined in Chapter 2.

#### Research Questions and Hypotheses

Following is a listing of the research questions and hypotheses addressed by this study:

1. To what extent do frequency of self-reinforcement and perceived control uniquely predict depression concurrently and at a later point in time for the total elder sample, a subsample of Asian American participants, and a subsample of Caucasian American participants? It is predicted that both frequency of

self-reinforcement and perceived control uniquely contribute to the prediction of depression in the total sample, Asian American subsample, and Caucasian American subsample concurrently and at a later point in time.

2. Do significant differences exist between Asian American and Caucasian American groups in terms of depression, frequency of self-reinforcement, and perceived control scores? It is predicted that there are significant differences between Asian American and Caucasian American subsamples in depression, frequency of self-reinforcement and perceived control. Specifically, it is predicted that the Caucasian American subsample on average will score significantly higher than the Asian American subsample in terms of frequency of self-reinforcement, and perceived control. However, the past research and current theories do not unequivocally support a prediction of the direction of significant difference between Caucasian American elders and Asian American elders. In other words, if a significant difference between Caucasian American elders and Asian American elders in depression is found in this study, no prediction will be made based on past research and current theories about which ethnic group will have a significantly higher mean depression score.

CHAPTER 2  
LITERATURE REVIEW

The purpose of this chapter is to review the relevant studies on depression, self-reinforcement, and perceived control, especially among the elderly. Cross-cultural variations in depression, self-reinforcement, and perceived control will also be examined.

Depression Among the Elderly

Klerman and Weissman (1989) summarized four findings of several recent, large epidemiologic and family studies on the rates of major depression in United States, Sweden, Germany, Canada, and New Zealand. The first finding is an increase in the rates in the cohorts born after World War II. The second finding is an increase in the rates for all ages between 1960 and 1975. The third finding is that there is a persistent two to three times higher risk among women than men across all adult ages. The fourth finding is there is a persistent two to three times higher risk in first-degree relatives as compared with controls.

Epidemiological surveys also found that between five and ten percent of adults in the United States suffer from severe unipolar depression in any given year, and three to five percent suffer from mild forms of the disorder (Kessler et al., 1994; Regier et al., 1993).

Prevalence rate estimates of depression among the elderly vary depending on whether measurement is based on symptom checklists or diagnostic interviews (Feinson, 1987; Henderson & Hasegawa, 1992; Leaf et al., 1988) and whether the participants of the studies are medical outpatients or inpatients (Katon & Schulberg, 1992). Prevalence studies based on symptom checklists have found rates that range from 10% to 45% (Henderson & Hasegawa, 1992). In contrast, prevalence studies based on diagnostic interviews have found rates that range from 2% to 20% (Henderson & Hasegawa, 1992). It has been suggested that symptom checklists yield rates considerably in excess of 10%, while diagnostic interviews provided rates of less than 10% (Feinson, 1987). The excess rate is probably due to the inclusion of somatic symptoms on most checklists (Henderson & Hasegawa, 1992) and the stricter criteria used in the diagnostic interviews. Moreover, it is generally accepted that a diagnosis of clinical depression has to be done with a diagnostic interview and not with a symptom checklist. Prevalence studies have also suggested that major depression occurs more frequently in medical inpatients (10-14%) than in outpatients (5-10%) (Katon & Schulberg, 1992).

Prevalence rate estimates of depression among the elderly also vary depending on whether the studies were community-based or residential-based (Katon, 1994).



Katonia (1994) reported that the recent consistent trend of these studies was the finding of considerably higher levels of depression in residential settings than in the community, and suggested that this is a reflection of differences in admission practices to such residential care over the past 20 years.

To summarize, depression among the elderly is quite similar to the rates found in adults regardless of the way it is measured or the sample on which it is measured. Nevertheless, it has been suggested that the elderly are at more risk than the young for developing mental disorders such as depression (Uba, 1994).

In the next two sections, literature on the frequency of self-reinforcement, perceived control, and cross-cultural membership as risk factors for depression will be reviewed.

#### Frequency of Self-Reinforcement

As mentioned in Chapter 1, self-reinforcement can be defined as the self-administration of reinforcers contingent on one's own behavior (Kratochwill, 1984) as well as noncontingent positive events (Staats & Heiby, 1990). Also mentioned in Chapter 1 is the fact that self-reinforcement is one of the three components in Rehm's (1977) self-control theory of depression. The self-control theory suggests that depressed people show deficits in self-monitoring, self-evaluation, and self-reinforcement.

Since Rehm's initial work, the concept of self-reinforcement has been incorporated into the more recent multivariate theory of depression, known as paradigmatic behaviorism's theory (Staats & Heiby, 1985; Heiby & Staats, 1990). Paradigmatic behaviorism's theory considers self-reinforcement as including self-speech (overt or covert) that may elicit affect, reinforcement, or directive stimuli (ARD; see Staats, 1968). The concept of self-reinforcement can be considered thus as self-administered affective-reinforcing-directive stimuli (SARD). This theory hypothesizes that low frequency of self-reinforcement places an individual in a position where external sources of reinforcement not directly under the control of the individual become more important in affecting mood. There is some evidence supporting the effect of deficit self-reinforcement skills upon depression (Heiby, 1981, 1983b, 1983c; Heiby, Campos, Remick, & Keller, 1987). Heiby and her colleagues did a series of studies demonstrating the positive association between frequency of self-reinforcement and depression. The first three studies (Heiby, 1981, 1983b, 1983c) involved undergraduates as participants with mean ages ranging from 20.3 years to 21.2 years. The fourth study (Heiby, Campos, Remick, & Keller, 1987) included 30 outpatients and 15 inpatients with a mean age of 37.9 years ( $SD = 12.71$ , range from 20 to 68).

Heiby's first study (1981) provided preliminary evidence for the hypothesis that low frequency of self-reinforcement is a correlate of depression. The results showed that depressed undergraduates self-reinforced (measured by a self-reinforcement attitude questionnaire) less frequently than nondepressed undergraduates. The depressed undergraduates also self-praised less often and at a lower magnitude than nondepressed undergraduates during the experiment. In Heiby's second study (1983b), she asked 81 nondepressed undergraduates with a tendency to engage in either a high or low frequency of self-reinforcement to provide retrospective reports of incidents of depression as well as decreases in environmentally controlled sources of reinforcement for the previous month. She found that undergraduates who engaged in a relatively low frequency of self-reinforcement and who reported a major decrease in environmentally controlled reinforcement were more likely to become depressed than undergraduates in other conditions. Heiby's third study (1983c) evaluated the performance of 80 undergraduates identified as exhibiting either a high or low frequency of self-reinforcement on a 20-item anagrams task. The undergraduates' responses were reinforced by the experimenter on 20% of the items, 80% of the items, 20% of the first 10 items and 80% of the second 10 items, or 80% of the first 10 items and 20% of the second 10

items. The results showed that undergraduates who exhibited a low frequency of self-reinforcement reported a greater frequency in depressed mood following a decrease in environmental reinforcement than those who exhibited a high frequency of self-reinforcement. Finally, Heiby, Campos, Remick, & Keller (1987) evaluated neuroendocrine dysfunction and self-reinforcement in 45 patients diagnosed with Major Depression without psychotic features according to the DSM-III criteria and Depressive Disorder, Endogenous Subtype according to the Research Diagnostic Criteria. They found that depressed participants who yielded normal suppression on the dexamethasone suppression test (DST) showed a tendency to engage in low self-reinforcement, whereas those with (abnormal) nonsuppression on the DST did not exhibit any differences between low or high self-reinforcement groups. This suggested that low self-reinforcement may account for depression in individuals diagnosed with endogenous depression who do not demonstrate neuroendocrine dysfunction.

Furthermore, one unpublished study (Heiby & Hays, 1982) on college students (mean age = 20.63 years) revealed the following findings: (a) a lower frequency of self-reinforcement is associated with a greater frequency of self-punishment; (b) a lower frequency of self-reinforcement is associated with relatively higher

levels of depression; and (c) a greater frequency of self-punishment is associated with higher levels of depression.

Given the prevalence rates of depression among older adults, it will be important to establish the relevance of the low frequency of self-reinforcement (LFSR) depression hypothesis in this population (age of 60 years and above) who commonly face losses beyond their control (e.g., death of a friend or spouse). Recently, a pilot study validating the use of an interview schedule for multiethnic gerontology research provided some preliminary evidence for the hypothesis (Schlatter et al., 1993).

In their study, Schlatter et al. interviewed 50 participants (22% male, 78% female), recruited at Golden Age clubs and apartment complexes for the elderly in Hawaii. Fifty percent of the participants were Caucasian, 24% Japanese, 20% Chinese, 2% Filipino, and 4% of other ethnic origin. The mean age of the participants was 73.2 years ( $SD = 7.559$ ). One of the findings of the study was that depression was negatively correlated with self-reinforcement skills ( $r = -.369$ ;  $p < .05$ ). Depression was measured by the Beck Depression Inventory (coefficient alpha = .804) and self-reinforcement was measured by using 10 interview items (coefficient alpha = .634) derived from the long version of the Frequency of Self-Reinforcement Questionnaire

(FSRQ), which has 30 items (Heiby, 1983a). In this previous study, the coefficient alpha for the shortened FSRQ in this study was comparable to a previous unpublished study with college students (the coefficient alpha for the shortened FSRQ at the first administration was .648 and for the second administration was .697 (V. A. Kameoka & E. M. Heiby, personal communication, February 25, 1994).

In sum, there is some evidence supporting the association between depression and self-reinforcement in young adults but only preliminary evidence in older adults. Therefore, there is a need to further examine the role of self-reinforcement among the elderly and whether the role differs across different ethnic groups. Another variable related to depression is perceived control of reinforcement which will be reviewed in the following section.

#### Perceived Control

Of the list of personal control variables mentioned in Chapter 1, perceived control can be considered the least studied and understood despite its relevance to elders who can lose control of various aspects of their lives. Furthermore, the operational definition of the construct of perceived control has varied across studies. As a result, it is not surprising that the relation between perceived control and depression has

not been clearly established. Some of the findings are reviewed below.

Myers and Diener (1995) commented that numerous studies seem to validate the association between happiness and four psychological variables; namely, a sense of personal control, self-esteem, optimism, and extraversion. Loss of control has been found to be related to impaired physical and mental health, decreased personal and social well-being, and increased rates of mortality (Slivinske & Fitch, 1987). However, no studies have been found examining the relation between loss of control and depression.

It has been suggested that "judgments of control may be critical to understanding the nature of the relation between causal perception and depression" (Brown & Siegel, 1988, p. 317). More specifically, Brown and Siegel demonstrated that controllability judgments can interact with other causal attributions in predicting depression. They found that in their prospective study of stress and well-being in adolescence, internal, stable, and global attributions for negative events attributed to uncontrollable causes were positively related to increases in depressive symptoms. In contrast, internal and global attributions for negative events attributed to controllable causes were negatively related to increases in depressive symptoms. This means that only when negative events

were attributed to uncontrollable causes did internal, stable, and global attributions predict greater levels of depression. When negative events were attributed to controllable causes, internal, and global attributions were associated with lower levels of depression.

Three studies have investigated perceived control among elder adults. Perceived control and reinforcement have been studied in relation to depression and satisfaction (Cohen-Mansfield, 1990). The participants in Cohen-Mansfield's study were 137 elderly people drawn at random from residence lists of two upper- and lower-middle-class urban neighborhoods in North Israel. The participants were interviewed twice: first concerning reinforcements, control, and satisfaction in the present; and then concerning the same variables in the past (i.e., the participants' middle-aged years). The interview consisted of demographic questions and a questionnaire. The questionnaire included (a) the extent to which the interviewee possessed the reinforcement or experienced the reinforcing events in each of five domains of life (food, personal hygiene, social activities, leisure activities, and employment); (b) the personal value and importance of these reinforcements to the interviewee; (c) the extent to which the interviewee felt he/she has had control over obtaining the reinforcements; and (d) the interviewee's level of satisfaction from each of these domains of life.



Cohen-Mansfield found that levels of reinforcement and levels of control are significant predictors of satisfaction in the four domains of personal hygiene, social activities, leisure activities, and employment. In the fifth domain of food, only the level of reinforcement was a significant predictor. Similar results were obtained for retrospective recall. That is, past levels of reinforcement and past levels of control are significant predictors of past satisfaction in all five domains. Finally only levels of reinforcement were found to be significant predictors of depression and satisfaction.

In a study using the Perceived Control Scale (PCS; Ireys, 1979), Slivinske and Fitch (1987) examined the effectiveness of control enhancing interventions on a sample of 63 residents living in three retirement communities in Ohio. These participants were randomly selected from resident listings and randomly assigned to intervention (n = 29) and control (n = 34) groups. Results of the control enhancing interventions indicated that intervention participants experienced increases in their perceived level of control and overall functioning while control participants did not. This implies that elderly who have low perceived control may have low overall functioning which can include risk for depression. Moreover, it also implies that perceived

control can be learned and thus important in prevention and intervention.

In a controlled field experiment, Schulz (1976) assessed the effects of increased control and predictability upon the physical and psychological well-being of institutionalized elders. The participants were 36 retired women and 6 retired men living in a private, church-affiliated retirement home in North Carolina. The participants ranged in age from 67 to 96 years old with a mean age of 81.5. Participants in three of four conditions were visited by college undergraduates under varying contingencies, while participants in the fourth condition were not visited and served as a baseline comparison group. Participants in the "control" condition could determine both the frequency and duration of visits they received. Participants in the "predict" condition were informed when they would be visited and how long the visitor would stay, but no control over the time and duration of visit. Participants in the "random" condition were visited on a random schedule. The results showed that "predict" and "control" groups were significantly superior on indicators of physical and psychological status, as well as on level of activity when compared to the "random" and "no treatment" groups. In general, the differences between the "control" and "predict" groups were not significant. Similarly, differences between the

"random" and "no treatment" groups were in general not significant. This suggests that predictability is an important component of perceived control.

To summarize, control or perceived control has been examined in a number of studies. Brown and Siegel (1988) demonstrated that causal attributions interacted with the controllability of causes in predicting depression. Cohen-Mansfield (1990) found that perceived control is a significant predictor of [life] satisfaction in community-dwelling elders. Slivinske and Fitch (1987) demonstrated that control enhancing interventions can increase perceived level of control and overall functioning in community-dwelling elders. Schulz (1976) found that predictable and controllable positive events have a powerful positive effect on the well-being of the institutionalized elders.

These previous findings suggest that perceived control plays an important role in contributing to positive indicators of health (e.g., wellness, life satisfaction) among the elders. Although less clear, the findings also seem to suggest the possibility of influence by perceived control on negative indicators of health (e.g., depression) among the elders. Therefore, it is important to examine the possibility of this relation between perceived control and depression.

Cross-Cultural Variations in Depression, Self-  
Reinforcement, and Perceived Control

Given the suggested effects of self-reinforcement and perceived control of reinforcement upon depression, it will be interesting to examine these effects across different cultures. The focus of this section is to examine the possible influence of individualist and collectivist cultures on self-reinforcement, perceived control, and depression.

Individualist cultures tend to be more predominant in countries like United States, Britain, and Australia. In contrast, collectivist cultures tend to be predominant in Africa, Asia, and Latin America (Triandis, McCusker, & Hui, 1990). In individualist cultures, people are thought to put their own needs first above the needs of others, value personal rights over societal duties, and emphasize values that promote individual versus societal goals. In contrast, in collectivist cultures, people are thought to subordinate their own needs to those of their social groups, value societal duties over personal rights, and emphasize values that promote welfare of their social groups.

People in some collectivist cultures, such as the Chinese and Japanese, are thought to believe in the humbleness of human efforts when compared to the forces of ziran (Chinese word for nature), tian (Chinese word for heaven), ming (Chinese word for destiny or fate),

shen (Chinese word for gods) or kami (Japanese word for gods). Moreover, the group often has the final say in many decisions and behaviors of a person in that group. Both the Chinese and Japanese societies have rigid social hierarchies in which one must function. Consequently, it is highly plausible that people who believe in these concepts tend to have low perceived control over their lives. In sum, individuals living in collectivistic cultures may exhibit less personal control than those in individualistic cultures.

Cultural differences may also be expected in self-reinforcement habits. Markus and Kitayama (1991) differentiate between a "construal of the self as independent and a construal of the self as interdependent" (p. 224). "Construal of self as independent" means understanding, explaining, and seeing the concept or construct of self as relatively independent of other people and things in the environment. Like people in individualistic cultures, people who construe their selves as independent tend to value separateness, individuality, uniqueness, attending to self, and independence (Markus & Kitayama, 1991). In contrast, like people in collectivist cultures, people who construe themselves as "interdependent" tend to value connectedness, conformity, attending to others, fitting in, and harmonious interdependence (Markus & Kitayama, 1991).

An example of "construal of self as interdependent" is the conception of self in traditional Chinese culture. For some Chinese, especially among the older generations, there is a distinction between a ta wo (greater self) and a hsiao wo (smaller self) (Hsu, 1985). Ta wo typically means extending the concept of self to (a) a group, for example, family, community, society, country, or world; and (b) a longer time frame than one's own life-span, for example, ancestors and descendants. Although the Japanese do not have specific words equivalent to ta wo and hsiao wo, they also tend to define their self identity in terms of the groups in which they are embedded. The Japanese word for self, jibun, refers to "one's share of the shared life space" (Hamaguchi, 1985). According to Hamaguchi (1985), for the Japanese, "a sense of identification with others (sometimes including conflict) pre-exists and selfness is confirmed only through interpersonal relationships....Selfness is not a constant like the ego but denotes a fluid concept which changes through time and situations according to interpersonal relationships" (p. 302). Hence, for the Japanese group identity is stressed and valued more and given more priority than individualistic self identity.

Not surprising, given these conceptualizations of self, being individualistic is often considered as a "selfish" behavioral deficit in these Asian cultures.

Therefore, different conceptualizations of self in the individualistic versus collectivist cultures suggest that individuals who are socialized in collectivist cultures tend to devalue the idea of self-administered reinforcement, which in turn may suggest that they tend to exhibit less self-reinforcing behaviors compared to the individuals who are socialized in individualist cultures.

The empirical evidence of individualistic versus collectivistic differences in general has been provided in both cross-national studies and studies comparing different ethnic groups in America (Hui, 1988; Markus & Kitayama, 1991; Triandis et al., 1985; Triandis et al., 1990). With respect to depression, variation across countries and ethnic groups has also been found, both in level of depression, as well as in manifestation of depression.

In terms of differences in the level of depression, a cross-national study comparing college students on the Zung Self-Rating Depression Scale (SDS) (Crittenden, Fugita, Bae, Lamug, & Lin, 1992) provided some evidence of cross-cultural differences. The study compared college students in the United States ( $n = 262$ , mean age = 20.8 years,  $SD = 2.5$  years), Korea ( $n = 155$ , mean age = 21.3 years,  $SD = 1.7$  years), Philippines ( $n = 160$ , mean age = 18.2 years,  $SD = 1.8$  years), and Taiwan ( $n = 376$ , mean age = 20.2 years,  $SD = 1.3$  years). Crittenden

and her colleagues found that the mean scores on the SDS varied significantly across countries, with Korean students having the highest mean, followed by Filipino students, American students, and Taiwanese students respectively. Moreover, there were significant differences between countries in symptomatic manifestations even after controlling for between-country differences in response set and overall level of symptoms. One exception to the cross-cultural variation is the nonsignificant results reported in two unpublished studies using college students in Hawaii as participants (Heiby & Hays, 1982; Heiby & Pacheco, 1982). However, these two studies used samples that are not cross-national.

In terms of differences in the manifestation of depression, Crittenden et al. (1992) found significant differences between subscale scores on the SDS's somatic subscale, affective subscale, and psychological subscale for college students across United States, Korea, Philippines, and Taiwan. In comparing Chinese in the United States as well as Chinese in Taiwan with Caucasian Americans, Kleinman (1977) found that depressed Chinese reported more somatic symptoms than psychological symptoms. This difference in terms of manifestation of depression has also been shown in 508 college students (309 Japanese, 87 Chinese, and 112 Caucasians) enrolled at the University of Hawaii



(Marsella, Kinzie, Gordon, 1973), based on the Zung Self-Rating Depression Scale. All Japanese and Chinese participants in the study were third-generation in America. Unfortunately, the ages of the participants were not reported. The results showed that the Chinese reported more somatic complaints, Japanese reported more interpersonal complaints, and Caucasians reported more existential complaints. As a suggestion of the possible effects of acculturation, in a separate study, differences were not only found between Caucasians and Japanese, but also between Japanese-Americans and Japanese-Nationals in their word associations to the equivalent words of depression and yuutsu (Tanaka-Matsumi & Marsella, 1976). The Japanese-Nationals associated more external referent words, such as "rain" and "cloud," to the word yuutsu. In contrast, both Japanese-Americans and Caucasians-Americans associated predominantly internal mood state words, such as "sad" and "lonely," to the word depression.

Various explanations have been offered to account for the differences in level and manifestation of depression. With respect to the differences in level of depression, two explanations have been given (Crittenden et al., 1992). First, the true prevalence rates of depression may be higher in certain countries and cultures than in others. Second, certain contributing factors like "depressive" attributional style may be

culturally approved in some cultures (e.g., Korean). With respect to the different patterns of manifestation of depression, Marsella (1985) claimed that they can be explained by understanding the concept of self as defined by a certain culture. Especially, the self can be defined by its perceived dimensions or extensions. For example, the concept of self for an Asian may be more extended and includes more aspects of his or her environment in comparison to that of a Caucasian. Even though the explanations for differences in terms of level and manifestation are discussed separately, in actuality, they may be related in complex ways. Differences in level and manifestation of depressive symptoms across cultures support the evaluation of the possible differences in hypothesized correlates including perceived control, self-reinforcement, and depression between the Asian and Caucasian participants in this study. However, available theories and research findings do not support an unequivocal direction of differences in level of depression between Asians and Caucasians.

Given the content of the items on the Frequency of Self-Reinforcement Questionnaire (FSRQ) (Heiby, 1983a, 1986), the self-reinforcing behaviors as measured by the FSRQ appear to be more acceptable in Western cultures than in Asian cultures. For example, "I feel that I have a lot of good qualities." Therefore, it is

predicted that Asians as a group, on average, may score lower on the FSRQ in comparison to the Caucasians as a group. One unpublished study (Heiby & Pacheco, 1982) did not find any significant differences among Caucasian, Japanese, and Chinese American college students living in Hawaii (mean age = 20 years, S.D. = 3.57 years, range = 18 - 48 years). One possible explanation for the obtained results is that these Asian American college students are acculturated to the extent that self-reinforcement has become a culturally sanctioned behavior. The alternative explanation is that the FSRQ is a culturally unbiased instrument. Therefore, it is important to study the variation of frequency of self-reinforcement among the Asian American elderly with respect to Caucasian elderly. While Asian American elderly are presumably less acculturated than their college students counterparts, information on their generation and cultural practices were also collected in this study.

Similarly, examples of some of the items from Perceived Control Scale (Ireys, 1979) that may tap the possible difference between Asians and Caucasians reviewed earlier include (a) "I'm never sure what is going to happen next;" and (b) "I usually don't have much control over what happens" (Ireys, 1979). To date, no studies reviewed have examined cross-cultural differences in perceived control. However, on the basis

of theoretical arguments presented in Chapter 2, it is predicted that the Caucasian American subsample on average will score significantly higher than the Asian American subsample in perceived control.

To summarize, differences in depression have been detected across different ethnic groups in some studies. Since it is hypothesized that perceived control and self-reinforcement may be related to depression, it will be important to search for possible cross-cultural differences in these two variables that may better explain the cross-cultural differences in depression.

## CHAPTER 3

### METHOD

#### Participants

Two hundred and sixty-seven participants were recruited from the community for the Cross-Ethnic Elder Depression and Life Satisfaction (CEDL) Project (Dubanoski et al., in press). Participants were recruited through different means such as newspaper advertisements, notices posted in residential apartments for the elderly, Senior Centers, congregate dining centers, and the Senior Citizen Program at the University of Hawaii, Manoa campus.

The sample for the CEDL Project consisted of 77 Asians (23 males, 54 females), 128 Caucasians (23 males, 105 females), and 62 Hawaiians (22 males, 40 females). The ethnicity data for the above breakdown were obtained by asking participants to identify themselves as being Asians, Caucasians, or Hawaiians before the interview. In addition to this, ethnicity data were also obtained by asking each participant to circle all ethnic groups that he/she identified with (see Appendix B, Section 1 or Demographics). Even though ethnicity data were obtained by two methods, the statistical analyses were done using the first method of justing comparing Asians and Caucasians, rather than splitting these two major groups into smaller ethnic subgroups.

There are at least three reasons for not dividing the Asian group into their ethnic subgroups, even though the information is available and Asians consist of over 25 different subgroups (Uba, 1994). First, the theoretical basis on which cultural hypotheses are derived posits the basic differences between two general kinds of cultural orientation, namely, the Western individualistic orientation and the Eastern collectivistic orientation. Moreover, to break down the Asian group will also mean that the Caucasian group has to be broken down into its subgroups too. Second, interracial marriage between different racial groups in Hawaii is quite common. A frequency count of the ethnic groups that participants endorsed showed that many of the Asian participants endorsed more than one ethnic category. Because of the way this ethnicity variable was measured using the second method, it was impossible to divide them into specific Asian subgroups. Third, the sample size for the Asian group ( $n = 77$ ) was too small to permit further breakdowns for purposes of statistical analysis. Therefore, it was decided that the ethnicity variable to be used in this study be that of the self-reported ethnic identity of Asian or Caucasian.

Following are the criteria for inclusion in this project: (a) sixty years of age or older; (b) retired or no full-time employment; (c) ability to speak English;

(d) no gross signs of dementia as indicated by two or more incorrect responses on a cognitive function measure contained in the interview scales of the U.S. National Institute on Aging (NIA) (National Institutes of Health, 1987); and (e) lower response bias tendency as indicated by scores less than two standard deviations above the mean on the Edward's Social Desirability Scale (Edwards, 1957), and the MMPI-L Scale (Dahlstrom, Welsh, & Dahlstrom, 1972).

The present study utilized the data of the Asian and Caucasian participants. The data for the Hawaiian participants were collected for a separate study and data collection was done at a much later time. Hence, the data for the Hawaiians will not be included in this present study. Demographic characteristics of the Asian and Caucasian groups are presented in Table 1 (see Appendix A).

#### Materials

The current study utilized the revised version of the Elder Life Adjustment Interview Schedule (ELAIS; dated 6/23/90; Dubanoski et al., in press). The original version of the ELAIS (dated 9/9/89; Schlatter et al., 1993) was evaluated on a sample of 50 elderly participants (50% Caucasian, 24% Japanese, 20% Chinese, 2% Filipino, and 4% other) in Hawaii for internal consistency, test-retest reliability, and construct validity (Schlatter et al., 1993). The reported

statistics for internal consistency and test-retest reliability are summarized in Table 2 (see Appendix A). The coefficient alphas ranged from .071 to .829. The test-retest coefficients ranged from .151 to .986.

The construct validity of the original ELAIS was evaluated by examining the correlations between depression and the other variables measured in the interview schedule. Schlatter and her colleagues hypothesized that lower behavioral competency scores will be expected to be associated with higher levels of depression at first administration. Most of these construct validity predictions were upheld, as shown in Table 3 (see Appendix A). As shown in Table 3, significant correlations were obtained between depression and self-reinforcement ( $r = -.369$ ,  $p < .05$ ) and between depression and perceived control ( $r = -.598$ ,  $p < .05$ ). These results provided preliminary support for this present study's hypotheses and use of the revised ELAIS.

The revised ELAIS, used in the present study, was evaluated on a sample of 267 elderly participants for internal consistency, test-retest reliability, and construct validity (Dubanoski et al., in press). The reported statistics for internal consistency and test-retest reliability are summarized for Asians and Caucasians in Table 4 (see Appendix A). The coefficient alphas ranged from .55 to .95. In general, the internal



consistency of the measures in the revised ELAIS was improved when compared to the original ELAIS (Schlatter et al., 1993). Test-retest reliabilities were expected to be lower than those observed in the original ELAIS study (Schlatter et al., 1993) due to the longer test-retest interval (2 weeks vs. approximately 5 months) between administrations in the revised ELAIS study. However, the differences between the two studies in test-retest reliability were slight. The test-retest coefficients ranged from .35 to .93.

The construct validity of the revised ELAIS was evaluated by examining the correlations between outcome variables (depression and life satisfaction) and the other variables measured in the interview schedule for each ethnic group separately. The construct validity coefficients for Asians and Caucasians are reported in Table 5 (see Appendix A). The results indicated construct validity support for self-reinforcement, perceived control, and depression for Asian and Caucasian elders. For Asian elders, significant correlations were obtained between depression and self-reinforcement ( $r = -.48, p < .05$ ) and between depression and perceived control ( $r = -.40, p < .05$ ). For Caucasian elders, significant correlations were obtained between depression and self-reinforcement ( $r = -.53, p < .05$ ) and between depression and perceived control ( $r = -.53, p < .05$ ).

The revised ELAIS consists of 14 sections and 230 items (see Appendix B). Section 1 is the demographics section. Sections 2 to 14 are constructed from 13 commonly used self-report scales that measured depression, life satisfaction, and their hypothesized correlates. Specifically, variables measured by the revised ELAIS included depression, life satisfaction, life events, social support, activity level, social skills, self-reinforcement, perceived control, perceived health, objective health, functional ability, and response bias.

The scales were altered from already established paper-and-pencil questionnaires to interview format in the original ELAIS and the interview format was kept in the revised ELAIS. The interview format was adopted because it was deemed less problematic to use with the elderly, who tend to have visual difficulties and varying reading levels. The interview format also provides interviewers a chance to explain unclear items and to give direct feedback regarding the face validity of specific items.

Demographic information (section 1) was collected through 16 questions created by the principal investigators. Cognitive function (section 2), objective health (section 3), self-perceived health (section 4), and life satisfaction (section 9) were all measured using items adopted from the interview scales

of the U.S. National Institute on Aging (National Institute of Health, 1987). One additional item in the cognitive function section was created by the principal investigators. Functional ability or activities of daily living (section 5) was measured using 11 items from Resident and Staff Information Form (Lemke & Moos, 1981) and three items created by the principal investigators. Activity level (section 6) was measured using eight items from the interview scales of the U.S. National Institute on Aging (National Institute of Health, 1987), seven items from the Resident and Staff Information Form (Lemke & Moos, 1981), and five items created by the principal investigators. Social support (section 7) was measured using 32 items from the Inventory of Socially Supportive Behaviors (Barrera, Sandler, & Ramsey, 1981). Depression (section 8) was measured using 20 items from the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961; Beck, Rush, Shaw, & Emery, 1979). Social skills (section 10) were measured using 27 items from the Interpersonal Behavior Survey empirical assertiveness subscale (Mauger & Adkinson, 1980). Frequency of Self-reinforcement was measured using ten items from the Frequency of Self-reinforcement Questionnaire (Heiby, 1983a). Perceived control was measured using 15 items from the Perceived Control Scale (Ireys, 1979). Social desirability was measured using 13 items from the MMPI-L

Scale (Dahlstrom, Welsh, & Dahlstrom, 1972) and 10 items from the Edward's Social Desirability Scale (Edwards, 1957). Response format for the interview schedule included 5-point Likert scales (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree). This is a change from the response format of the original version of the interview schedule used in the pilot study, which included yes-no and never-sometimes-often scaling formats (Schlatter et al., 1993).

The structured interview schedule was developed in two major stages. The first stage (Schlatter et al., 1993) involved creating interview items using items from established self-report questionnaires as well as creating new items using a rational (theoretical) approach to test construction. Special concerns were addressed in this process of item revision and item creation with respect to relevance to Hawaii (e.g., How often do you take trips on Oahu?), potential offensiveness (e.g., questions regarding sex were omitted), clarity, and redundancy. Because the educational levels of the elderly population were likely to vary, items were rewritten at the fourth-grade reading level according to Fry's Readability Graph (Fry, 1977). All items were worded in the form of a question to facilitate the administration of an interview format. The first draft of the interview schedule was piloted on an 85 year old retired Caucasian male professor. The

session was observed by three research assistants who provided feedback on items for which scoring was ambiguous. Such items were rewritten until all research assistants agreed on clarity.

In the second stage (Dubanoski et al., in press), the interview schedule was revised based on psychometric evaluations and interviewers' feedback from the pilot study (Schlatter et al., 1993). Several modifications were made to the interview schedule in order to improve its psychometric properties. One modification involved altering the scale format from a yes-no and never-sometimes-often format to a 5-point Likert scale format (sections 3-14). Another modification involved changing each item from a question to a statement, where relevant, so as to allow for the interviewee to endorse his/her level of agreement with the statement. The final modification included dropping some items, rewriting some items, or adding new items based upon feedback from interviewers.

For the purpose of the proposed study, the following were used from the revised interview schedule (Dubanoski et al., in press): data from Section 1 (Demographics: e.g., age, sex, marital status, educational level, and years in Hawaii), Section 8 (Depression), Section 11 (Frequency of Self-Reinforcement), and Section 13 (Perceived Control).

### Depression

The depression section of the interview schedule was based on the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961; Beck, Rush, Shaw, & Emery, 1979). The BDI is a 21-item, multiple choice self-report scale which purports to measure the severity of characteristic symptoms of depression in adolescents and adults. Each item has four possible choices, and each choice is assigned a weight of zero, one, two, or three points. The higher the weight, the more intense is the symptom. The total score ranges from 0 to 63.

Studies reported an internal consistency (split half) reliability coefficient of .86 for the test items, and a Spearman-Brown correlation coefficient of .93 (Stehouwer, 1984). The test correlates quite highly with psychiatric ratings (.77), and with other measures of depression (.66 for Depression Adjective Check Lists and .77 for Multiphasic Personality Inventory Depression Subscale) (Stehouwer, 1984).

As mentioned earlier, the BDI was modified from a self-report questionnaire to an interview schedule. In the original ELAIS, the response format of the BDI is in the form of 3 possible responses (1 = Never, 2 = Sometimes, 3 = Often) to questions instead of the four statements per item in the original BDI (Schlatter et al., 1993). In the revised ELAIS, the response format

was further changed to a 5-point Likert scale measuring degree of agreement and disagreement (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree) (Dubanoski et al., in press).

In both the original and revised interview schedules, the last item concerning changes in sexual interest was dropped to reduce potential offensiveness, because of certain cultural taboos with regard to talking about sex in the Asian cultures (Aoki, Ngin, Mo, & Ja, 1989).

#### Frequency of Self-Reinforcement

The Frequency of Self-Reinforcement Questionnaire (FSRQ; also known as the Self-Reinforcement Questionnaire, SRQ) was developed to measure self-reinforcement skills (Heiby, 1982; Heiby, 1983a; Heiby & Campos, 1986) including noncontingent self-administered positive events (Staats & Heiby, 1985). The FSRQ is a 30-item true-false questionnaire. Items on the FSRQ were selected from a pool of 100 items, based on judgments of content validity by 10 clinicians. A high score indicates a favorable attitude toward self-reinforcement, or greater frequency of self-reinforcement. A low score indicates a tendency to not engage in self-reinforcement, or a lower frequency of self-reinforcement.

The FSRQ has very good internal consistency. Estimation of internal consistency by the split-half

method with the Spearman-Brown correction found a reliability coefficient of .87 on a sample of 100 undergraduate college students (Heiby, 1983a). In a cross-validation study (Campos, 1984) on 222 undergraduates, the split-half reliability of the FSRQ was .68 (Spearman-Brown) and the Cronbach coefficient alpha was .71.

The FSRQ has excellent stability. Stability of FSRQ scores was evaluated on a sample of 100 undergraduates over a eight-week test-retest period (Heiby, 1983a). The result showed a test-retest correlation of .92.

Criterion-related concurrent validity has been demonstrated by the significant correlations between FSRQ scores and various other measures of self-reinforcement. FSRQ scores were found to correlated significantly with ratings of self-praise after working on analogies problems in two experiments ( $r = .69$ ;  $r = .65$ ; Heiby, 1983a). FSRQ scores were also found to be significantly correlated with self-monitoring of self-reinforcement ( $r = .78$ ) and experimenter ratings of participants' tendency to engage in self-reinforcement ( $r = .42$ ) (Heiby, 1982). The FSRQ has been demonstrated to be sensitive to change following training in self-reinforcement skills (Heiby, 1986).

Construct validity has been demonstrated by means of convergent-divergent validity and experimental



manipulations. Divergent validity has been demonstrated by the lack of a significant correlation between FSRQ scores and Marlowe-Crowne Social Desirability Scale scores ( $r = .11$ ). This suggested that responses to items of FSRQ were not significantly related to social desirability response set.

Convergent validity has been demonstrated by the significant correlations between FSRQ scores and measures of constructs that are theoretically predicted to be positively or negatively correlated with FSRQ. The FSRQ is reported to correlate negatively with Problematic Situations Questionnaire [measures self-punishment;  $r = -.17$  (Heiby & Hays, 1982)], Beck Depression Inventory [measures depression;  $r = -.38$  (Heiby & Hays, 1982);  $r = -.29$  (Campos, 1984)], Zung Self Rating Depression Scale [measures depression;  $r = -.48$  (Heiby, Onorato, & Sato, 1987)], State-Trait Anxiety Inventory [measures anxiety;  $r = -.63$  (Heiby, Onorato, & Sato, 1987)], Weissman Dysfunctional Attitudes Scale [measures cognitive dysfunction;  $r = -.50$  (Campos, 1984)], and measures of negative-self, negative world, and negative future from the Munoz Subjective Probability Questionnaire [ $r = -.50$ ;  $r = -.32$ ;  $r = -.38$  (Campos, 1984)].

Finally, experimental manipulations also provided evidence for construct validity. Some of these studies

have been reviewed in Chapter 2 and they are summarized in Heiby & Campos (1986).

The response format of the 10-item FSRQ in the original ELAIS was modified from that of the 30-item FSRQ (Schlatter et al., 1993). In the 30-item FSRQ, the response format is in the form of True-False questions (Heiby, 1983a). In contrast, the response format of the 10-item FSRQ is in the form of Yes-No questions. The following items from the 30-item FSRQ were used in both the original ELAIS and the revised ELAIS for the 10-item FSRQ: 1, 2, 3, 6, 9, 14, 17, 19, 22, and 24.

The response format of the 10-item FSRQ in the original ELAIS was further modified in the revised ELAIS. It was changed from a Yes-No question format to a 5-point Likert scale format, measuring degree of agreement and disagreement (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree) (Dubanoski et al., in press).

#### Perceived Control

The Perceived Control Scale (PCS; Ireys, 1979; L. R. Slivinske, personal communication, January 6, 1989) is a 35-item, 5-point Likert type self-report scale measuring degree of agreement and disagreement. The PCS purports to measure the perceived capacity to cause desired changes in the immediate environment. The PCS assesses the following three domains: (a) predictability, or how well the respondent can determine

future events; (b) interpersonal power, or how much environmental influence the respondent has; and (c) choice, or how many options respondents believe they have in attempting to master their environment. It is reported by Slivinske (personal communication, January 6, 1989) that in a sample of 59 participants, the split-half reliability of PCS ranges from .75 to .86, and the test-retest reliability ranges from .72 to .89. In terms of concurrent validity, the PCS has been found to correlate  $-.41$  with Nowicki-Duke Locus of Control Scale for Adults ( $p < .05$ ) (L. R. Slivinske, personal communication, January 6, 1989).

The response format in the original ELAIS for PCS was changed from its original 5-point Likert-type scale to a 3-options format (1 = Yes, 2 = Unsure, 3 = No) (Schlatter et al., 1993). The response format was then changed back to a 5-point Likert scale format, measuring degree of agreement and disagreement (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree) (Dubanoski et al., in press).

In the original interview schedule (Schlatter et al., 1993), the following items from the PCS were used: 1, 2, 3, 4, 8, 12, 13, 15, 17, 19, 23, 25, 30, 31, 32, and 35. In the revised interview schedule (Dubanoski et al. press), the following items from the PCS were used: 2, 3, 4, 7, 8, 9, 10, 13, 15, 17, 20, 21, 25, 27, and 32.

### Procedure

The participants were interviewed twice over an approximate five month period by research assistants who were undergraduate psychology majors and unclassified graduate students in psychology, and students in the gerontology certificate program at the University of Hawaii. The time interval between the first interview and second interview was originally intended to be six months because an untreated depressive episode typically lasts six months or longer, regardless of age of onset (APA, 1994). Due to unforeseen practical limitation in conducting the field interviews, the average time interval turned out to be five months rather than six months.

The research assistants administering the interviews were trained in the administration of the two-hour structured interview schedule (i.e., revised ELAIS) by viewing a videotape of a mock interview administered by one of the primary investigators. In addition, the project coordinator observed initial interviews conducted by all research assistants and supervised interviewers throughout the data collection period.

Participants who expressed interest in the study were provided with information about the study and were asked to sign an informed consent form. Most of the interviews lasted 60 to 90 minutes. Visual aids were

used to assist participants in selecting responses from each section of the interview. Interview sessions were conducted at the subject's home or at an alternative site selected by the subject. Payment of \$15 and a social services handbook were offered to participants for completion of the two interview sessions. Referrals were offered to participants who showed depressive symptoms. Preliminary results of the study were summarized and distributed to all participants.

## CHAPTER 4

## RESULTS

Descriptive Statistics

Descriptive statistics of the scores on the Depression, Self-Reinforcement, and Perceived Control sections of the interview schedule at first and second administrations are reported in Table 6. Kurtosis and skewness for all the measures were found to be within normal limits.

Reliability

Internal consistencies of the measures used in this study were evaluated using standardized Cronbach Alphas. Stability of the measures were estimated using test-retest reliability coefficients. The results are shown in Table 7. The internal consistency of the measures was improved over the pilot study (Schlatter et al., 1993). The test-retest correlations were all statistically significant at the .001 level. The magnitude of the test-retest correlations were consistent with expectations given the long test-retest time interval (approximately 5 months). The measures used in this study are viewed as internally consistent and stable over a five month period. As expected, the internal consistency and test-retest results reported here were same as those reported in Dubanoski et al. (in press) given both studies used the same archived data

set. New information presented in Table 7, not reported in Dubanoski et al. (in press) were the statistics of internal consistency and test-retest reliability for the whole sample.

#### Hypothesis 1

Hypothesis 1 predicts that both frequency of self-reinforcement and perceived control uniquely contributes to the prediction of depression in the total sample, Asian American subsample and Caucasian American subsample concurrently and at a later point in time.

Hypothesis 1 was evaluated by two sets of three separate standard multiple regression analyses on the total sample, Asian subsample, and Caucasian subsample. The dependent variable used in the first set of regression analyses was depression measured concurrently. In the second set, depression was measured five months later.

Results of evaluation of assumptions of normality, linearity, and homoscedasticity based on the examination of the residuals scatterplots (i.e., scatterplots examining the relation between predicted dependent variable scores and errors of prediction) and normal p-p (expected cumulative probability-observed cumulative probability) plot of standardized dependent variables were satisfactory. Since self-reinforcement and perceived control were significantly correlated ( $r = .586$ ,  $p < .05$ ), multicollinearity diagnostics were

examined. Multicollinearity diagnostics included stepwise regression, tolerance factors, variance inflation factors, eigenvalues, conditions indexes, and variance proportions. The results of this investigation suggested that multicollinearity was not a major problem for interpretation of analyses involving these constructs.

Concurrent Depression. The first standard multiple regression analysis was performed with first administration scores on the total sample with depression as the dependent variable and self-reinforcement and perceived control as independent variables. Table 8 displays the unstandardized regression coefficients ( $B$ ), the standardized regression coefficients ( $\beta$ ), the semipartial correlations ( $sr^2$ );  $R$ ,  $R^2$ , and adjusted  $R^2$ .  $R$  for regression was significantly different from zero,  $F(2, 199) = 39.51, p < .001$ . Both independent variables contributed significantly to prediction of depression at first administration as predicted in Hypothesis 1. Altogether, 28% (28% adjusted) of the variability in depression at first administration was predicted by concurrent scores on these two independent variables.

The second standard multiple regression analysis was performed with first administration scores on the Asian subsample with depression as the dependent variable and self-reinforcement and perceived control as



independent variables. Table 9 displays the unstandardized regression coefficients ( $B$ ), the standardized regression coefficients ( $\beta$ ), the semipartial correlations ( $sr^2$ ),  $R$ ,  $R^2$ , and adjusted  $R^2$ .  $R$  for regression was significantly different from zero,  $F(2, 74) = 12.23$ ,  $p < .001$ . Only self-reinforcement contributed significantly to prediction of depression at first administration. Thus, Hypothesis 1 was partly supported for the Asian subsample. Altogether, 25% (23% adjusted) of the variability in depression at first administration was predicted by scores on these two independent variables.

The third standard multiple regression analysis was performed with first administration scores on the Caucasian subsample with depression as the dependent variable and self-reinforcement and perceived control as independent variables. Table 10 displays the unstandardized regression coefficients ( $B$ ), the standardized regression coefficients ( $\beta$ ), the semipartial correlations ( $sr^2$ ),  $R$ ,  $R^2$ , and adjusted  $R^2$ .  $R$  for regression was significantly different from zero,  $F(2, 122) = 30.63$ ,  $p < .001$ . Both independent variables contributed significantly to prediction of depression at first administration which is consistent with Hypothesis 1. Altogether, 33% (32% adjusted) of the variability in depression at first administration was predicted by concurrent scores on these two independent variables.

Subsequent Depression. The second set of three standard multiple regression analysis are designed to test Hypothesis 1's prediction that the behavioral competencies of self-reinforcement and perceived control can partly predict depression five months later. The total sample, Asian subsample, and Caucasian subsample were analyzed separately. In contrast to the previous three regression analyses, the dependent variable is depression at second test administration.

The fourth standard multiple regression analysis was performed on the total sample with depression at second administration as the dependent variable and self-reinforcement and perceived control at first administration as independent variables. Table 11 displays the unstandardized regression coefficients ( $B$ ), the standardized regression coefficients ( $\beta$ ), the semipartial correlations ( $sr^2$ ),  $R$ ,  $R^2$ , and adjusted  $R^2$ .  $R$  for regression was significantly different from zero,  $F(2, 201) = 44.35$ ,  $p < .001$ . As predicted, both independent variables contributed significantly to prediction of depression at second administration. Altogether, 31% (30% adjusted) of the variability in depression at second administration was predicted from scores on these two independent variables.

The fifth standard multiple regression analysis was performed on the Asian subsample with depression at second administration as the dependent variable and

self-reinforcement and perceived control at first administration as independent variables. Table 12 displays the unstandardized regression coefficients ( $B$ ), the standardized regression coefficients ( $\beta$ ), the semipartial correlations ( $sr^2$ ),  $R$ ,  $R^2$ , and adjusted  $R^2$ .  $R$  for regression was significantly different from zero,  $F(2, 73) = 9.20, p < .001$ . Only self-reinforcement contributed significantly to prediction of depression at second administration. Thus, Hypothesis 1 was partly supported for the Asian subsample. Altogether, 20% (18% adjusted) of the variability in depression at second administration was predicted from scores on these two independent variables.

The sixth standard multiple regression analysis was performed on the Caucasian subsample with depression at second administration as the dependent variable and self-reinforcement and perceived control at first administration as independent variables. Table 13 displays the unstandardized regression coefficients ( $B$ ), the standardized regression coefficients ( $\beta$ ), the semipartial correlations ( $sr^2$ ),  $R$ ,  $R^2$ , and adjusted  $R^2$ .  $R$  for regression was significantly different from zero,  $F(2, 125) = 37.88, p < .001$ . Both independent variables contributed significantly to prediction of depression at second administration which is consistent with Hypothesis 1. Altogether, 38% (37% adjusted) of the variability in depression at second administration was

predicted from scores on these two independent variables.

### Hypothesis 2

Hypothesis 2 predicts that there are significant differences between Asian American and Caucasian American subsamples in terms of depression, frequency of self-reinforcement, and perceived control scores. Specifically, it is predicted that the Caucasian American subsample on average scored significantly higher than the Asian American subsample in terms of frequency of self-reinforcement, and perceived control. Hypothesis 2 offers no prediction of direction of differences in scores on depression.

To test hypothesis 2, one-way multivariate analysis of variance (MANOVA) was performed on three dependent variables (i.e., depression, self-reinforcement, and perceived control), with ethnicity as the independent variable.

The assumption of homogeneity of variance-covariance matrices was evaluated using Cochran's C, Bartlett-Box F, and Box's M test for homogeneity of dispersion matrices. The results of all three tests were nonsignificant. Cochran's C produces  $C(100, 2) = .51$ ,  $p > .05$  for depression,  $C(100, 2) = .56$ ,  $p > .05$  for self-reinforcement,  $C(100, 2) = .52$ ,  $p > .05$  for perceived control. Bartlett-Box F produces  $F(1, 102597) = .03$ ,  $p > .05$  for depression,  $F(1, 102597) = 1.20$ ,  $p >$

.05 for self-reinforcement, and  $F(1, 102597) = .13, p > .05$  for perceived control. Finally, the very sensitive Box's M test for homogeneity of dispersion matrices produces  $F(1, 102597) = .57, p > .05$ , indicating homogeneity of variance-covariance matrices.

Assumption of normality was evaluated using normal q-q plots of residuals of all dependent variables. The results were satisfactory.

Multivariate tests of significance (i.e., Wilks' Lambda, Pillai's Trace, Hotelling-Lawley Trace, and Roys's Greatest Root) for effect ethnicity were all significant,  $F(3, 198) = 3.89, p < .05$ . Univariate F-tests for effect ethnicity were significant for dependent variables self-reinforcement,  $F(1, 200) = 4.92, p < .05$  and perceived control,  $F(1, 200) = 7.19, p < .01$ , but not for dependent variable depression,  $F(1, 200) = .03, p = .86$ . Combining these results with those from Table 6, we can see that Caucasian participants had significantly higher mean self-reinforcement and perceived control scores than Asian participants. The results here provided partial support for Hypothesis 2, in that they were consistent with the predicted significant differences between Asian participants' and Caucasian participants' average scores for self-reinforcement and perceived control only. Inconsistent with Hypothesis 2, the differences between between Asian

participants' and Caucasian participants' average scores on depression were not significant.

#### Subsequent Analyses

Gender was a variable that was been found in previous research to be related to depression (Nolen-Hoeksema, 1987, 1990). Even though gender was not a variable included in the hypotheses of this study, it was considered important to examine its effects on the pattern of the above results. Gender may be related to behavioral competency factors as well as frequency of depression. According to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV; APA, 1994), depressive episodes occur twice as often in women as in men and Major Depressive Disorder (Single or Recurrent) is twice as common in adolescent and adult females as in adolescent and adult males. In almost all industrialized countries, women are at least twice more likely than men to report severe episodes of unipolar depression (Weissman, 1991; Klerman & Weissman, 1989). In the case of the elderly, most epidemiological studies have reported a much higher prevalence rate of depressive symptomatology in elderly females than in elderly males (Katona, 1994).

To explore the effect of gender on the findings of this study, the standard multiple regression analyses and the MANOVA were repeated by adding gender as an independent variable. As indicated below, the results

of the analyses suggested after controlling for the effects of gender, the pattern of results without gender in the analyses is approximately the same.

For the total sample with depression at first administration as the dependent variable, adding gender as an independent variable did not change the overall pattern of significance (see Table 14).  $R$  for regression was significantly different from zero,  $F(3, 198) = 28.62$ ,  $p < .001$ . Gender, self-reinforcement, and perceived control all contributed significantly to prediction of depression at first administration. Altogether, 30% (29% adjusted) of the variability in depression at first administration was predicted from scores on these three independent variables. Adding gender as an independent variable only resulted in an increase of 2% in accounted for variance. Moreover, when the dependent variable is depression at second administration, gender becomes an insignificant predictor of depression five months later,  $F(3, 198) = 28.62$ ,  $p < .001$  (see Table 15).

For the Asian subsample with depression at first administration as the dependent variable, adding gender as an independent variable did not change the overall pattern of significance (see Table 16).  $R$  for regression was significantly different from zero,  $F(3, 73) = 8.19$ ,  $p < .001$ . Only self-reinforcement contributed significantly to prediction of depression at

first administration. Altogether, 25% (22% adjusted) of the variability in depression at first administration was predicted from scores on these three independent variables. Adding gender as an independent variable did not produce an increase in accounted for variance in depression at first administration. Similar results were obtained for depression at second administration,  $F(3, 72) = 6.23, p < .001$  (see Table 17). Adding gender as an independent variable did not produce an increase in accounted for variance in depression at second administration.

For the Caucasian subsample with depression at first administration as the dependent variable, adding gender as an independent variable did not change the overall pattern of significance (see Table 18).  $R$  for regression was significantly different from zero,  $F(3, 121) = 22.57, p < .001$ . Gender, self-reinforcement, and perceived control all contributed significantly to prediction of depression at first administration. Altogether, 36% (34% adjusted) of the variability in depression at first administration was predicted from scores on these three independent variables. Adding gender as an independent variable only resulted in an increase of 3% in accounted for variance in depression at first administration. For depression at second administration,  $F(3, 124) = 25.30, p < .001$ , gender was not a significant predictor (see Table 19).



To summarize, gender was a significant predictor of depression only at first administration for the total sample. For Asians, gender was not a significant predictor of depression at either administration. For Caucasians, gender was only a significant predictor at the first administration, but very little variance was predicted. The results obtained were consistent with previous findings investigated on mainly Caucasian samples (Nolen-Hoeksema, 1987, 1990).

The MANOVA results provided further understanding of the role of gender in this study. None of the multivariate tests of significance for ethnicity by gender interaction was significant,  $F(3, 196) = 1.28$ ,  $p = .283$ . Univariate tests for ethnicity by gender interaction were also nonsignificant for depression,  $F(1, 198) = 2.50$ ,  $p = .12$ ; self-reinforcement,  $F(1, 198) = .79$ ,  $p = .37$ , and perceived control,  $F(1, 198) = 2.86$ ,  $p = .09$ .

All the multivariate tests of significance for ethnicity effect were significant,  $F(3, 196) = 4.09$ ,  $p < .01$ . Univariate tests for ethnicity effect were significant for self-reinforcement,  $F(1, 198) = 6.16$ ,  $p < .05$ , and perceived control,  $F(1, 198) = 11.05$ ,  $p < .01$ , but not for depression,  $F(1, 198) = .87$ ,  $p = .35$ .

None of the multivariate tests of significance for gender effect was significant,  $F(3, 196) = 1.88$ ,  $p = .13$ . Univariate tests for gender effect were

significant for depression,  $F(1, 198) = 5.61, p < .05$ , but not for self-reinforcement,  $F(1, 198) = 1.23, p = .27$ , and perceived control,  $F(1, 198) = 1.64, p = .20$ . Again, the results obtained for gender were consistent with previous findings investigated on mainly Caucasian samples (Nolen-Hoeksema, 1987, 1990). As the above results showed, adding gender as an independent variable in the multiple regression analyses and MANOVA does not change the pattern of the results obtained in the study.

CHAPTER 5  
DISCUSSION

The findings of this study have to be viewed within the limitations of the research design (Dubanoski et al., in press) used for the archived data. First, the sampling method used was convenience sampling and not random sampling. Second, the participants in this study may not be representative of the population of the City and County of Honolulu in terms of ethnicity. Thus, the above two factors may limit the generalization of findings to the general population. Third, interjudge agreement for the measures was not established, even though the interviewers were trained and supervised. Therefore, interviewer's bias may be a possible problem.

As mentioned in Chapter 1, the purpose of this study was twofold. The first purpose was to determine the extent to which behavioral competencies of self-reinforcement and perceived control covary or predict depression scores among elderly individuals concurrently and at a later point in time. It was hypothesized that both frequency of self-reinforcement and perceived control uniquely contributes to the prediction of depression in the total sample, Asian American subsample and Caucasian American subsample concurrently and at a later point in time.

The findings did suggest that behavioral competencies of self-reinforcement and perceived control covary or predict depression scores among elderly individuals concurrently and at a later point in time for the total sample (see Table 8 & Table 11). The findings, however, suggested that only self-reinforcement scores predicted depression concurrently and five months later for both Asians and Caucasians. Perceived control scores predicted depression concurrently and five months later for Caucasians only.

The second purpose was to examine possible differences between Asian American and Caucasian American elders in reported depression, self-reinforcement, and perceived control scores. It was hypothesized that there are significant differences between Asian American and Caucasian American subsamples in terms of depression, frequency of self-reinforcement, and perceived control scores. Specifically, it is predicted that the Caucasian American subsample on average scored significantly higher than the Asian American subsample in terms of frequency of self-reinforcement, and perceived control. Hypothesis 2 offers no prediction of direction of differences in scores on depression.

The findings suggest showed that Caucasians had significantly higher mean self-reinforcement scores than Asians. Caucasians also had significantly higher mean

perceived control scores than Asians. The results, however, did not show that there was a significant difference between Asian and Caucasian participants in terms of their mean depression scores.

In terms of Hypothesis 1, the behavioral competency of self-reinforcement was the most robust predictor of depression. Self-reinforcement was a significant predictor of depression for both Asian participants and Caucasian participants concurrently and five months later. As expected, the Asian participants had significantly lower self-reinforcement scores than Caucasian participants. As mentioned in Chapter 2, the significantly lower mean self-reinforcement score for Asian participants may be due to self-reinforcement being less culturally acceptable (see p. 29-31). Because lower self-reinforcement scores were significantly associated with high depression scores, Asian elders exhibiting this behavioral deficit may be vulnerable to clinical depression.

Perceived control was a significant predictor of depression only for Caucasian participants. As expected, they reported significantly higher perceived control scores than Asian participants. Contrary to expectations, perceived control may not play an important role in depression among Asian elders, even though Asian participants were found to have

significantly lower perceived control scores in comparison with Caucasian participants.

This finding may suggest that perceived control was inadequately measured. The measures from which the ELAIS (Elder Life Adjustment Interview Schedule; Schlatter et al., 1993; Dubanoski et al., in press) was derived were developed with primarily Caucasian participants. The construct validity coefficient for perceived control was higher for Caucasian participants in comparison to Asian participants, even though both construct validity coefficients were significantly different from zero at the .05 significance level (see Table 5). This observation is consistent with that of Dubanoski et al. (in press) who concluded that the ELAIS had the strongest construct validity support for Caucasian elder participants. The findings of this study implies that the Perceived Control section of the ELAIS may have to be modified for Asian participants.

In addition to psychometric concerns, perceived control may not have been a predictor of depression for Asian participants due to some cultural factors. For example, Asians may accept the fact that there are many things not within their control. This acceptance may result in a lack of an aversive effect of low perceived control on mood. This is reflected in Asians' conception of destiny or fate (see p. 28-29). In other words, Asians may tend to resign to their fate when

things do not go their way. Perceived control may not evoke dysphoria. This resignation to fate may allow for some stability in mood regulation.

In conclusion, the results of this study provided partial support both Hypothesis 1 and Hypothesis 2. And the pattern of results remained the same after introducing gender as an independent variable in both multiple regression and MANOVA. In other words, after controlling for the possible effects of gender, significant results were still obtained for self-reinforcement and perceived control for predicting time 1 and time 2 depression.

One important finding in this study was that self-reinforcement is an important predictor of concurrent depression and depression five months later for both Asians and Caucasians. This finding is consistent with previous research on the relation between self-reinforcement and depression (see p. 18-22). The finding that Asians tend to have significantly lower self-reinforcement scores than Caucasians is contrary to the nonsignificant difference finding by Heiby and Pacheco (1982) among Caucasian, Japanese, and Chinese American college students. However, the significant difference finding is consistent with the theoretical reasoning provided in Chapter 2 (p. 34-35). Therefore, this implies that self-reinforcement may be a vulnerability factor deserving further exploration.

In contrast, perceived control is an important predictor of concurrent depression and depression five months later for Caucasians only. As discussed in Chapter 2, this is an important finding that was not studied in previous research using Ireys' construct of perceived control. The finding that Asians tend to have significantly lower perceived control scores than Caucasians is also new, since it has not been examined in previous studies. The finding that perceived control did not predict concurrent or subsequent depression implied that perceived control was either not well measured on ELAIS or not relevant to depression among Asians. Therefore, further research is needed to clarify the relative importance and/or measurement of perceived control as a predictor of depression among Asians. Finally, due to the limitation of generalizability of findings to the sample of this study, namely, American elders, future research may include cross-national sample as well as other age groups.

The findings of this study may have some important implications and adds to the growing literature on the study of minority cultures (Uba, 1994) and the use of multicultural assessment and counseling (Paniagua, 1994) in United States. One implication of this study is the importance of having norms for ELAIS that are representative of different ethnic groups (e.g.,



Asians). The findings also implies that case conceptualizations and interventions designed for reducing depressive symptoms and associated risk factors in the elderly have to include the cross-cultural differences in which different ethnic elders view self-reinforcement and perceived control.

In working with Asian clients, understanding the way the client construes his/her self-concept in relation to self-reinforcement, his/her cultural values, and the cultural values of his/her family is important. Questions that need to be considered includes: (a) In what way do client's major social units (e.g., family) view the concept of self-reinforcement?; (b) Is client's own view of self-reinforcement congruent with that of his or her social units?; (c) What are the social, emotional, cognitive, and behavioral consequences of any incongruence that may arise from different views; and (d) If a client believe that self-reinforcement is culturally inappropriate; what does the therapist do next? One of the therapeutic factors frequently mentioned in training texts is respect for client (Hammond, Hepworth, & Smith, 1977). The therapist has to respect the difference in cultural values with respect to self-reinforcement and perceived control. For example, clients might be trained to engage in self-reinforcement behaviors only in covert and private situations, but not overtly or in public situations.

In the case of perceived control, the therapist needs to assess the client's cultural values regarding destiny and fate. One important distinction that can be raised with client is the distinction between "things" that can be controllable versus those that are not controllable. Finally, because of the possible greater influence of larger social systems on Asians (e.g., family, community), the therapist may have to consider using family therapy, group therapy, and community interventions. In terms of prevention, community interventions may be an appropriate vehicle for change.

## Appendix A: Tables

Table 1  
Selected Demographic Characteristics of Participants by  
 Ethnic Group

Characteristics	Ethnic Group		
	Total ( <u>n</u> = 205)	Asian ( <u>n</u> = 77)	Caucasian ( <u>n</u> = 128)
Age			
<u>M</u>	71.04	69.53	71.95
<u>SD</u>	6.59	6.01	6.78
Sex (%)			
Male	22.4	29.90	18.0
Female	77.6	70.10	82.0
Marital Status (%)			
Married	44.9	58.40	36.70
Widowed	28.30	19.50	33.60
Divorced	20.00	13.00	24.20
Separated	1.00	1.30	.80
Never Married	5.90	7.80	4.70
Educational Level (grade)			
<u>M</u>	15.17	14.77	15.41
<u>SD</u>	3.26	3.22	3.28
Years in Hawaii			
<u>M</u>	38.28	60.64	24.83
<u>SD</u>	24.30	17.40	16.78

Table 2<sup>a</sup>  
Statistics for Internal Consistency and Test-retest  
Reliability

Variable	Coefficient Alpha <sup>***</sup>	Test-retest coefficient
<i>Outcome Variables</i>		
Depression	.804	.882*
Life Satisfaction	.710	.797*
<i>Environmental Conditions</i>		
Life Events	.464	.151
Social Support		
Information	.606	.680*
Tangible	.605	.718*
Emotional	.812	.827*
Integrated	.829	.798*
<i>Behavioral Competencies</i>		
Activity Level	.720	.909*
Social Skills	.527	.562*
Self-reinforcement	.634	.605*
Perceived Control	.622	.732*
<i>Health Status</i>		
Perceived Health	.574	.812*
Objective Health (1-5)**	.071	.986*
Objective Health (6-10)**	.446	.810*
Functional Ability	.291	.897*
<i>Reliability Check</i>		
Response Bias	.602	.729*

\*  $p < .05$

\*\* The items in this section were split up for analysis due to the large number of answer choices for items 1-5.

\*\*\* Coefficient alpha is based on varying number of participants ranging from 44-50 due to missing items.

<sup>a</sup> From "Depression and life satisfaction in the elderly: The development of an interview schedule," by A. K. Schlatter, E. M. Heiby, J. P. Dubanoski, V. A. Kameoka, & C. B. Denney, 1993, The Journal of MARC Research, 1, p. 36.

Table 3<sup>a</sup>  
Construct Validity Coefficients

Variable	Depression
Life Satisfaction	-.627*
Life Events	.190
Social Support	
Information	.216
Tangible	.127
Emotional	.060
Integrated	.125
Activity Level	-.299*
Social Skills	.384*
Self-reinforcement	-.369*
Perceived Control	-.598*
Perceived Health	-.534*
Objective Health (1-5)	.268
Objective Health (6-10)	.259
Functional Ability	-.275
Response Bias	.372*

\*  $p < .05$

<sup>a</sup> From "Depression and life satisfaction in the elderly: The development of an interview schedule," by A. K. Schlatter, E. M. Heiby, J. P. Dubanoski, V. A. Kameoka, & C. B. Denney, 1993, The Journal of MARC Research, 1, p. 37.

Table 4<sup>c</sup>  
Statistics for Internal Consistency and Test-retest  
Reliability by Ethnic Groups

Variable	Ethnic Group			
	Asian		Caucasian	
	Alpha	Test -retest	Alpha	Test -retest
<i>Outcome Variables</i>				
Depression	.90	.54*	.88	.63*
Life Satisfaction	.87	.53*	.87	.77*
<i>Environmental Conditions</i>				
Life Events	- <sup>a</sup>	.35*	-	.47*
Social Support				
Information	.91	.37*	.88	.53*
Tangible	.85	.43*	.81	.51*
Emotional	.95	.68*	.93	.68*
Integrated	.90	.59*	.84	.57*
<i>Behavioral Competencies</i>				
Activity Level	.75	.79*	.69	.71*
Social Skills	.57	.65*	.55	.57*
Self-reinforcement	.67	.56*	.75	.68*
Perceived Control	.78	.56*	.81	.68*
<i>Health Related</i>				
Perceived Health	- <sup>b</sup>	.65*	-	.68*
Objective Health	- <sup>a</sup>	.80*	-	.75*
Functional Ability	.93	.58*	.92	.54*

\*  $p < .05$

<sup>a</sup>Subscale consisted of frequency counts.

<sup>b</sup>Based on an one-item subscale.

<sup>c</sup> From "A cross-ethnic psychometric evaluation of the elder life adjustment interview schedule," by J. P. Dubanoski, E. M. Heiby, V. A. Kameoka, E. Wong, in press, Journal of Clinical Geropsychology.



Table 5<sup>a</sup>  
Construct Validity Coefficients by Ethnic Groups

Variable	Ethnic Group			
	Asian		Caucasian	
	Life Satis	Dep	Life Satis	Dep
<i>Outcome Variables</i>				
Depression	-.50	1.00	-.61	1.00
Life Satisfaction	1.00	-.50*	1.00	-.61*
<i>Environmental Conditions</i>				
Life Events	-.09	-.001	-.10	.17
<i>Social Support</i>				
Information	-.02	.16	.11	-.002
Tangible	-.09	.17	.06	.03
Emotional	.06	.08	.32*	-.22*
Integrated	.09	-.06	.27*	-.28*
<i>Behavioral Competencies</i>				
Activity Level	-.01	-.001	.28	-.26*
Social Skills	.26*	-.41*	.20*	-.32*
Self-reinforcement	.46*	-.48*	.42*	-.53*
Perceived Control	.30*	-.40*	.46*	-.53*
<i>Health Related</i>				
Perceived Health	.31*	-.08	.38*	-.38*
Objective Health	-.16	.17	-.26*	.23*
Functional Ability	.23*	-.38*	.32*	-.42*

\*  $p < .05$

<sup>a</sup> From "A cross-ethnic psychometric evaluation of the elder life adjustment interview schedule," by J. P. Dubanoski, E. M. Heiby, V. A. Kameoka, E. Wong, in press, Journal of Clinical Geropsychology.

Table 6  
Descriptive Statistics

Variable	Ethnic Group		
	Total	Asian	Caucasian
<u>1st Administration</u>			
Depression			
<u>n</u>	202	77	125
<u>M</u>	35.85	35.69	35.94
<u>SD</u>	9.81	9.94	9.76
Self-Reinforcement			
<u>n</u>	205	77	128
<u>M</u>	37.02	36.14	37.56
<u>SD</u>	4.60	4.24	4.74
Perceived Control			
<u>n</u>	205	77	128
<u>M</u>	55.32	53.68	56.31
<u>SD</u>	6.90	6.94	6.70
<u>2nd Administration</u>			
Depression			
<u>n</u>	204	76	128
<u>M</u>	37.37	37.72	37.16
<u>SD</u>	9.42	9.01	
Self-Reinforcement			
<u>n</u>	205	77	128
<u>M</u>	37.37	36.07	37.62
<u>SD</u>	4.29	4.10	4.32
Perceived Control			
<u>n</u>	205	77	128
<u>M</u>	55.05	52.90	56.34
<u>SD</u>	6.41	6.11	6.26

Table 7  
Reliability Coefficients

Variable	1st Admin. Std. Alpha	2nd Admin. Std. Alpha	Test- Retest
Depression			
Total	.88	.90	.59*
Asian	.89	.89	.53*
Caucasian	.88	.90	.63*
Self-Rein.			
Total	.73	.79	.65*
Asian	.67	.73	.56*
Caucasian	.75	.81	.68*
Perc. Control			
Total	.80	.73	.65*
Asian	.78	.70	.56*
Caucasian	.81	.74	.68*

\*  $p < .001$

Table 8  
Standard Multiple Regression of Self-Reinforcement and  
Perceived Control on Depression at First Test  
Administration (Total Sample; N = 205)

Variable	<u>B</u>	<u>SE B</u>	95% Conf. Int.	<u>β</u>	<u>sr<sup>2</sup></u>
Self-Rein.	-.74	.16	-1.05 to -.43	-.35*	.08
Perc. Control	-.35	.11	-.56 to -.15	-.25*	.04

R = .53\*

R<sup>2</sup> = .28

Adjusted R<sup>2</sup> = .28

\* p < .001

Table 9  
Standard Multiple Regression of Self-Reinforcement and  
Perceived Control on Depression at First Test  
Administration (Asian Subsample; n = 77)

Variable	<u>B</u>	<u>SE B</u>	95% Conf. Int.	$\beta$	<u>sr<sup>2</sup></u>
Self-Rein.	-.89	.18	-1.46 to -.31	-.37*	.10
Perc. Control	-.25	.29	.60 to -.10	-.17	.02

R = .50\*

$R^2$  = .25

Adjusted  $R^2$  = .23

\* p < .001

Table 10  
Standard Multiple Regression of Self-Reinforcement and  
Perceived Control on Depression at First Test  
Administration (Caucasian Subsample; n = 128)

Variable	<u>B</u>	<u>SE B</u>	95% Conf. Int.	$\beta$	<u>sr</u> <sup>2</sup>
Self-Rein.	-.69	.19	-1.05 to -.32	-.33*	.07
Perc. Control	-.46	.13	-.72 to -.20	-.32*	.07

R = .50\*

$R^2$  = .25

Adjusted  $R^2$  = .23

\*  $p < .001$

Table 11  
Standard Multiple Regression of Self-Reinforcement and  
Perceived Control on Depression at Second Test  
Administration (Total Sample; N = 205)

Variable	<u>B</u>	<u>SE B</u>	. 95% Conf. Int.	<u>β</u>	<u>sr<sup>2</sup></u>
Self-Rein.	-.82	.15	-1.11 to -.52	-.39*	.10
Perc. Control	-.30	.10	-.49 to -.10	-.22*	.03

R = .55\*

$R^2 = .31$

Adjusted  $R^2 = .30$

\*  $p < .001$

Table 12  
Standard Multiple Regression of Self-Reinforcement and  
Perceived Control on Depression at Second Test  
Administration (Asian Subsample; n = 77)

Variable	<u>B</u>	<u>SE B</u>	95% Conf. Int.	<u>β</u>	<u>sr<sup>2</sup></u>
Self-Rein.	-.67	.27	-1.20 to -.13	-.31*	.07
Perc. Control	-.24	.17	-.58 to -.09	-.19	.02

R = .49\*

R<sup>2</sup> = .20

Adjusted R<sup>2</sup> = .18

\* p < .001



Table 13  
Standard Multiple Regression of Self-Reinforcement and  
Perceived Control on Depression at Second Test  
Administration (Caucasian Subsample; n = 128)

Variable	<u>B</u>	<u>SE B</u>	95% Conf. Int.	<u>β</u>	<u>sr</u> <sup>2</sup>
Self-Rein.	-.89	.18	-1.24 to -.54	-.43*	.13
Perc. Control	-.36	.12	-.61 to -.12	-.25*	.04

R = .61\*

R<sup>2</sup> = .38

Adjusted R<sup>2</sup> = .37

\* p < .001

Table 14  
Standard Multiple Regression of Gender, Self-  
Reinforcement and Perceived Control on Depression at  
First Test Administration (Total Sample; N = 205)

Variable	<u>B</u>	<u>SE B</u>	95% Conf. Int.	<u>β</u>	<u>sr</u> <sup>2</sup>
Gender	3.16	1.39	.42 to 5.90	.14*	.02
Self-Rein.	-.73	.16	-1.05 to -.43	-.35**	.08
Perc. Control	-.34	.10	-.56 to -.15	-.25**	.04

R = .55\*\*

R<sup>2</sup> = .30

Adjusted R<sup>2</sup> = .29

\* p < .05

\*\* p < .001

Table 15  
Standard Multiple Regression of Gender, Self-  
Reinforcement and Perceived Control on Depression at  
Second Test Administration (Total Sample; N = 205)

Variable	<u>B</u>	<u>SE B</u>	95% Conf. Int.	<u>β</u>	<u>sr</u> <sup>2</sup>
Gender	1.69	1.33	-.94 to 4.32	.07	.006
Self-Rein.	-.81	.15	-1.10 to -.52	-.40**	.10
Perc. Control	-.29	.10	-.49 to -.10	-.21*	.03

R = .56\*\*

R<sup>2</sup> = .31

Adjusted R<sup>2</sup> = .30

\* p < .05

\*\* p < .001

Table 16  
Standard Multiple Regression of Gender, Self-  
Reinforcement and Perceived Control on Depression at  
First Test Administration (Asian Subsample; n = 77)

Variable	<u>B</u>	<u>SE B</u>	95% Conf. Int.	<u>β</u>	<u>sr</u> <sup>2</sup>
Gender	1.26	2.19	-3.10 to 5.62	.06	.003
Self-Rein.	-.88	.29	-1.46 to -.30	-.37*	.09
Perc. Control	-.25	.18	-.61 to .10	-.17	.02

R = .50\*\*

R<sup>2</sup> = .25

Adjusted R<sup>2</sup> = .22

\* p < .05

\*\* p < .001

Table 17  
Standard Multiple Regression of Gender, Self-  
Reinforcement and Perceived Control on Depression at  
Second Test Administration (Asian Subsample; n = 77)

Variable	<u>B</u>	<u>SE B</u>	95% Conf. Int.	<u>β</u>	<u>sr<sup>2</sup></u>
Gender	1.38	2.08	-2.76 to 5.52	.06	.00
Self-Rein.	-.66	.27	-1.20 to -.12	-.37*	.07
Perc. Control	-.25	.17	-.59 to .08	-.17	.03

R = .45\*\*

R<sup>2</sup> = .21

Adjusted R<sup>2</sup> = .17

\* p < .05

\*\* p < .001

Table 18  
Standard Multiple Regression of Gender, Self-  
 Reinforcement and Perceived Control on Depression at  
 First Test Administration (Caucasian Subsample; n = 128)

Variable	<u>B</u>	<u>SE B</u>	95% Conf. Int.	<u>β</u>	<u>sr</u> <sup>2</sup>
Gender	4.01	1.86	.32 to 7.70	.16*	.02
Self-Rein.	-.68	.18	-1.04 to -.32	-.33**	.07
Perc. Control	-.42	.13	-.68 to .16	-.29*	.05

R = .60\*\*

R<sup>2</sup> = .36

Adjusted R<sup>2</sup> = .34

\* p < .05

\*\* p < .001

Table 19  
Standard Multiple Regression of Gender, Self-  
Reinforcement and Perceived Control on Depression at  
Second Test Administration (Caucasian Subsample; n =  
128)

Variable	<u>B</u>	<u>SE B</u>	95% Conf. Int.	<u>β</u>	<u>sr<sup>2</sup></u>
Gender	1.25	1.81	-2.34 to 4.84	.05	.00
Self-Rein.	-.88	.18	-1.23 to -.53	-.43**	.13
Perc. Control	-.35	.13	-.60 to .10	-.24*	.04

R = .62\*\*

R<sup>2</sup> = .38

Adjusted R<sup>2</sup> = .36

\*  $p < .05$

\*\*  $p < .001$

Appendix B: Elder Life Adjustment Interview Schedule  
(ELAIS)

- Section 1: Demographics
- Section 2: Cognitive Function, NIA questionnaire
- Section 3: Autoinforme De Salud Fisica  
(Objective Health Measure)
- Section 4: Self-Perceived Health Status, NIA  
questionnaire
- Section 5: Functional Ability/ADL's Moos's RESIF
- Section 6: Activity Level, NIA questionnaire &  
Moos's RESIF
- Section 7: Part 1: Social Support-Informational,  
ISSB  
Part 2: Social Support-Tangible, ISSB  
Part 3: Social Support-Emotional, ISSB  
Part 4: Social Support-Integration,  
ISSB
- Section 8: Depression, BDI
- Section 9: Life Satisfaction, NIA questionnaire
- Section 10: Social Skills Assessment, IBS (SGE  
Section)
- Section 11: Self-Reinforcement, FSRQ-Short form
- Section 12: Life Events, 2 NIA questionnaires  
combined
- Section 13: Perceived Control Scale, Ireys
- Section 14: MMPI-L Scale (items # 1-13) Edward's  
Social Desirability Scale (#14-23)



Test Date \_\_\_\_\_  
Schedules Re-Test Date \_\_\_\_\_  
Actual Re-Test Date \_\_\_\_\_

Subject Name \_\_\_\_\_  
Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Phone \_\_\_\_\_

SS# \_\_\_\_\_

Administration:	Test	1
	Re-test	2

Interviewer's Name \_\_\_\_\_

## Demographics

To begin this interview today, I'd like to find out a little bit about your background.

1. Gender: (0) Male  
(1) Female
  
2. How old are you?
  
3. Which of the following ethnic groups do you belong to? (Circle all of which apply)

- (1) European Caucasian
- (2) American Caucasian
- (3) Hispanic
- (4) Viet-Nameese
- (5) Thai
- (6) Japanese
- (7) Chinese
- (8) Korean
- (9) Filipino
- (10) Hawaiian
- (11) Other \_\_\_\_\_ Specify

(a) How many traditions and customs do you follow in your daily life from each of the following groups?

(Note: USE VISUAL AID)

- 1 = I don't follow any traditions or customs of this group.
- 2 = I follow a few traditions and customs of this group.
- 3 = I follow many traditions and customs of this group.

4 = I follow all of the traditions and customs of this group.

- 1 2 3 4           (1) European Caucasian  
 1 2 3 4           (2) American Caucasian  
 1 2 3 4           (3) Hispanic  
 1 2 3 4           (4) Viet-Nameese  
 1 2 3 4           (5) Thai  
 1 2 3 4           (6) Japanese  
 1 2 3 4           (7) Chinese  
 1 2 3 4           (8) Korean  
 1 2 3 4           (9) Filipino  
 1 2 3 4           (10) Hawaiian  
 1 2 3 4           (11) Is there another cultural  
                   group which you identity with  
                   that hasn't been named?

Specify \_\_\_\_\_

4. a. What was the first language that you learned as a child?

- (0) English  
 (1) Other - Specify \_\_\_\_\_

b. (If applicable) At what age did you begin to use English?

- (0) N/A (always spoke English)  
 (X) Age in Years

5. How many generations has your family been in the United States up to and including your generation?

- (1) 1 Generation  
 (2) 2 Generations  
 (3) 3 Generations  
 (4) 4 Generations  
 (5) 5+ Generations

6. How many generations has your family been in Hawaii up to and including your generation?

- (1) 1 Generation
- (2) 2 Generations
- (3) 3 Generations
- (4) 4 Generations
- (5) 5+ Generations

7. a. How long have you been a resident of Hawaii?  
 b. (If applicable) What was your prior residence?  
 specify: \_\_\_\_\_

- (0) N/A (always lived in HI)
- (1) Residence other than HI

8. How long have you lived in Honolulu?

9. How long have you lived at your current address?

10. a. With how many people do you currently share your residence consistently for at least 9 months out of the year?

b. Circle those that apply:

- (1) Spouse
- (2) Child
- (3) Brother or sister
- (4) Mother
- (5) Father
- (6) Grandchild
- (7) Other relative, \_\_\_\_\_
- (8) Friend

11. What was highest grade you completed in formal education?

ELEMENTARY	1	2	3	4	5	6	7	8
HIGH SCHOOL	9	10	11	12				

COLLEGE/TRAINING      13 14 15 16 17 18 19 20

12    a. Have you ever been married?

(1) Yes

(2) No

[If no, go to item 13]

b. Are you now married, widowed, divorced, or separated?

(1) Married

(2) Widowed

(3) Divorced

(4) Separated

c. If widowed, how long have you been widowed?

13. How many children do/did you have?

14. Would you mind telling me if you collect any Social Security benefits to help you out?

(1) Yes

(0) No

15. Do you have health insurance or Medicare or Medicaid?

(1) Yes \_\_\_\_\_ (specify)

(0) No

16. Do you work at a paying job for at least nine months of the year?

(1) Yes \_\_\_\_\_ (Avg. hrs/wk)

(0) No

## Section 2

Now I'd like to ask you some questions about general information and some of them might seem silly. So please bear with me. All you need to do is answer the questions as best as you can.

(Note: Record all answers and indicate CORRECT or INCORRECT and specifically note the given answer. All responses to be scored must be given without reference to calendar, newspaper, birth certificate, or other aids to memory)

1 = CORRECT

0 = INCORRECT

1. What is the date today?

[scored correct only when the exact month, day, and year are given correctly]

2. Could you tell me what day of the week it is?

3. What is your mother's maiden name?

4. Who is the President of the United States?

[correct last name must be given]

5. Who was the President just before him?

[correct last name must be given]

6. Now I'd like you to do some arithmetic in your head. Subtract 3 from 20, and keep subtracting from each new number all the way down.

[Correct response is: 17,14,11,8,5,2]

7. What is your address?

## Section 3

Now I would like to ask you some questions about your health.

1. In the past year (since...), how many times have you gone to see a doctor for anything other than routine checkups?
2. In the past year, about how many days have you stayed in bed because of an illness or injury?  
(Estimate # of whole days)
3. In the past year, how many days have you been hospitalized?  
(Estimate # of whole days)
4. In the past year, how many days have you had to miss work or cut down on your usual activities because of an illness?  
(Record # of whole days)
5. In the past month (since...), how many times have you gone to see a doctor for anything other than routine checkups?
6. In the past month, about how many days have you stayed in bed because of an illness or injury?  
(Estimate # of whole days)
7. In the past month, how many days have you been hospitalized?  
(Estimate # of whole days)

8. In the past month, how many days have you had to miss work or cut down on your usual activities because of an illness?

(Record # of whole days)

9. Please tell me if you have been diagnosed by a physician with any of the following health problems:

1 = Yes

0 = No

- \_\_\_\_\_ Vision problems;
- \_\_\_\_\_ Hearing problems;
- \_\_\_\_\_ problems with other senses (Specify);
- \_\_\_\_\_ Asthma;
- \_\_\_\_\_ Chronic bronchitis;
- \_\_\_\_\_ Heart/Blood vessel problems (e.g., High blood pressure, Heart Disease, Stroke, High Cholesterol, chronically cold hands feet, Raynauds)
- \_\_\_\_\_ Alzheimer's disease; memory problems
- \_\_\_\_\_ Arthritis (e.g. rheumatoid-, osteoarthritis, gout)
- \_\_\_\_\_ Diabetes;
- \_\_\_\_\_ Cancer, Specify type \_\_\_\_\_;
- \_\_\_\_\_ Menopausal problems (e.g. hot flashes, dizziness, muscular weakness, sweating, irritability, mood swings)
- \_\_\_\_\_ Are there any other problems which you have been diagnosed as having that have not mentioned? Specify \_\_\_\_\_

10. How many different prescription medications are currently taking?

(1) more than 5

(0) less than 5



11. Do you have any nurses or aides visit you in your home on a regular basis to take care of you?

(1) Yes

(0) No

## Section 4

(NOTE: USE VISUAL AID)

EXTREMELY POOR	= 1
POOR	= 2
FAIR	= 3
GOOD	= 4
EXCELLENT	= 5

1 2 3 4 5 1. How would you rate your health at  
the present time on a scale of 1 to 5  
with one representing extremely poor, two  
representing poor, 3 representing fair, 4  
representing good and 5 representing  
excellent?

## Section 5

Beginning in this section I will be reading you a series of statements. Please indicate how strongly you agree with each statement by rating it on a scale of 1 to 5. 1 indicating that you strongly disagree, 2 that you disagree, 3, that you feel neutral about the statement, 4 that you agree with the statement, and 5, that you strongly agree. The following statements will be about your ability to carry out daily tasks.

(Note: USE VISUAL AID)

STRONGLY DISAGREE	= 1
DISAGREE	= 2
NEUTRAL	= 3
AGREE	= 4
STRONGLY AGREE	= 5

1 2 3 4 5 1. During the past month I have been able to prepare my own meals without difficulty.

1 2 3 4 5 2. During the past month I have been able to do my own shopping for groceries and clothes without difficulty.

1 2 3 4 5 3. During the past month I have been able to use the telephone without difficulty.

1 2 3 4 5 4. During the past month I have been able to use THE BUS as a means of transportation without difficulty.

- 1 2 3 4 5 5. During the past month I have been  
able to drive a car without difficulty.
- 1 2 3 4 5 6. During the past month I have been  
able to take care of my own appearance  
without difficulty (i.e. comb hair, shave  
etc.).
- 1 2 3 4 5 7. During the past month I have been  
able to dress and undress myself without  
difficulty.
- 1 2 3 4 5 8. During the past month I have  
usually been able to walk without the  
help of other people or supportive  
devices such as a cane, crutches, or a  
walker.
- 1 2 3 4 5 9. During the past month I have been  
able to get in and out of bed by myself  
without difficulty.
- 1 2 3 4 5 10. During the past month I have  
been able to bathe and shower by myself  
without difficulty.
- 1 2 3 4 5 11. During the past month I have  
been able to get to the bathroom on time  
without difficulty.
- 1 2 3 4 5 12. During the past month I have  
been able to make other people understand  
my needs and wishes without difficulty.
- 1 2 3 4 5 13. I would be/am able to work 15-20  
hours per week.

1 2 3 4 5 14. I am able to handle my own money  
without difficulty (i.e. handle my own  
money, balance checkbook).

## Section 6

The next set of questions is concerned with how physically active you are during a typical month. Please indicate how often you participate in each of the following activities.

(Note: USE VISUAL AID)

NEVER	= 1
OCCASIONALLY	= 2
OFTEN	= 3
VERY OFTEN	= 4
EVERYDAY	= 5

1 2 3 4 5 1. How often do you participate in active physical activities like sports or swimming?

1 2 3 4 5 2. How often do you take walks?

1 2 3 4 5 3. How often do you work in the garden, yard, or tend lanai plants?

1 2 3 4 5 4. How often do you go to movies, plays or sporting events?

1 2 3 4 5 5. Eat out at restaurants?

1 2 3 4 5 6. Read books, magazines, or newspapers?

1 2 3 4 5 7. Watch television?

1 2 3 4 5 8. Take day trips on Oahu?

- 1 2 3 4 5 9. Do volunteer work?
- 1 2 3 4 5 10. Play cards, games, or bingo with others?
- 1 2 3 4 5 11. Write letters, poems, or stories?
- 1 2 3 4 5 12. Go to visit friends and/or relatives?
- 1 2 3 4 5 13. How often do friends and relatives come to visit you in your home?
- 1 2 3 4 5 14. How often do you go for a ride in a car or a bus just for the fun of it?
- 1 2 3 4 5 15. How often do you attend religious services?
- 1 2 3 4 5 16. Go to parties?
- 1 2 3 4 5 17. Visit senior centers?
- 1 2 3 4 5 18. Attend the symphony or opera?
- 1 2 3 4 5 19. Travel away from Oahu?
- 1 2 3 4 5 20. How often do you work at a hobby?

## Section 7

## Part 1

Now I would like to read some statements about the relationships that you have with other people. Please indicate the degree to which you agree or disagree with each of the following statements.

(Note: USE VISUAL AID)

STRONGLY DISAGREE	= 1
DISAGREE	= 2
NEUTRAL	= 3
AGREE	= 4
STRONGLY AGREE	= 5

- 1 2 3 4 5 1. In the past year, I have been given advice about how to deal with a problem when I needed it.
- 1 2 3 4 5 2. In the past year, I have been given information that I needed in order to solve problems that I have had.
- 1 2 3 4 5 3. In the past year, people have given me enough feedback to help me to do things better.
- 1 2 3 4 5 4. In the past year, other people have shown interest in how I was dealing with problems.
- 1 2 3 4 5 5. In the past year, others have checked back with me to see if I followed some advice.



1 2 3 4 5 6. I am satisfied with the amount of  
help and information others have given me  
to solve problems during the past year.

## Section 7

## Part 2

STRONGLY DISAGREE	= 1
DISAGREE	= 2
NEUTRAL	= 3
AGREE	= 4
STRONGLY AGREE	= 5

1 2 3 4 5 1. During the past year, people have given or loaned me money for special occasions or when I have needed it.

1 2 3 4 5 2. During the past year, others have taken me places that I need to go when I have been unable to get there myself.

1 2 3 4 5 3. During the past year, people have given or loaned me things when I needed them.

1 2 3 4 5 4. During the past year, people were generally available to help me with jobs like household chores or yardstick when I needed them.

1 2 3 4 5 5. During the past year, people have generally been available to help me with my shopping if I've needed them.

1 2 3 4 5 6. During the past year, people have been satisfied with the practical and tangible help I have received from others.

## Section 7

## Part 3

STRONGLY DISAGREE	= 1
DISAGREE	= 2
NEUTRAL	= 3
AGREE	= 4
STRONGLY AGREE	= 5

1 2 3 4 5 1. During the past year, others have  
been available to me when I needed  
support in stressful situations.

1 2 3 4 5 2. During the past year, others have  
often let me know that I am okay just the  
way I am.

1 2 3 4 5 3. During the past year, when I was  
in need of support, others have comforted  
me by showing that they really cared  
about me.

1 2 3 4 5 4. During the past year, someone has  
listened to me talk about private  
feelings when I needed them to.

1 2 3 4 5 5. During the past year, others have  
frequently told me that they feel close  
to me.

1 2 3 4 5 6. I have felt that people have been  
interested in and concerned about me over  
the past year.

1 2 3 4 5 7. During the past year, others have  
helped me to get my mind off of problems.

1 2 3 4 5 8. I am satisfied with the amount of  
emotional support I have received from  
others over the past year.

## Section 7

## Part 4

Now I would like to read some statements about the relationships that you have with other people. Please indicate the degree to which you agree or disagree with each of the following statements.

(Note: USE VISUAL AID)

STRONGLY DISAGREE	= 1
DISAGREE	= 2
NEUTRAL	= 3
AGREE	= 4
STRONGLY AGREE	= 5

- 1 2 3 4 5 1. In the past year, I have been  
given guidance and advice to others when  
they needed it.
- 1 2 3 4 5 2. During the past year, I have been  
able to provide financial help to others.
- 1 2 3 4 5 3. During the past year, others have  
talked over their problems and private  
feelings with me.
- 1 2 3 4 5 4. During the past year, I have been  
able to provide transportation to others.
- 1 2 3 4 5 5. During the past year, I have been  
or loaned things that others have needed  
other than money.
- 1 2 3 4 5 6. During the past year, I have

helped others with their household chores  
when they needed me to.

1 2 3 4 5 7. During the past year, I have  
helped others do their shopping when they  
needed me to.

1 2 3 4 5 8. During the past year, I have  
spent time with others when they were in  
a stressful situation and needed support.

1 2 3 4 5 9. During the past year, I have  
comforted others by showing that I really  
care about them.

1 2 3 4 5 10. During the past year, I have let  
others know that I am interested and  
concerned about their well-being.

1 2 3 4 5 11. During the past year, I have  
been given suggestions to others on how  
to deal with problems.

1 2 3 4 5 12. I am satisfied with the amount  
of help I have been able to provide to  
others over the past year.

## Section 8

Now I am going to read some statements pertaining to your mood during the past two weeks.

(Note: USE VISUAL AID)

STRONGLY DISAGREE	= 1
DISAGREE	= 2
NEUTRAL	= 3
AGREE	= 4
STRONGLY AGREE	= 5

1 2 3 4 5 1. I have been feeling sad during the past two weeks.

1 2 3 4 5 2. I have been feeling discouraged about the future.

1 2 3 4 5 3. I did not feel like a failure in the past two weeks. (R)

1 2 3 4 5 4. I have been getting as much satisfaction out of things as usual. (R)

1 2 3 4 5 5. I have been feeling quite guilty most of the time.

1 2 3 4 5 6. I have been feeling like I am being punished.

1 2 3 4 5 7. I have been feeling disappointed in myself.

1 2 3 4 5 8. I have felt as though I am worse than anybody else.

- 1 2 3 4 5 9. I have had thoughts of harming myself.
- 1 2 3 4 5 10. I have been crying more than usual.
- 1 2 3 4 5 11. I have been feeling irritated all the time.
- 1 2 3 4 5 12. I have been interested in being with other people.
- 1 2 3 4 5 13. I have had greater difficulty making decisions during the past two weeks.
- 1 2 3 4 5 14. I feel that I am not as attractive as I was when I was younger.
- 1 2 3 4 5 15. I have been able to work as well as usual.
- 1 2 3 4 5 16. I have been sleeping as well as usual.
- 1 2 3 4 5 17. I have been feeling more tired than usual.
- 1 2 3 4 5 18. My appetite has been normal. (R)
- 1 2 3 4 5 19. Lately, I have been more worried about my health than usual.
- 1 2 3 4 5 20. I have lost weight without



trying to.

(\* Dropped Item #21)

## Section 9

This next group of statements I am going to read have to do with the way people feel about their lives.

(Note: USE VISUAL AID)

STRONGLY DISAGREE	= 1
DISAGREE	= 2
NEUTRAL	= 3
AGREE	= 4
STRONGLY AGREE	= 5

1 2 3 4 5 1. As I grow older things seem better than I expected.

1 2 3 4 5 2. I am just as happy as when I was younger.

1 2 3 4 5 3. These are the best years of my life.

1 2 3 4 5 4. I get bored with most of the things that I do. (R)

1 2 3 4 5 5. As I look back on my life, I am fairly well satisfied.

1 2 3 4 5 6. I have gotten most of the important things I've wanted out of my life.

1 2 3 4 5 7. I am satisfied with what I have accomplished in my lifetime so far.

1 2 3 4 5 8. I have gotten pretty much what I  
expected out of life.

1 2 3 4 5 9. I expect good things to happen to  
me in the future.

1 2 3 4 5 10. I am satisfied with my daily  
routine.

## Section 10

I am going to read some statements about your relationships with others. Again, please indicate how strongly you agree or disagree with each statement.

(Note: USE VISUAL AID)

STRONGLY DISAGREE	= 1
DISAGREE	= 2
NEUTRAL	= 3
AGREE	= 4
STRONGLY AGREE	= 5

- 1 2 3 4 5 1. When people talk too much and bore me, I try to avoid embarrassing them by listening patiently or finding a tactful way to change the subject.
- 1 2 3 4 5 2. I usually wait for other people to speak to me before I speak to them.
- 1 2 3 4 5 3. I get embarrassed easily.
- 1 2 3 4 5 4. When talking to other people, I am quick to give my opinions.
- 1 2 3 4 5 5. When another person is mean to me, I am quick to give my opinions.
- 1 2 3 4 5 6. I am able to give constructive criticism to others.
- 1 2 3 4 5 7. I resent family members or close friends when they remind me to do daily tasks.

- 1 2 3 4 5 8. I feel uncomfortable when someone  
compliment me for having done something  
good.
- 1 2 3 4 5 9. I worry about what other people  
think of me.
- 1 2 3 4 5 10. I sometimes feel that my opinion  
is not very important.
- 1 2 3 4 5 11. I tend to help many of my  
friends make decisions.
- 1 2 3 4 5 12. When I see a family member or  
close friend doing something that might  
be harmful to them I am able to give  
constructive criticism.
- 1 2 3 4 5 13. I often argue with others.
- 1 2 3 4 5 14. I would assume a leadership role  
if it were necessary.
- 1 2 3 4 5 15. I am able to accept  
constructive criticism from others.
- 1 2 3 4 5 16. I am able to respond  
constructively when others are rude to  
me.
- 1 2 3 4 5 17. I am able to give constructive  
criticism to a family member or close  
friend.

- 1 2 3 4 5 18. I am able to get involved in group discussions.
- 1 2 3 4 5 19. When I am annoyed by someone I am close to and respect I usually hide my feelings.
- 1 2 3 4 5 20. Other people think that I am a good leader.
- 1 2 3 4 5 21. If a friend hit me, I would hit back.
- 1 2 3 4 5 22. It is easy for me to express love and affection to significant others.
- 1 2 3 4 5 23. I usually go along with what others want me to do even if I don't really want to do it.
- 1 2 3 4 5 24. I usually wait and let other people organize projects.
- 1 2 3 4 5 25. If I left a store and later realized that the cashier had not given me all of my change back, I would go back to the store and ask for the rest of my change.
- 1 2 3 4 5 26. I feel that I need to learn to stop letting people tell me what to do.
- 1 2 3 4 5 27. When I feel that someone has been unfair, I usually tell that person how I feel.

## Section 11

This next group of items concern your beliefs and attitudes. Please indicate how strongly you agree or disagree with each statement.

(Note: USE VISUAL AID)

STRONGLY DISAGREE	= 1
DISAGREE	= 2
NEUTRAL	= 3
AGREE	= 4
STRONGLY AGREE	= 5

1 2 3 4 5 1. When I am not satisfied with something I have done, I am still able to feel good about myself.

1 2 3 4 5 2. I can stick to boring tasks that have to be done without anyone pushing me.

1 2 3 4 5 3. I frequently think unhappy things about myself.

1 2 3 4 5 4. I often blame and criticize myself when things go wrong.

1 2 3 4 5 5. I find that sometimes I feel self-confident and at other times I do not feel so sure of myself.

1 2 3 4 5 6. When I've done something well and feel good about it, I feel encouraged to take on new tasks.

1 2 3 4 5 7. I find that I feel better when I  
think positively about myself.

1 2 3 4 5 8. I keep up my self-confidence by  
remembering the successes I have had.

1 2 3 4 5 9. When someone criticizes me, I  
lose my self-confidence for a long time.

1 2 3 4 5 10. I feel that I have a lot of good  
qualities.



## Section 12

I would like you to indicate which of the following events has happened to you in the past year.

Instructions: Ask the subject whether each of the events below has occurred during the past year. If they check an event, inquire about how upsetting the event was using the scale on the left. ("Can you tell me on a scale of 1 to 5 how upsetting this was. 1 will represent not at all, while 5 will represent extremely upsetting.").

(Note: USE VISUAL AID)

NOT AT ALL	= 1
A LITTLE	= 2
MODERATELY	= 3
FAIRLY MUCH	= 4
EXTREMELY	= 5

1 2 3 4 5 1. Had to give up a hobby or sport.

1 2 3 4 5 2. Death of a spouse

1 2 3 4 5 3. Death of one or more of your  
children.

1 2 3 4 5 4. Serious accident or illness.

1 2 3 4 5 5. Been hospitalized.

1 2 3 4 5 6. Spouse, close friend, or relative  
had serious accident or illness.

- 1 2 3 4 5 7. Spouse, close friend, or relative was hospitalized.
- 1 2 3 4 5 8. Someone moved into your home.
- 1 2 3 4 5 9. Someone moved out of your home.
- 1 2 3 4 5 10. One or more of your children got married.
- 1 2 3 4 5 11. One or more of your grandchildren got married.
- 1 2 3 4 5 12. One or more of your children, close friends, or relatives got divorced.
- 1 2 3 4 5 13. One or more of your children had a baby.
- 1 2 3 4 5 14. Change in work duties or professional responsibilities.
- 1 2 3 4 5 15. Increase in debts or bills to pay.
- 1 2 3 4 5 16. Became bored with daily routine.
- 1 2 3 4 5 17. Too little positive contact with family or friends.
- 1 2 3 4 5 18. Moved to a new residence.
- 1 2 3 4 5 19. Separated from friend or relative because of a move.

1 2 3 4 5 20. Had a serious argument with a  
spouse, close friend or relative.

1 2 3 4 5 21. Been a victim of a crime.

## Section 13

Please indicate the degree to which you agree with each of the following statements.

(Note: USE VISUAL AID)

STRONGLY DISAGREE	= 1
DISAGREE	= 2
NEUTRAL	= 3
AGREE	= 4
STRONGLY AGREE	= 5

1 2 3 4 5 1. I have a good idea of what is expected of me.

1 2 3 4 5 2. I feel that I can say just about anything that is on my mind.

1 2 3 4 5 3. If I ask someone to do something, they usually do it.

1 2 3 4 5 4. If I don't want to say anything I don't have to.

1 2 3 4 5 5. It seems that other people are always telling me what to do.

1 2 3 4 5 6. When I say or do something, the people around me usually pay attention.

1 2 3 4 5 7. I'm never sure what is going to happen next.

1 2 3 4 5 8. What I have to say counts a lot.

- 1 2 3 4 5 9. If I don't want to do anything I  
don't have to.
- 1 2 3 4 5 10. What I do makes no difference to  
the people around me.
- 1 2 3 4 5 11. I usually don't have much  
control over what happens.
- 1 2 3 4 5 12. No matter what I say or do,  
things aren't going to change.
- 1 2 3 4 5 13. If someone or something bothers  
me, I just have to put up with it.
- 1 2 3 4 5 14. I can do a lot of different  
things.
- 1 2 3 4 5 15. I'm often able to predict what  
will happen around me.

## Section 14

This next group of questions that I am going to ask you have to do with how you may describe yourself. There are no right or wrong answers. Please indicate the degree to which you agree with each of the following statements.

(Note: USE VISUAL AID)

STRONGLY DISAGREE	= 1
DISAGREE	= 2
NEUTRAL	= 3
AGREE	= 4
STRONGLY AGREE	= 5

1 2 3 4 5 1. Sometimes when I am not feeling well, I get irritable and angry.

1 2 3 4 5 2. Once in a while I think of things that are too bad to talk about.

1 2 3 4 5 3. I sometimes feel like swearing.

1 2 3 4 5 4. Once in a while I laugh at a dirty joke.

1 2 3 4 5 5. I sometimes get angry.

1 2 3 4 5 6. Sometimes at elections I vote for men or women whom I know very little about.

1 2 3 4 5 7. I gossip a little at times.

- 1 2 3 4 5 8. There are some people I do not like.
- 1 2 3 4 5 9. I like to know some important people because it makes me feel important.
- 1 2 3 4 5 10. I would rather win than lose in a game.
- 1 2 3 4 5 11. If social security sent me an extra check by accident, and I was sure I wouldn't be caught, I'd keep it.
- 1 2 3 4 5 12. Once in a while I put off until tomorrow what I ought to do today.
- 1 2 3 4 5 13. Sometimes I do not tell the truth.
- 1 2 3 4 5 14. I am happy most of the time.  
(MMPI #107)
- 1 2 3 4 5 15. It makes me impatient to have people ask my advice or otherwise interrupt me when I am working on something important. (MMPI #148)
- 1 2 3 4 5 16. It doesn't particularly bother me to see animals suffer. (MMPI #218)
- 1 2 3 4 5 17. I usually expect to succeed in things I do (MMPI #257)
- 1 2 3 4 5 18. I am easily embarrassed. (MMPI #321)

1 2 3 4 5 19. I feel anxiety about something  
or someone almost all of the time. (MMPI  
#337)

1 2 3 4 5 20. I am not usually self-conscious.  
(MMPI #371)

1 2 3 4 5 21. People often disappoint me.  
(MMPI #383)

1 2 3 4 5 22. It makes me nervous to have to  
wait. (MMPI #439)

1 2 3 4 5 23. I shrink from facing a crisis or  
difficulty. (MMPI #549)



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