The PSYCHOSOCIAL RISK FACTOR SURVEY (PRFS)

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Introduction

Psychosocial risk factors bear a significant effect on cardiac disease comparable to the more publicized factors such as serum cholesterol, hypertension, cigarette smoking, and diabetes[1]. In particular, depression, anxiety, anger/hostility, and social isolation each affect the incidence, progression and mortality rates of coronary artery disease (CAD).

Depression is associated with accelerated progression of arterial stenosis[2], increased long term risk of CAD[3,4] and increased risk of myocardial infarction (MI)[5]. It is also associated with increased risk of morbidity and mortality for patients afflicted with CAD[3,6] and for patients who have had an MI[7,8].

Anxiety heightens the risk of MI [9] and atrial fibrillation[10] for those without a previous history of CAD. As well, patients with pre-existing CAD tend to fare more poorly when they also suffer from anxiety[11,12]. More extreme anxiety in the form of panic attacks also increases risk of cardiovascular disease[13].

Anger and hostility display an association with angina[14], increased coronary artery calcification[15, 16], progression of severity of hypertension[17], progression of CAD[18, 19], platelet aggregation [20], vasoconstriction[21], and insulin resistance[22]. In fact, one small study on the efficacy of a psychosocial intervention for hostility management for CAD patients found that this intervention reaped an overall savings in rehospitalization cost of approximately $2 for every $1 spent for the intervention[23].

Finally, social isolation appears to impact CAD in several ways, including increased relative incidence of CAD[24], accelerated progression of arterial stenosis[25], increased ambulatory blood pressure[26] and increased coronary artery calcification.[27] Social isolation also influences mortality in heart failure patients[28] and those with generalized CAD. [29]

These psychosocial risk factors are among those specifically noted in the AHA/AACVPR 2007 Scientific Update of the Core Components of Cardiac Rehabilitation Programs. This Scientific Update recommends that programs "identify psychological distress as indicated by clinically significant levels of depression, anxiety, anger or hostility, social isolation, marital/family distress, sexual dysfunction/adjustment, and substance abuse (alcohol or other psychotropic agents), using interview and/or standardized measurement tools".[30]

The PRFS also assesses another important psychological construct—emotional guardedness—which is frequently referred to as "defensiveness" in the psychological literature. Emotional guardedness can be defined as a tendency to be reserved in sharing or admitting to what might be perceived as personal flaws or imperfections. Emotional guardedness can also be a low awareness of these imperfections.

While this construct is not noted in the AHA/AACVPR Core Components [30], research suggests emotional guardedness (or defensiveness) can influence cardiac health in several ways,

including increased blood pressure[31,32,33] and physiological reactivity[34], and decreased vagal tone[35]. Consideration of this construct as a psychosocial risk factor for CAD in its own right warrants continued research, but it is included in the PRFS for its utility as a measure of potential under-reporting of symptoms on the other scales. Essentially, other research from construction of highly regarded psychological tests indicates that the more emotionally guarded patient is less likely to endorse negative symptoms such as these corresponding to the psychological risk factors on the PRFS. Denollet, et.al. found that cardiac patients who were more guarded have a two-fold risk of death or myocardial infarction despite reporting low levels of the more common psychosocial risk factors.[36] It is anticipated that a skilled interpreter can clarify when a patient's elevated Emotional Guardedness score indicates under-reporting on the other PRFS scales.

The literature regarding the association of these psychosocial risk factors and pulmonary disease is less abundant compared with the cardiac disease. However, there are many studies that support this relationship as well. Depression has been found to be associated with Chronic Obstructive Pulmonary Disease (COPD)[37], regardless of the use of long term oxygen therapy[38] or severity of the COPD.[39] Depression also impacts exacerbation of COPD and hospitalizations[40] ,treatment outcomes[41], and mortality[39].

Anxiety is also strongly associated with COPD[38,42,39], Anxiety affects exacerbation of symptoms in COPD patients[40] and rehospitalization[43] and treatment outcomes[41].

Anger and hostility have been found to influence a decline in lung function in older men[44] and in younger adults[45].

Social Isolation has been found to be associated with complications with COPD. For example, it increases the risk of hospitalization[46],

The Authors

The Psychosocial Risk Factor Survey (PRFS) was created by psychologists Dr. Glenn Feltz and Dr. Kent Eichenauer. Drs. Feltz and Eichenauer are clinical and consulting psychologists who have been licensed and in clinical practice since 1987. They began consulting with cardiopulmonary rehabilitation programs in 1992. Their primary duties currently with these programs include consultation with staff, providing assessment of patients, and meeting with patients individually and in group settings. They have presented on numerous topics related to psychosocial aspects of cardiopulmonary patients.

Purpose

The Psychosocial Risk Factor Survey was initially conceived to meet the growing need for a singular assessment tool to comprehensively and efficiently measure the known

psychosocial risk factors within cardiopulmonary rehabilitation programs. The authors recognized that psychosocial risk factors often were comprehensively assessed in patients because it was too burdensome on the patients and the staff to administer multiple individual tests or to administer one multifactored test that unnecessarily measured additional factors that were not supported by research.

As well, the American Association of Cardiovascular and Pulmonary Rehabilitation included in its recommendation of program core components the requirement of measuring psychosocial risk factors.

The purpose of the PRFS is to provide cardiopulmonary rehabilitation programs with an efficient assessment tool that is valid, reliable, and easy to administer and score. This will allow the program staff and the patient to learn if there are any psychosocial risk factors that will influence the patient's success in the cardiopulmonary rehabilitation program and in battling the disease

Development

The items for the PRFS were created intuitively by the authors based on their experience with cardiopulmonary rehabilitation patients. The initial pool of 158 items was developed to reflect statements patients have spoken or would be expected to speak during the authors' consultations with these patients. They were not intended to be a checklist of symptoms, but rather items that would more likely be reflective of underlying symptomatology. The premise was to encourage patients to endorse items in an instinctive manner. It was anticipated that patients would be more apt to respond directly and honestly and with less guardedness if these items resonated with them in a way that reflected their own thoughts. These items were written at a 4th grade reading level and were formatted on a 5-point scale from Strongly Agree to Strongly Disagree.

This original pool of items was administered to 188 patients of six cardiopulmonary rehabilitation programs located in Ohio, Wisconsin, Iowa and Nebraska from 2002 through 2004. Concurrently, these patients were administered at least one of several tests to measure the individual psychosocial risk factors that were intended to be assessed by the PRFS. These comparison measures were the Beck Depression Inventory-II (BDI-II)[47], the Beck Anxiety Inventory (BAI)[48], the State-Trait Anger Expression Inventory-2 (STAXI-2)[49], the Life Stressors and Social Resources Inventory-Adult Form (LISRES-A)[50], and the Marlowe-Crowne Social Desirability Scale (MCSDS)[51]. The items from the original research version of the PRFS were individually analyzed for their predictive validity corresponding to the psychosocial risk factor they were designed to measure. This individual item analysis was based on the item's correlation with the construct as measured by each of the comparison assessment tools noted above.

Items were analyzed for inclusion into the next phase of test development using a combination of four criteria to form the

basis for discussion and agreement of the authors. These criteria were:

- high correlations with the non-PRFS measure of the target construct
- low correlations with measures of the non-target constructs
- contribution to breadth of content for the measured construct
- clinical judgment of the item's relevance to the construct and intended cardiac population

The authors considered the individual items' correlations with the independent-comparison measure of the construct intended to be measured by the item. Most items selected for the PRFS scales had strong correlations with the pertinent independent-comparison measures. While some items yielded lower correlations than the preferred correlation coefficient of r>.3, the authors judged that there was clinical value to some of these items that reflected a broader dimension of the measured construct.

The most current standardization research involved two samples. The first sample included 256 patients from five cardiopulmonary rehabilitation programs in the Midwestern United States who were administered the PRFS and one or more of the comparison measures at an early point in their rehabilitation program. The second sample consisted of 79 patients who were undergoing cardiopulmonary rehabilitation at a hospital based program in Ohio. These patients were administered the PRFS and the Symptom Checklist-90-Revised (SCL-90-R)[52] at the beginning of their rehabilitation program. The mean and standard deviation of the age of these samples was 63.9 years and 10.7 years, respectively. The sample consisted of 62.1 % male and 37.9 % female patients. Finally, 67.6 % of the patients were known to be admitted to the program for cardiac problems, while 16.4 % were known to be involved for pulmonary problems. There was an additional 16% of the sample who did not indicate the nature of their admission.

The results of each patient's scores on the PRFS scales were compared to the corresponding construct as measured by the comparison tools mentioned above in the first sample. For example the Depression Scale of the PRFS was compared with the BDI-II, the Hostility Scale of the PRFS was compared with two pertinent subscales of the STAXI-2, etc. In the second sample, the patients' scores on the PRFS were compared with similar measure on the SCL-90-R. For example, the Anxiety Scale of the PRFS was compared with the Anxiety Scale of the SCL-90-R. An advantage of adding the SCL-90-R as a comparison measure was that it contained subscales that specifically measure several of the factors that the PRFS measures *and* it contained a global measure of emotional distress against which a total PRFS distress score could be compared. Pearson Correlation coefficients for all of these comparisons can be found on Tables 1 and 2.

Administration and Scoring

The PRFS was purposefully designed for the flow and quick pace of the typical cardiopulmonary rehabilitation program. It was intended to be a useful tool for Phase 2 or 3 patients in assessing for psychosocial risk factors and performing outcomes research. The PRFS is not limited to these uses as the authors see the potential for use in inpatient settings and primary medical prevention settings. Most of the comparison measures, such as the BDI-II, have been used in cardiopulmonary research. Thus, it would be expected that the PRFS would perform well in assessing patients at most stages of their disease. Continued research is anticipated in these areas.

Typical administration time is approximately 10-15 minutes. Patients should take the survey with privacy within the rehab facility. However, it may be completed at home if it is standard procedure to complete a packet of other forms as part of the admission process. The patient should be clearly informed of the necessity of taking this survey without additional influence from others, such as a spouse or other support person.

Staff should ensure that the patient can read at a 4^{th} grade level. One simple measure of this ability might be to ask if the patient is able to reasonably read a typical newspaper. There are no current norms that reflect patient response patterns when the PRFS items are read to the patient.

The following instructions are recommended for the administration of this test.

We know that there are some psychosocial risk factors that can also affect our health. We would like you to complete this survey to help us to learn if any of these factors affect you.

*As you can see, there are 70 statements for you to respond to. I would like you to firmly draw an **X** in the box that has the number that describes most accurately how much you agree or disagree with these statements. Please note that this survey includes items on the back side of this form for you to complete also.*

Please respond to the items as they apply to you "these days", and do not spend much time on any one item. Try to respond with your first reaction, and please only mark one response for each item.

To score the PRFS perform the following steps:

Step 1: Peel off both the front and back pages revealing the inside page that displays the score sheet on the front and the profile form on the back. The scoring procedure is performed on this carbonless sheet. Please note that the left side of the score sheet contains circles with the patient's responses marked through the assorted numbers for the questions 1-36. The right side of the score sheet contains squares with the patient's responses for questions 37-70.

Step 2: Transfer the number contained in each of the circles on the left side into the corresponding circle on the same line in one of the columns in the middle section.

Step 3: Transfer the number contained in each of the squares on the right side into the corresponding square on the same line in one of the columns in the middle section.

Step 4: Add each score under the separate columns for the five risk factors and write the sums in the spaces at the bottom. Please note, some columns contain boxes with both a circle and a square. Both of these numbers should be added into the column total score.

Step 5: Flip the score sheet over to reveal the profile form. Fold over the top of this profile form so the sums from each scale on the opposite side can easily be transferred to the corresponding spaces below the profile form.

Step 6: Add these totals of the PRFS clinical scales. This sum is then entered as the TDS scale amount on the space on the left.

Step 7: On this profile form, circle the number on each scale that matches the total below. For example, if a patient scored a 16 on the Depression scale, the 16 on the column of numbers on this scale would be circled. Please note, this score of 16 corresponds with a T-score of 45 and a percentile ranking of 32.

Step 8:Now enter the patient's name, DOB and date of test at the top and complete the optional patient information in the box on the lower left.

Interpretation

Ranges of Severity

Please note the standardized measurements on the profile form include T-scores and percentile ranks. The mean scores of this standardization sample equal a T-score of 50 with a standard deviation of 10 T-score points.

The ranges of severity illustrated on the profile form are based on similar ranges of the popularly used BDI-2 and the BAI. These instruments categorize results into Minimal, Mild, Moderate and Severe ranges. The cutoffs for these ranges in the PRFS are based upon the BDI-2 and BAI results of this standardization sample. For example, patients who scored in the Mild range of depression on the BDI-2 were in the 66^{th} to 83^{rd} percentile relative to the entire patient sample. As such, this 66^{th} percentile, or a T-score of 54 was used to demarcate the threshold of the Mild range of severity on the PRFS. Similarly, the 84^{th} percentile marks entry into the Moderate range and the 95^{th} percentile begins the Severe range. Table 3 offers a graphical view of these ranges and corresponding percentiles.

Certainly, scores below the Mild range are preferred for patients taking the PRFS. As scores approach the Severe range, they can indicate increasing concern for the psychosocial risk factor. There are other factors that need to be considered to corroborate the results of the PRFS, including evidence from a personal interview, observations of a spouse or

close support person, as well as general demeanor of the patient.

Suicidality

Please note the patient's response to question #12 that is highlighted. This is a question that asks about suicidal thoughts in the following format, *"I think more about ending my life lately."* If a 3 or a 4 is indicated on the score sheet, then this means the patient is endorsing this critical item by indicating he or she either "agrees" or "strongly agrees" with this statement. Obviously, this endorsement should be addressed with the patient as quickly as possible. This manual is not intended to be a guide for assessing suicidal lethality. However, the staff member should certainly discuss with the patient the reasonable concern regarding this response and should offer assistance in addressing this issue with the patient through an immediate referral of an evaluation with a mental health professional.

Scale Interpretation

The results of the PRFS generally should be shared with the patient and feedback solicited regarding the patient's thoughts on the results. If the patient agrees with results that are significant, then he or she should be referred for specialized assistance to a qualified mental health professional or to his or her physician.

Depression: Higher scores on the Depression Scale suggest the patient may be experiencing some combination of unhappiness, a diminished or excessive appetite, insomnia or excessive sleeping, low energy or fatigue, thoughts of helplessness and hopelessness, concentration or memory difficulties, and a lack of interest in things that used to be enjoyable.

Anxiety: Increased scores on the Anxiety Scale indicate the probability that the person is experiencing some combination of symptoms of anxiety including excessive worry, feeling keyed up or on edge, irritability, muscle tension, fatigue and insomnia.

Anger/Hostility: Elevated scores on the Hostility Scale suggest the patient may frequently experience angry feelings and perceive that he or she is being treated unfairly by others. He or she may experience difficulties in feeling frustrated too easily, may be prone to excessive cynicism and may express anger in inappropriate or destructive ways.

Social Isolation: Higher scores on the Social Isolation Scale indicate the patient may have low social support in his/her life, may have difficulty accepting the support of others, or may perceive that others are not supportive. In particular, this patient may not have available a spouse, friends or other family members.

Emotional Guardedness: The Emotional Guardedness Scale serves two purposes. First, this trait involves a patient's overconcern with others' perceptions of himself or herself. Therefore, the patient is unlikely to reveal deeply felt personal concerns even with someone who can be trusted. This

disclosure simply involves too much emotional vulnerability for the patient.

Emotional Guardedness is frequently a difficult concept for patients to grasp. Many patients with elevated scores often do not have the insight into their guardedness. To assist in providing feedback to the patient, the following interpretation can serve as a starting point:

> *Patients with higher scores on this scale can sometimes be seen as more private and less likely to reveal much of themselves to others. For example, it might be difficult to express thoughts or feelings with others, especially those things that might make us feel more vulnerable. We can sometimes be more concerned with what others might think of us and frequently hold things back, even in those close relationships where we should be able to really trust the other people, like a spouse in a good marriage. This way of doing things can lead to emotional and physical problems for people.*

While this emotional guardedness can be viewed as predisposing one to cardiovascular reactivity, it can also be a tool to examine the patient's scores on the other scales on the PRFS. It would be expected that if a patient is more emotionally guarded, the patient would be more likely to minimize his or her responses on the other scales.

Total Distress Scale: This scale is designed to measure a patient's overall level of emotional distress and is used for research purposes only at the printing of this manual.

Statistical Properties

The analyses below were performed on the combined samples of both phases of the validation process. As noted earlier, Tables 1 and 2 display the correlations of the PRFS scales with the assorted comparison measures. It is noted that all of these correlations are significant at the $p<.01$ level.

Patient scores on the PRFS scales were analyzed based on gender, cardiac or pulmonary diagnosis, and age. These results are seen in Tables 4 and 5. These analyses indicate that, in general, females obtained higher scores on scales measuring Depression and Anxiety. However, males scored higher on the Anger/Hostility scale.

Table 5 displays the comparisons of diagnosed with either cardiac or pulmonary disease on the PRFS scales. While differences were noted, these differences did not reach statistical significance.

An analysis of patient scores by age in Table 6 suggests that younger patients are more likely to obtain higher scores on the PRFS scales than older patients. In essence, older patients might be seen to display lower levels of these psychosocial risk factors measured by the PRFS.
Tables 7 through 15 display the signal detection ratios for the assorted PRFS scales compared to the existing scales. These ratios compare patients whose scores met the cutoffs on the

PRFS scales with those whose scores met the cutoffs published in the manuals of the corresponding existing tests or whose scores were approximately one standard deviation from the mean if cutoffs were not published. It is noted again that the intent of the PRFS is to be a screening measure. As such, it is appropriate to assign a cutoff for the PRFS that would be more inclusive than exclusive. This allows the staff to become more aware of situations where the patient may have tendencies in the direction of the risk factor and warrants further follow up evaluation with the patient.

An important quality of the Emotional Guardedness scale is displayed in Table 16. As described above, Emotional Guardedness can be seen to be a form of a psychological risk factor in itself. However, its intent for inclusion in the PRFS was also to attempt to screen for patients' under-reporting of psychological issues in the other PRFS scales. As such, for example, it would be expected that as one is more emotionally guarded, he or she will attempt to minimize, or under-report, how depressed or anxious he or she might be. Therefore, it would be expected that there would be some degree of negative correlation between the PRFS Emotional Guardedness scale and the other PRFS scales. The correlations displayed in Table 10 confirm this expected inverse correlation. Consequently, it is reasonable to consider the prospect of some level of minimizing on one or more of the other scales when the Emotional Guardedness is elevated.

An alternative explanation for this inverse relationship is that possibly patients with higher Emotional Guardedness scores attain lower scores on the other clinical scales because they truly are emotionally healthier. There can be sound reason behind this explanation. However, one must be careful not to leap to this conclusion too quickly. Pending continued research, both possibilities should be considered.

Regardless of which explanation is appropriate in the particular patient's circumstances, the likelihood of the physiological reactivity that is consistent with the tendency to be more guarded is what makes this construct a risk factor.

Table 17 displays results of the Cronbach's Alpha for each PRFS scale. As can be seen, this validity measure indicates a respectable measure of internal consistency for these scales.

Tables

Table 1

Comparison of PRFS constructs with independent measures

Independent Measures	PRFS Constructs				
	Depression	**Anxiety**	**Anger/ Hostility**	**Social Isolation**	**Emotional Guardedness**
Beck Depression Inventory-2	.81*				
Beck Anxiety Inventory		.62*			
STAXI-2 ***Trait Anger***			.72*		
STAXI-2 ***Anger Expression Index***			.65*		
LISRES-A ***Spouse Resource***				.52*	
LISRES-A ***Children Resource***				.39*	
LISRES-A ***Family Resource***				.34*	
LISRES-A ***Friend Resource***				.47*	
Marlowe Crowne SDS					.40*

*Correlations are Pearson Product Coefficient Correlations, two tailed, with a level of significance p< .01.

Table 2

Comparison of PRFS constructs with SCL-90-R constructs

SCL-90-R Scales	PRFS Constructs			
	Depression	**Anxiety**	**Hostility**	**Total Distress Index**
Depression	.74*			
Anxiety		.56*		
Hostility			.59*	
General Severity Index				.70*

*Correlations are Pearson Product Coefficient Correlations, two tailed, with a level of significance p< .01.

Table 3

Percentile Ranges of Severity

Range Label	Percentiles
Mild	66 - 83
Moderate	84 - 94
Severe	95 - 99

Table 4

Comparison of Male and Female scores on the PRFS Scales

PRFS Scale	Gender	Mean	Significance
Depression	Male	19.5	p<.01
	Female	22.2	
Anxiety	Male	20.5	p<.01
	Female	24.4	
Anger/Hostility	Male	23.7	p<.05
	Female	21.7	
Social Isolation	Male	19.7	not signif
	Female	20.4	
Emotional Guardedness	Male	24.6	not signif
	Female	23.8	

Table 5

Comparison of Cardiac and Pulmonary Patients' scores on the PRFS Scales

PRFS Scale	Disease	Mean	Significance
Depression	Cardiac	20.1	not signif
	Pulmonary	22.4	
Anxiety	Cardiac	21.7	not signif
	Pulmonary	23.7	
Anger/Hostility	Cardiac	22.7	not signif
	Pulmonary	24.1	
Social Isolation	Cardiac	19.9	not signif
	Pulmonary	20.4	
Emotional Guardedness	Cardiac	24.3	not signif
	Pulmonary	23.2	

Table 6

Comparison of Age with Patients' scores on the PRFS Scales

	Depression	Anxiety	Hostility	Soc Isolation
Age	-.21*	-.25*	-.29*	-.17*

*Correlations are Pearson Product Coefficient Correlations, two tailed, with a level of significance p< .01.

Table 7

Signal Detection comparison for PRFS Depression Scale

		PRFS Depression	
		Positive	Negative
BDI-2	Positive	29.3 %	6.9%
	Negative	8.7%	55.1%

Table 8

Signal Detection comparison for PRFS Anxiety Scale

		PRFS Anxiety	
		Positive	Negative
BAI	Positive	24.7%	9.5%
	Negative	14.4%	51.4%

Table 9a

Signal Detection comparison for PRFS Hostility Scale

		PRFS Hostility	
		Positive	Negative
STAXI-2 Trait Anger	Positive	14.8 %	20.7%
	Negative	20.3%	44.3%

Table 9b

Signal Detection comparison for PRFS Hostility Scale

		PRFS Hostility	
		Positive	Negative
STAXI-2 Anger Exp'n	Positive	21.2%	15.4%
	Negative	14.7%	48.6%

Table 10a

Signal Detection comparison for PRFS Social Isolation Scale

		PRFS Social Isolation	
		Positive	Negative
LISRES-A Spouse Support	Positive	6.4%	33.0%
	Negative	28.4%	32.1%

Table 10b

Signal Detection comparison for PRFS Social Isolation Scale

		PRFS Social Isolation	
		Positive	Negative
LISRES-A Family Support	Positive	9.3%	26.5%
	Negative	26.5%	37.7%

Table 10c

Signal Detection comparison for PRFS Social Isolation Scale

		PRFS Social Isolation	
		Positive	Negative
LISRES-A Children Support	Positive	9.9%	27.6%
	Negative	26.3%	36.2%

Table 10d

Signal Detection comparison for PRFS Social Isolation Scale

		PRFS Social Isolation	
		Positive	Negative
LISRES-A Friend Support	Positive	5.5%	31.7%
	Negative	29.9%	32.8%

Table 11

Signal Detection comparison for PRFS Emotional Guardedness Scale

		PRFS Emotional Guardedness	
		Positive	Negative
Marlowe-Crowne	Positive	20.8%	16.9%
	Negative	16.9%	45.4%

Table 12

Signal Detection comparison for PRFS Depression Scale with the SCL-90-R Depression Scale

		PRFS Depression	
		Positive	Negative
SCL-90-R Depression	Positive	27.1%	15.7%
	Negative	7.1%	50.0%

Table 13

Signal Detection comparison for PRFS Anxiety Scale with the SCL-90-R Anxiety Scale

		PRFS Anxiety	
		Positive	Negative
SCL-90-R Anxiety	Positive	20.5%	15.1%
	Negative	8.2%	56.2%

Table 14

Signal Detection comparison for PRFS Anger/Hostility Scale with the SCL-90-R Hostility Scale

		PRFS Anger/Hostility	
		Positive	Negative
SCL-90-R Hostility	Positive	22.2%	13.9%
	Negative	8.3%	55.6%

Table 15

Signal Detection comparison for PRFS Total Distress Scale compared with the SCL-90-R General Severity Index

		PRFS Total Distress Scale	
		Positive	Negative
SCL-90-R General Severity Index	Positive	27.3%	12.7%
	Negative	9.1%	50.9%

Table 16

Correlations of Emotional Guardedness Scale with other PRFS Scales

	Depression	**Anxiety**	**Hostility**	**Soc Isolation**
Emotional Guardedness	-.27*	-.32*	-.26*	-.26*

*Correlations are Pearson Product Coefficient Correlations, two tailed, with a level of significance p< .01.

Table 17

Cronbach's Alpha of individual PRFS Scales

	Depression	**Anxiety**	**Hostility**	**Social Isolation**	**Emotional Guardedness**
Cronbach's Alpha	.90	.87	.89	.78	.50

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Appendix

There is ongoing research at the time of publication of this manual that addresses the Total Distress Score of the PRFS. The Total Distress Score is simply a mathematical sum of the five scales of the PRFS. This score is seen to be a measure of overall emotional distress for the patient. Current indications are that this scale correlates significantly with the similar measure of the General Severity Index on the SCL-90-R. Previous research has found this scale of the SCL-90-R to have significant implications in cardiac wellness. Recent comparisons of the PRFS Total Distress Score and the SCL-90-R General Severity Index reveal a Pearson Correlation Coefficient of .76 which is significant at the $p<.001$ level.

As well, there is ongoing research to examine the implication of elevated scores on the Emotional Guardedness scale. In particular, it will beneficial to determine if it is reasonable to assign a specific correction factor to added to the scores of the other PRFS scales if the patient is seen to be minimizing based on his or her Emotional Guardedness score.

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