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Fatigue rating scales: an empirical comparison

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ABSTRACT

Background. There has been limited research comparing the efficacy of different fatigue rating scales for use with individuals with chronic fatigue syndrome (CFS). This investigation explored relationships between two commonly-used fatigue rating scales in CFS research, the Fatigue Scale and the Fatigue Severity Scale. Theoretically, these scales have been described as measuring different aspects of the fatigue construct. The Fatigue Scale was developed as a measure of the severity of specific fatigue-related symptoms, while the Fatigue Severity Scale was designed to assess functional outcomes related to fatigue.

Methods. Associations of these scales with the eight definitional symptoms of CFS and with eight domains of functional disability were examined separately in: (1) an overall sample of individuals with a wide range of fatigue severity and symptomatology; (2) a subsample of individuals with CFS-like symptomatology, and, (3) a subsample of healthy controls.

Results. Findings revealed that both scales are appropriate and useful measures of fatigue-related symptomatology and disability within a general population of individuals with varying levels of fatigue. However, the Fatigue Severity Scale appears to represent a more accurate and comprehensive measure of fatigue-related severity, symptomatology, and functional disability for individuals with CFS-like symptomatology.

INTRODUCTION

Fatigue is difficult to define, not only due to its subjectivity in meaning and experience, but also because of its multi-dimensional, heterogeneous nature. It has been construed both as a single, discrete experience, and as a dimensional phenomenon that exists along a continuum of severity (Chalder *et al*. 1993). It is a key symptom of a variety of disorders, including chronic fatigue syndrome, multiple sclerosis (MS), systemic lupus erythematosus (SLE) and a wide range of psychiatric disturbances, stress reactions and functional somatic syndromes. Fatigue is a particularly prominent symptom of chronic fatigue syndrome (CFS), a disorder currently defined as $\geqslant 6$ months of unexplained, persistent, or relapsing fatigue of new or definite onset that is not due to ongoing exertion, is not substantially alleviated by rest and results in a substantial reduction in previous activity levels (Fukuda *et al*. 1994). In addition to these criteria, at least four of eight associated symptoms must occur constantly or repeatedly during $\geqslant 6$ months of the fatigue, including sore throat, painful lymph nodes, muscle pain, multiple joint pain, new-type headaches, unrefreshing sleep, post-exertional malaise and significant disturbances in memory or concentration (Fukuda *et al*. 1994).

Researchers have identified several types of fatigue states, including pain-related fatigue, hypoglycaemic fatigue, mental fatigue, allergy-related fatigue, metabolic fatigue, acidosis, muscle fatigue and hypothyroid fatigue (Dechene *et al*. 1994). Current self-report measures can be grouped into two categories: fatigue intensity measures and fatigue/function measures (Friedberg & Jason, 1998). A third category, fatigue/affect measures, will not be addressed in this paper (Friedberg & Jason, 1998). Fatigue intensity measures tend to focus on measuring the severity of certain aspects of fatigue and/or measuring the severity of symptoms associated with fatigue-related illnesses.

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The Fatigue Scale (Chalder *et al*. 1993), is the only fatigue intensity measure in which psychometric properties have been tested in large community samples of individuals with CFS (Pawlikowska *et al*. 1994; Jason *et al*. 1999*a*). In reaction to a need for more precise, operational criteria for CFS, this scale was developed to measure specific fatigue-related symptoms and fatigue severity within the CFS population. It was designed to measure the severity of fatigue and symptoms of CFS specifically related to fatigue.

Recently, investigations of measures appropriate for use with individuals with CFS (Chalder *et al*. 1993; Friedberg & Jason, 1998) have highlighted theoretical distinctions between measures of fatigue intensity alone, such as the Fatigue Scale (Chalder *et al*. 1993), and fatigue/function measures that incorporate the linkage between fatigue intensity and functional disability, such as the Fatigue Severity Scale (Krupp *et al*. 1989). Some researchers (Canadian Research Group, 1987) contend that fatigue/function scales communicate more information regarding specific fatigue-related dysfunction than a fatigue intensity measure alone, or a generic functional status measure alone. The present paper intended to test this hypothesis in a random, community-based sample of individuals with and without CFS-like symptoms.

The Fatigue Severity Scale (Krupp *et al*. 1989) is a popular fatigue/function measure that has been used in studies of individuals with chronic fatigue and CFS, due to its brevity, strong validation data and ability to distinguish between subgroups of individuals with CFS, MS, and primary depression (Pepper *et al*. 1993). It is possible that the Fatigue Severity Scale (Krupp *et al*. 1989) may be more sensitive to different aspects and gradations of fatigue severity than fatigue intensity measures, such as the Fatigue Scale (Chalder *et al*. 1993), within the CFS population. However, the Fatigue Severity Scale (Krupp *et al*. 1989) has been criticized by the authors of the Fatigue Scale due to its 'preponderance of items which [relate] to the behavioural consequences of fatigue rather than symptoms' (p. 148, Chalder *et al*. 1993). Therefore, it remains unclear as to which of these two scales might offer the most relevant and accurate means of assessing fatigue severity in individuals with CFS.

It is possible that different fatigue self-rating scales assess different dimensions of the fatigue construct and that some are more appropriate for use with individuals with CFS than others. The main objective of the present study was to explore whether the Fatigue Severity Scale (Krupp *et al*. 1989), a fatigue/function measure, offers a more relevant and comprehensive means of assessing fatigue-related dysfunction than the Fatigue Scale (Chalder *et al*. 1993), a fatigue intensity measure. Using a repeated-measures design, this hypothesis was tested by examining the relationship between two fatigue rating scales, the Fatigue Scale (Chalder *et al*. 1993) and Fatigue Severity Scale (Krupp *et al*. 1989) in terms of the following: (1) the strength of their associations with each other; (2) the strength of their associations with severity ratings for the eight minor symptoms of CFS (Fukuda *et al*. 1994); and (3) the strength of their associations with eight domains of functional impairment as measured by the Medical Outcomes Study scales (Ware & Sherbourne, 1992).

Not only is it important to identify fatigue rating scales that are accurate and comprehensive in terms of their ability to measure the construct of fatigue, but it is also necessary to ensure that a given scale is appropriate for uses with the population being studied. Therefore, a second objective of this investigation was to examine the relevance of the use of the two fatigue self-rating scales in subgroups of individuals with different levels of fatigue symptomatology. Specifically, the study explored relationships between the fatigue self-rating scales, severity of CFS symptom ratings, and functional outcomes in: (1) an overall, community-based sample of individuals ranging in fatigue status from those with no fatigue to those with CFS-like symptomatology; (2) a subsample of participants with CFS-like symptomatology; and (3) a subsample of healthy control participants. To date, comparisons of these scales according to these subgroups of participants in a random, community-based sample have not been conducted.

METHOD

Sample

This study utilized a stratified random sample of 28673 households in several neighbourhoods in

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Chicago, which were 10–15 min from the site of where the medical examinations took place (see Jason *et al.* 1999*a*, *b* for further details). Initially, we screened this random sample of adults (aged 18 years or older) between September 1995 and May 1997 using a telephone interview questionnaire. Procedures developed by Kish (1965) were used to select one adult from each household. Birth dates for each adult were gathered and the person with the most recent birthday was selected to be interviewed.

Procedure

The data derive from a large community-based study of CFS (for more details about this study, see Jason *et al.* 1999*a*, *b*). This larger study was carried out in three stages. Table 1 lists the frequency of participants according to stages. Stage 1 entailed a cross-sectional screening telephone survey of a random sample of 28673 households, with 18675 adults (65·1%) completing the screening interview. Individuals indicating that they were experiencing severe fatigue, extreme tiredness, or exhaustion that was present for a period of 6 months or longer were defined as having chronic fatigue. The Stage 1 screen revealed that of the 18675 interviewees, 780 (4·2%) had chronic fatigue. Of these, 408 had chronic fatigue and the concurrent occurrence of four or more minor symptoms, such as sore throat or muscle pain, (Fukuda *et al.* 1994) and they were defined as CFS-like. Stage 2 involved a structured psychiatric interview for those respondents from Stage 1 who screened positive for CFS-like symptomatology (i.e. $\geqslant$ 6 months of fatigue, and at least four minor symptoms based on the Fukuda *et al.* (1994) CFS criteria) and a random sample of controls who screened negative. Stage 3 involved a medical exam and structured medical history for the same group of participants agreeing to undergo further evaluation.

The 213 participants in the present study derive from this larger stratified random sample, and comprise a sample of 47 healthy controls and 166 with chronic fatigue syndrome-like symptoms (CFS-like) agreeing to undergo full evaluation. The term 'CFS-like', indicates that the self-reported fatigue profile of these participants is similar to that of individuals with CFS (Fukuda *et al.* 1994), but they had not yet completed medical case evaluation to rule out other conditions that might explain their fatigue. There were no significant differences on socio-demographic or fatigue scores between those 166 screened positive (CFS-like) participants and the 242 screened positive (CFS-like) non-participants, or between those 47 control participants and the 152 control non-participants (Jason *et al.* 1999*b*).

Measures

The Stage 1 Screening Questionnaire (*Jason* et al. *1997*)

The questionnaire assessed interviewees' socio-demographic characteristics and preliminary classification into screened positive (CFS-like) *versus* screened negative (control) groups. As a screening questionnaire it has been found to have adequate reliability (Jason *et al.* 1997). Basic demographic data included age, ethnicity, socio-economic status, marital status and gender. The revised scoring rules for Hollingshead's (1975) scale, developed and validated by Wasser (1991), were used to classify socioeconomic status.

The Fatigue Scale (*Chalder* et al. *1993*)

This is a valid fatigue intensity measure that was originally used in a hospital-based case–control study (Wessely & Powell, 1989) and further refined by Chalder *et al.* (1993) with a sample of 374 primary-care patients at a clinic in Great Britain (Kensington). This 11-item scale contains responses that are rated on a four-option continuum ranging from 0 = less/better than usual to 3 = much more/much worse than usual. Principal components analyses performed by the authors supported the notion of a two-factor scale for fatigue (physical and mental fatigue). Physical fatigue referred to items such as 'Do you have less strength in your muscles?' and mental fatigue referred to items describing cognitive difficulties, such as 'Do you have difficulty concentrating?'. The Fatigue Scale was designed specifically to assess only symptoms associated with CFS that relate to fatigue, as opposed to CFS symptoms that are not associated with fatigue. According to the authors, it was designed to function as a more precise measure of fatigue symptomatology than less precise, subjective measures of energy (Lee *et al.* 1991) or measures of the behavioural consequences of fatigue (Krupp *et al.* 1989).

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Table 1. *Frequency data for participants by project stage* ($N = 28673$*)

	Chronic fatigue *N*	Controls *N*
Completed initial telephone screening† (Stage 1)	780	17888
Screened positive for CFS-like symptoms	408	0
Selected for full evaluation (Stage 2 and 3)	408	199
Completed full evaluation	166	47

* The total includes all the working residential numbers to which attempts at contact were made. Of these 28673 households, actual telephone contact was established with 18675.

† Seven individuals were not included because fatigue-related information was missing.

The Fatigue Severity Scale (*Krupp* et al. *1989*)

This scale is a valid fatigue/function measure comprised of nine items that are rated according to a Likert-type rating scale from 1 to 7, where 1 indicates no impairment and 7 indicates severe impairment. The items were initially selected to identify common features of fatigue in both MS and SLE. In the initial validation study (Krupp *et al.* 1989), individuals with MS and SLE were compared with normal, healthy adults. Internal consistency for the Fatigue Severity Scale was high for both illness groups. The scale clearly distinguished between patients and controls, and was moderately correlated with a single-item visual analogue scale of fatigue intensity ($r = 0{\cdot}68$), and with Center for Epidemiologic Studies – Depression Scale (CES-D) depression scores in the MS, SLE, and control groups.

The CFS Symptom Rating Form (*Jason* et al. *1997*)

This is a measure of the severity of the eight CFS definitional symptoms (Fukuda *et al.* 1994) according to a 100-point scale, with 0 = no pain or problem and 100 = severe pain or problem. In a previous study (Jason *et al.* 1997), a modified version of this form was demonstrated to have high test–retest reliability over a two-week period (test–retest agreement: 76–92%).

The Medical Outcome Study Short Form-36 Health Survey (*MOS SF-36*) (*Ware & Sherbourne*, *1992*)

This is a reliable and valid measure that discriminates between gradations of functional impairment. Overall, higher scores indicate better health or less functional impairment. The MOS has demonstrated adequate psychometric properties as a measure of functional status in a population of individuals with CFS, and it has distinguished CFS from other fatiguing illnesses (Buchwald *et al.* 1996).

Statistical analysis

The significance of observed differences in the strength of correlations between each of the two fatigue rating scales with respect to their relationships with each of the eight minor CFS symptoms, and with respect to their relationships with each of the eight MOS functional status domains was tested within each group using a *t* test procedure (Ferguson, 1966). This procedure was developed to test the significance of the difference between two correlation coefficients for correlated samples (Ferguson, 1966).

RESULTS

Sociodemographic characteristics

Chi-square analysis revealed significant differences between the CFS-like and control groups with respect to gender (χ^2 (1, $N = 213$) = 10·75, $P < 0{\cdot}01$), ethnic identification (χ^2 (3, $N = 213$) = 10·68, $P < 0{\cdot}05$), SES (χ^2(4, $N = 213$) = 13·33, $P = 0{\cdot}01$) and parental status (χ^2 (1, $N = 213$) = 15·02, $P < 0{\cdot}01$). There were significantly more women in the CFS-like group compared with the control group. The control group was mainly comprised of White and African-American participants, with fewer Latin-Americans and individuals of other ethnicities, whereas the CFS-like group was mainly comprised of White, African-American, and a high proportion of Latin-Americans, with a similarly low proportion of individuals of other ethnicities. In addition, individuals in the control group tended to be of higher SES and were more likely not to have children than those in the CFS-like group.

Correlational analyses

All analyses were conducted within the overall sample, and for the two subsamples (the CFS-like group and the healthy control group). Table 2 presents Pearson correlation coefficients between the total fatigue score for the Fatigue Severity Scale (Krupp *et al.* 1989) and the total,

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Table 2. *Correlations of two fatigue rating scales*

	Fatigue Severity Scale†		
	Overall sample ($N = 213$)	CFS-like group ($N = 166$)	Control group ($N = 47$)
Fatigue Scale‡			
Total Scale Score	0·28**	0·10	0·38*
Physical Fatigue Score	0·24**	0·07	0·30
Mental Fatigue Score	0·23**	0·10	0·37*

† Krupp *et al.* 1989.
‡ Chalder *et al.* 1993.
* $P < 0·05$; ** $P < 0·01$.

Table 3. *Comparison of Fatigue Severity Scales, CFS Symptom Severity, and functional status domains*

	Overall sample ($N = 213$)		CFS-like group ($N = 166$)		Control group ($N = 47$)	
	Chalder	Krupp	Chalder	Krupp	Chalder	Krupp
CFS Symptom Severity						
Sore throat	0·20**	0·06	0·10	−0·01	0·26	0·04
Lymph node pain	0·22**	0·21**	0·16	0·20*	0·32*	−0·03
Muscle pain	0·24**	0·36**	0·02	0·24**	0·48**	0·52**
Joint pain	0·26**	0·30**	0·09	0·20*	0·40**	0·35**
Post-exertional malaise	0·23**	0·44**	0·08	0·42**	0·61**	0·48**
Headache	0·32**	0·17**	0·18*	0·04	0·12	0·08
Memory/concentration	0·41**	0·41**	0·28**	0·34**	0·39**	0·40*
Unrefreshing sleep	0·40**	0·29**	0·19*	0·11	0·45**	0·35
Functional status domains						
Physical functioning	−0·38**	−0·47**	−0·21**	−0·40**	−0·38**	−0·42*
Role-physical functioning	−0·46**	−0·59**	−0·23**	−0·52**	−0·57**	−0·51**
Bodily pain	−0·37**	−0·41**	−0·10	−0·25**	−0·52**	−0·45**
General health	−0·37**	−0·37**	−0·15	−0·21**	−0·37**	−0·37*
Vitality	−0·44**	−0·45**	−0·11	−0·25**	−0·71**	−0·53**
Social functioning	−0·41**	−0·48**	−0·14	−0·31**	−0·61**	−0·67**
Role-emotional functioning	−0·28**	−0·31**	−0·12	−0·18*	−0·35*	−0·49**
Mental health functioning	−0·33**	−0·29**	−0·08	−0·13	−0·54**	−0·37*

* $P < 0·05$; ** $P < 0·01$.

physical and mental fatigue scores for the Fatigue Scale (Chalder *et al.* 1993). Findings for the overall sample demonstrated a significant association between total, physical and mental fatigue scores for the Fatigue Scale (Chalder *et al.* 1993) and the Fatigue Severity Scale (Krupp *et al.* 1989). When the same relationships were measured separately within the CFS-like group, no significant associations were found. In contrast, analyses conducted within the control group revealed a significant correlation between total and mental fatigue scores for the Fatigue Scale (Chalder *et al.* 1993) and the Fatigue Severity Scale (Krupp *et al.* 1989). Although there were no significant differences using Fisher's z transformation formula (Ferguson, 1966) between correlation coefficients for the CFS-like and control participants, directional findings indicate consistently stronger relationships between the scales for the control group as compared with the CFS-like group.

Table 3 presents Pearson correlation coefficients between the two fatigue rating scales, the severity of the eight minor symptoms of CFS (Fukuda *et al.* 1994) and eight functional status domains of the MOS (Ware & Sherbourne, 1992). For the overall samples, findings indicated significant associations between the Fatigue Scale (Chalder *et al.* 1993) total fatigue score, severity ratings for the eight minor symptoms of

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CFS (Fukuda *et al.* 1994), and total scale scores for all eight functional status domains of the MOS (Ware & Sherbourne, 1992). Similarly, there were significant associations between the Fatigue Severity Scale (Krupp *et al.* 1989) and severity ratings for seven of the eight minor symptoms of CFS (Fukuda *et al.* 1994) (sore throat severity was not significantly correlated with the Fatigue Severity Scale) and all eight functional status domains of the MOS.

CFS-like group

With respect to the eight minor CFS symptoms (Fukuda *et al.* 1994) the association between the Fatigue Scale (Chalder *et al.* 1993) and muscle pain severity was significantly weaker than the association between the Fatigue Severity Scale (Krupp *et al.* 1989) and muscle pain severity ($t = -2{\cdot}16$, $P < 0{\cdot}05$). In addition, the association between Fatigue Scale (Chalder *et al.* 1993) and post-exertional malaise severity was significantly weaker than the association between the Fatigue Severity Scale (Krupp *et al.* 1989) and post-exertional malaise severity ($t = -3{\cdot}57$, $P < 0{\cdot}01$). Although there were no significant differences between the two fatigue rating scales with respect to their associations with the remaining symptoms, directional findings indicated stronger relationships between the Fatigue Severity Scale (Krupp *et al.* 1989) and the severity of lymph node pain, joint pain, and memory/concentration difficulties. Findings in the opposite direction indicated stronger relationships between the Fatigue Scale (Chalder *et al.* 1993) and the severity of sore throat, headache and unrefreshing sleep.

With respect to the eight MOS functional status domains, analysis of the Fatigue Scale (Chalder *et al.* 1993) total fatigue score revealed significant associations with severity ratings for only two MOS functional status domain scores, both measuring physical activity. In contrast, analysis of the Fatigue Severity Scale (Krupp *et al.* 1989) revealed significant associations with scores for seven of the eight MOS functional status domains. There were significant differences between the two fatigue rating scales with respect to their associations with the two scales measuring physical activity. The association between the Fatigue Scale (Chalder *et al.* 1993) and the physical functioning domain was significantly stronger than the association between this domain and the Fatigue Severity Scale (Krupp *et al.* 1989) ($t = 2{\cdot}01$, $P < 0{\cdot}05$). Similarly, the association between the Fatigue Scale (Chalder *et al.* 1993) and the role-physical functioning domain was significantly stronger than the association between the Fatigue Severity Scale (Krupp *et al.* 1989) and this domain ($t = 3{\cdot}30$, $P < 0{\cdot}01$). Although there were no significant differences between the two fatigue rating scales with respect to their associations with the remaining MOS functional domains, directional findings indicated a consistent pattern of stronger associations between the Fatigue Severity Scale (Krupp *et al.* 1989) and the six remaining MOS functional domains, as compared with associations between the Fatigue Scale (Chalder *et al.* 1993) and these six domains.

Control group

With respect to the eight minor CFS symptoms (Fukuda *et al.* 1994), the association between the Fatigue Scale (Chalder *et al.* 1993) and lymph node pain severity was significantly stronger than the association between the severity of this symptom and the Fatigue Severity Scale (Krupp *et al.* 1989) ($t = 2{\cdot}23$, $P < 0{\cdot}05$). Although there were no significant differences between the two fatigue rating scales with respect to their associations with the remaining symptoms, directional findings indicated stronger relationships between the Fatigue Scale (Chalder *et al.* 1993) and the severity of sore throat, joint pain, post-exertional malaise, headache and unrefreshing sleep. Findings in the opposite direction indicated stronger relationships between the Fatigue Severity Scale (Krupp *et al.* 1989) and the severity of muscle pain and memory/concentration difficulties.

In terms of relationship between the two fatigue rating scales and the eight MOS functional status domains, the pattern of findings for the control group appeared more consistent with that of the overall sample, with consistently significant associations between both of the fatigue rating scales and all eight of the MOS functional status domains. There were no significant differences with respect to the eight MOS functional status domains and directional findings indicated that four of the eight domains demonstrated stronger associations with the Fatigue Scale (Chalder *et al.* 1993) as compared with the Fatigue Severity Scale (Krupp *et al.*

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1989). The remaining four demonstrated stronger associations with the Fatigue Severity Scale (Krupp *et al*. 1989) as compared with the Fatigue Scale (Chalder *et al*. 1993).

DISCUSSION

When attempting to quantify the construct of fatigue using self-report methodology, the choice of an appropriate fatigue rating scale that measures the construct in question is paramount. It is also necessary to ensure the relevance of the designated rating scale with respect to the population being studied. For individuals with varying levels of fatigue and for those without chronic fatigue, findings indicated that the Fatigue Scale (Chalder *et al*. 1993) and Fatigue Severity Scale (Krupp *et al*. 1989) both represent adequate means of assessing fatigue intensity within the general population. Both scales not only demonstrated significant relationships with one another, but they were also significantly associated with severity ratings for the minor symptoms of CFS (Fukuda *et al*. 1994), as well as with the eight MOS functional status domains.

Findings for individuals with CFS-like symptomatology were distinct from those with varying degrees of fatigue or with no fatigue. Within the CFS-like group, findings suggested that the Fatigue Severity Scale (Krupp *et al*. 1989) measures aspects of fatigue that are distinct from those measured by the Fatigue Scale (Chalder *et al*. 1993). The Fatigue Severity Scale (Krupp *et al*. 1989) was more closely associated with severity ratings for the eight minor CFS symptoms (Fukuda *et al*. 1994), as well as with functional outcomes related to fatigue (Ware & Sherbourne). In part, these results confirm Friedberg & Jason's (1998) characterization of the Fatigue Severity Scale as a fatigue/function measure that integrates dimensions of fatigue intensity and functional outcomes associated with fatigue, as compared with scales like the Fatigue Scale (Chalder *et al*. 1993) that measure fatigue intensity alone.

One explanation for this finding may involve the increased ability of the Fatigue Severity Scale (Krupp *et al*. 1989) to discriminate between individuals with CFS, MS, and primary depression (Pepper *et al*. 1993). In contrast, the Fatigue Scale (Chalder *et al*. 1993) has not demonstrated efficacy in discriminating between different subtypes of individuals with fatigue, and it has not demonstrated an ability to distinguish individuals with CFS from those with primary depression (Friedberg & Jason, 1998). In part, the specificity of the Fatigue Severity Scale (Krupp *et al*. 1989) may be attributable to the emphasis on functional and behavioural aspects of fatigue, as compared with the emphasis on fatigue-related symptomatology in the Fatigue Scale (Chalder *et al*. 1993).

The increased specificity of the Fatigue Severity Scale (Krupp *et al*. 1989) as compared with the Fatigue Scale (Chalder *et al*. 1993) within the CFS-like group may also be explained by differences in samples used in the development of each of the scales. The Fatigue Severity Scale (Krupp *et al*. 1989) was evaluated using a sample of individuals with MS, SLE, and healthy controls, whereas the Fatigue Scale (Chalder *et al*. 1993) was tested in a UK primary care sample. The Fatigue Severity Scale's (Krupp *et al*. 1989) relevance for the CFS-like group may be due to a partial overlap in symptoms of CFS with symptoms of MS and SLE, and this overlap of CFS symptomatology may not manifest in a sample of primary care patients with a wider variety of disorders.

In summary, although the Fatigue Scale (Chalder *et al*. 1993) and the Fatigue Severity Scale (Krupp *et al*. 1989) both offer relevance and utility within a general population of individuals with varying levels of fatigue, the Fatigue Severity Scale (Krupp *et al*. 1989), a measure of the behavioural consequences of fatigue, appears to represent a more accurate and comprehensive measure of fatigue-related severity, symptomatology and functional disability for individuals with CFS-like symptomatology. These findings illustrate that the Fatigue Severity Scale (Krupp *et al*. 1989) is a more effective measure of disability-related fatigue in CFS-like illness, which, by definition, specifies a state of marked functional disability. Findings are of importance since they may better inform the selection of appropriate instruments in the assessment of fatigue, not only when measuring fatigue in the general population, but also in a more specialized group of individuals with self-reported symptoms of chronic fatigue syndrome.

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