

## **The Medical Symptom Questionnaire (MSQ) and the Dynamic SF-36® Health Quality-of-Life Survey Correlate Fairly Highly**

### **Abstract**

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#### **Context**

Functional Medicine practitioners like to use the MSQ to assess patients. The MSQ has not been validated.

#### **Objective**

To determine if there is a significant correlation between the MSQ and a validated, widely used quality-of-life metric, the Dynamic SF-36® Health Survey.

#### **Design, Setting, and Participants**

Eighty-seven integrative medicine center patients took both the MSQ and the Dynamic SF-36® Health Survey. The variance between the two scores was analyzed using version 11.5 SPSS software.

#### **Results**

Spearman's rho was (-)0.635. The proportion of variance in one score can be explained by the other 40% of the time.

**Conclusion** The Medical Symptom Questionnaire (MSQ) correlates fairly highly with the Dynamic Health Assessment Short Form -36. Future versions of the MSQ might contain other candidate items from the Mecal Review of Symptoms (see Figure2)

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### **Full Study**

#### **INTRODUCTION**

The Medical Symptom Questionnaire (MSQ) (see figure 1) is used in assessing patients and following their response to therapy. Practitioners of Functional Medicine <sup>i</sup> use it as part of the patient's medical history. The MSQ is promoted by the Institute for Functional Medicine. The MSQ was developed to provide a convenient quantitative index of symptoms related to inflammatory mediators, and useful in the context of a *Functional Medicine* approach to chronic disease. The MSQ is available, for clinical use on the internet. The reliability and validity of the MSQ has not been studied. We studied the relationship of the MSQ to the widely used and validated quality-of-life instrument, the Dynamic Short Form 36 (DYNHA-SF) <sup>ii</sup>. The Dynamic Health Assessment Short Form 36 (DYNHA-SF-36) is designed to measure one's overall health; and it has satisfied the highest clinical standards of measurement.

## METHODS

### Validity

The MSQ contains 19 domains, each with 3-7 items, totaling 70 "symptoms" to each of which the patient assigns a likert scale number ranking (0 being *never or seldom* and 4 being *frequently with severe effect*).

Figure 1 **Medical Symptoms Questionnaire**  
(If marked with an x consider deleting)

Patient Name \_\_\_\_\_ Date \_\_\_\_\_ Week \_\_\_\_\_

Rate each of the following symptoms based upon your typical health profile for:

Past 30 days       Past 48 hours

### Point Scale

- 0 - *Never or almost never* have the symptom
- 1 - *Occasionally* have it, effect is *not severe*
- 2 - *Occasionally* have it, effect is *severe*
- 3 - *Frequently* have it, effect is *not severe*
- 4 - *Frequently* have it, effect is *severe*

### HEAD

\_\_\_\_\_ Headaches  
\_\_\_\_\_ Faintness  
\_\_\_\_\_ Dizziness  
\_\_\_\_\_ Insomnia  
Total \_\_\_\_\_

### EYES

\_\_\_\_\_ Watery or itchy eyes  
\_\_\_\_\_ Swollen, reddened or sticky eyelids  
\_\_\_\_\_ Bags or dark circles under eyes  
\_\_\_\_\_ Blurred or tunnel X vision  
(does not include near- or far-sightedness)  
Total \_\_\_\_\_

### EARS

\_\_\_\_\_ Itchy ears  
\_\_\_\_\_ Earaches, ear infections  
\_\_\_\_\_ Drainage from ear X  
\_\_\_\_\_ Ringing in ears, hearing loss  
Total \_\_\_\_\_

### NOSE

\_\_\_\_\_ Stuffy nose  
\_\_\_\_\_ Sinus problems  
\_\_\_\_\_ Hay fever  
\_\_\_\_\_ Sneezing attacks  
\_\_\_\_\_ Excessive mucus formation  
Total \_\_\_\_\_

### MOUTH/THROAT

\_\_\_\_\_ Chronic coughing  
\_\_\_\_\_ Gagging, frequent need to clear throat  
\_\_\_\_\_ Sore throat, hoarseness, loss of voice  
\_\_\_\_\_ Swollen or discolored tongue, gums, lips  
\_\_\_\_\_ Canker sores  
Total \_\_\_\_\_

### SKIN

\_\_\_\_\_ Acne  
\_\_\_\_\_ Hives, rashes, dry skin  
\_\_\_\_\_ Hair loss  
\_\_\_\_\_ Flushing, hot flashes

\_\_\_\_\_ Excessive sweating Total \_\_\_\_\_

**HEART**

\_\_\_\_\_ Irregular or skipped heartbeat  
\_\_\_\_\_ Rapid or pounding heartbeat  
\_\_\_\_\_ Chest pain Total \_\_\_\_\_

**LUNGS**

\_\_\_\_\_ Chest congestion  
\_\_\_\_\_ Asthma, bronchitis  
\_\_\_\_\_ Shortness of breath  
\_\_\_\_\_ Difficulty breathing Total \_\_\_\_\_

**DIGESTIVE TRACT**

\_\_\_\_\_ Nausea, vomiting  
\_\_\_\_\_ Diarrhea  
\_\_\_\_\_ Constipation  
\_\_\_\_\_ Bloating feeling  
\_\_\_\_\_ Belching, passing EXCESSIVE gas  
\_\_\_\_\_ Heartburn  
\_\_\_\_\_ Intestinal/stomach pain Total \_\_\_\_\_

**JOINTS/MUSCLE**

\_\_\_\_\_ Pain or aches in joints  
\_\_\_\_\_ Arthritis  
\_\_\_\_\_ Stiffness or limitation of movement  
\_\_\_\_\_ Pain or aches in muscles  
\_\_\_\_\_ Feeling of weakness or tiredness Total \_\_\_\_\_

**WEIGHT**

\_\_\_\_\_ Binge eating/drinking  
\_\_\_\_\_ Craving certain foods  
\_\_\_\_\_ Excessive weight  
\_\_\_\_\_ Compulsive eating  
\_\_\_\_\_ Water retention  
\_\_\_\_\_ Underweight Total \_\_\_\_\_

**ENERGY/ACTIVITY**

\_\_\_\_\_ Fatigue, sluggishness  
\_\_\_\_\_ Apathy, lethargy  
\_\_\_\_\_ Hyperactivity  
\_\_\_\_\_ Restlessness Total \_\_\_\_\_

**MIND**

\_\_\_\_\_ Poor memory  
\_\_\_\_\_ Confusion, poor comprehension  
\_\_\_\_\_ Poor concentration  
\_\_\_\_\_ Poor physical coordination  
\_\_\_\_\_ Difficulty in making decisions  
\_\_\_\_\_ Stuttering or stammering  
\_\_\_\_\_ Slurred speech  
\_\_\_\_\_ Learning disabilities Total \_\_\_\_\_

**EMOTIONS**

\_\_\_\_\_ Mood swings  
\_\_\_\_\_ Anxiety, fear, nervousness  
\_\_\_\_\_ Anger, irritability, aggressiveness  
\_\_\_\_\_ Depression  
Total \_\_\_\_\_

**OTHER**

\_\_\_\_\_ Frequent illness  
\_\_\_\_\_ Frequent or urgent urination  
\_\_\_\_\_ Genital itch or discharge  
Total \_\_\_\_\_

**GRAND TOTAL**

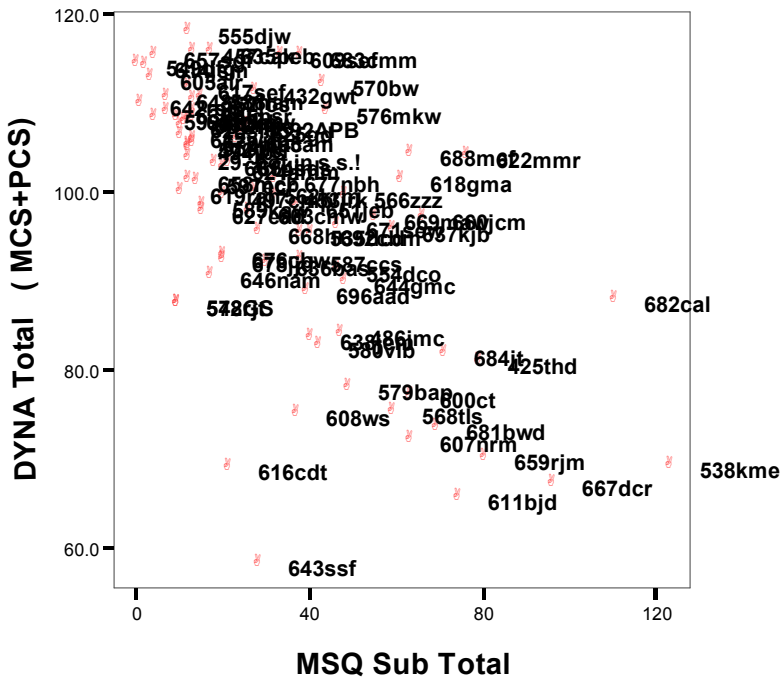
**TOTAL** \_\_\_\_\_

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The DYNHA SF-36 has two component summary scores: Physical Component Score (PCS) and Mental Component Score (MCS). It measures the impact of symptoms on daily function. Consenting patients were assured of the confidential encoding of survey answers, and given the MSQ survey immediately prior to an appointment with a practitioner. Either just after the visit, patients logged in at AmIhealthy.com to take the DYNHA-SF-36 (Qualitymetric, Lincoln, Rhode Island). SSPS variance analysis was performed using version 11.5 SPSS Inc. (Chicago, Illinois )<sup>iii</sup>

**Reliability**

**RESULTS**



**COMMENT**

Does this degree of correlation validate the MSQ? Probably not. Does it increase our confidence in the usefulness of the MSQ in assessing patients? Yes. Still, the MSQ and DYNHA SF-36 do not measure the same things. The MSQ is an ersatz metric to quantify inflammation-related symptoms. The DYNHA SF-36 is a responsive, tailored state-of-the-art metric for health-related quality -of- life.

One potential flaw with the study design is that patients took the msq immediately before encounter with providers and the DYNHA-36 survey immediately afterward. Directions to taking both surveys ask the patient to consider the relevant time period the "last four weeks". Still, there is some potential for a provider intervention effect between the taking of the two surveys.

There are limitations on the usefulness of the MSQ. One limitation of the MSQ is that it assigns numbers of equal weight to symptoms that may have profoundly different clinical implications. A chest pain or shortness of breath score of 2 might reflect a potentially life-threatening cardiac or pulmonary condition (coronary ischemia, pulmonary embolus etc.) while itchy ears or acne may contribute the same score but have less clinical gravitas. Another feature of the MSQ is that in addition to "symptoms", some conditions or diagnoses that imply or might include some of the other listed symptoms are listed, including asthma, bronchitis, arthritis and frequent illness. Is the MSQ useful as a component of history taking? The short answer is yes. Still, It is important for the clinician to be aware of its shortcomings. Although the MSQ shares a number of history items with the classical medical history Review of Systems (ROS) it only asks about a quarter of the history items in the medical ROS. The MSQ item symptoms are shown embedded in **bold** in the ROS of Figure 2. ROS Univ. Illinois College of Medicine. Documentation of a minimal number of items of

the medical ROS is mandated for medical encounters that are billed as intermediate through extended by CMS Medicare (HCFA).

The Dynamic SF-36® Health Survey is a tool used to measure health-related quality of life. It measures a person's ability to function on the job, at home and in social situations. The survey was developed by an international team of clinicians and measurement experts, the same research developed the SF-36® Health Survey. The survey generates a health profile consisting of 8-scales and two summary measures for physical and emotional well-being. The Dynamic SF-36® Health Survey has proven to be valid. It was built from widely used health surveys that were validated independently; and it provides a reliable method for evaluating an individual's progress over time. Surveys are password protected, stored on the internet, and exportable to excel spreadsheets. A problem with the DYNHA SF-36 and any survey administered in the setting of an integrative medicine practice where patients have a high degree of autonomy, is that while it is less burdensome than many surveys, many patients, and providers, still perceive it as a burden to log onto a computer in spite of the fact it might take as little as 5 minutes to complete the survey.

Figure 2 (msq items in **bold**) Items marked with a Y merit potential inclusion in a future msq

## MEDICAL REVIEW OF SYSTEMS **General**

### Weight

Average  
Recent change  
Minimum  
Maximum

### Weakness

Fatigue

Fever<sup>Y</sup>

Sweats<sup>Y</sup>

Chills

Anorexia<sup>Y</sup>

**Insomnia (can't sleep)**

**Hypersomnolence (sleep all the time)**

### **Skin**

Lesions

Lumps

Growths

Sores<sup>Y</sup>

Moles

Change in color/pigmentation, eruptions/rashes

Pruritus (itching)<sup>Y</sup>

### **Dryness**

Excessive sweating

Easy bruising

Changes in nails/**hair**

Birthmarks

Change in temperature

### **HEENT**

#### **Head**

#### **Headache**

Head injury

Change in size

Deformity

#### **Dizziness**

Syncope (lightheaded)

Vertigo (spinning)

#### **Eyes**

Vision, use of glasses/contacts

Pain

Diplopia (double vision)

Glaucoma

Cataracts

#### **Itching**

Spots

Photophobia  
Color blindness  
Night blindness

**Blurry vision**

Ptosis (droopy eyelids)  
Halos (rings around lights)  
Scotomata (blind spot)  
Redness

**Tearing**

Discharge (color, consistency)  
Use of eye drops  
Last eye exam

**Ears**

**Pain**

**Hearing loss**

Deafness

**Discharge** (color, consistency, bloody)

Infections

**Tinnitus** (ringing)

**Vertigo**

**Pruritus** (itching)

Use of hearing aid

**Nose/Sinuses**

**Runny nose**

**Stuffiness**

Discharge (color, consistency)

Pruritus (itching)

Epistaxis (nose bleeds)

Pain over **sinuses**

**Hay fever**

**Frequent colds**

**Mouth/Throat**

**Sores**

Lesions

**Condition of teeth and gums**

Sore throats

Hoarseness

Dental caries

Loss of teeth

Dentures

Change in taste

Bad taste

Malodorous breath

Bleeding

Dry mouth

Last dental exam

**Neck**

Pain

Swelling

Limits in range of motion or stiffness

Lumps

Swellings

“Swollen glands”

### **Breast**

Lumps

Pain

Swelling

Nipple discharge

Use of self-exam

Last mammogram

### **Respiratory**

#### **Cough**

Sputum (color, quantity)

Hemoptysis (blood from lungs/bronchus)

#### **Wheezing**

#### **Asthma**

Emphysema

Bronchitis

Pneumonia

Tuberculosis

Pleurisy

#### **Shortness of breath**

Last chest x-ray

### **CV**

History of heart disease

**Chest pain** (exertional/nonexertional, associated symptoms)

Orthopnea (discomfort breathing by lying flat)

PND (Paroxysmal Nocturnal Dyspnea)

Dyspnea on exertion (**shortness of breath**)

Edema

Cyanosis (blue skin)

**Palpitations (irregular heartbeats)**

Loss of consciousness

Hypertension

Heart murmur

Claudication (limping/calf muscle weakness)

Thrombophlebitis (inflamed veins)

Varicosities (dilated veins)

Raynaud’s Phenomenon (bilateral cyanosis of digits)

Rheumatic Fever

### **GI**

Change in appetite

#### **Abdominal pain**

Difficulty/pain with swallowing

#### **Heartburn**

#### **Indigestion**

#### **Bloating**

Belching

## **Nausea**

### **Vomiting**

Hematemesis (vomiting blood)

Jaundice

Food intolerance

Frequency of bowel movements

Change in bowel habits (frequency, consistency, caliber, **constipation, diarrhea**)

Melena (dark colored stools)

Hematochezia (bloody stools)

Clay-colored stools

Mucus (passing mucus)

### **Excessive belching or passing of gas**

Incontinence (inability to prevent discharge)

Hemorrhoids

Rectal itching/burning

Rectal discharge/pain

Laxative use

Hepatitis

Gall bladder disease

## **GU**

### **Frequency of urination**

Dysuria (difficulty/pain urination)

Hematuria (blood in urine)

Change in color of urine

Polyuria (excess urine)

Nocturia (pee a lot at night)

Oliguria (not much urine)

Anuria (no urine)

Flank/suprapubic pain

Retention (can't fully void)

### **Urgency (desire to void)**

Hesitancy (involuntary delay)

Incontinence

Change in force of stream

Dribbling

Passage of air/stone

Enuresis (leakage of urine)

Past infections

## **Female**

Menstrual history (onset, cycle, duration, amount of flow, change in cycle)

LMP

Amenorrhea (loss of cycle)

Menorrhagia (excessive menses)

Metrorrhagia (irregular menses)

Associated pain or PMS symptoms

Contraceptive history

Previous pregnancies (deliveries, abortions, complications, outcomes)

Exposure to DES (diethylstilbestrol)

Age at menopause

Menopause symptoms

Postmenopausal bleeding

Vaginal discharge  
Pruritus  
Abscess  
Sores  
Lesions  
Infections  
STD's  
PID (Pelvic Inflammatory Disease)  
RPR status (Rapid Plasma Reagin test – syphilis)  
HIV status  
Previous PAPs  
Premenstrual symptoms  
Problem with intercourse (pain, satisfaction, libido)  
Sexual orientation  
Number of partners  
Menopausal symptoms (hot flashes, mood swings, changes in vaginal lubrication)

### **Male**

Hernias  
Penile discharge  
Sores  
Testicular pain or lumps  
STD's  
RPR/HIV status  
Sexual orientation  
Number of partners  
Problems with intercourse (impotence, satisfaction, libido)  
Contraceptive use

### **Endocrine**

Goiter  
Exophthalmos (eyeballs protrude)  
Hot/cold intolerance

### **Constipation/diarrhea**

Tremor  
Excessive sweating

### **Palpitations**

### **Change in voice**

Skin changes  
Hair distribution  
Secondary sex characteristics  
Changes in body contour or weight  
Changes in hat/glove/shoe size  
Polyuria (increase urine)  
Polydipsia (increase thirst)  
Polyphagia (increase eating)  
Striae (stretch marks)

### **Acne**

Pigmentation  
Infertility  
Diabetes  
Thyroid disorders

## **MS**

### **Pain in an extremity**

#### **Join pain**

Swelling

Redness

#### **Stiffness**

Deformity

Limited range of motion

Warmth

Crepitation (note location of each joint involved) (cracking joints)

### **History of arthritis**

Muscle painY

Gout

BackacheY

Neck painY

Trauma

## **Neurologic**

Syncope

### **Dizziness**

Seizures

### **Vertigo**

Ataxia (uncoordinated movements)

Limp

Frequent falls

Tremor

Involuntary movement

### **Weakness**

Loss of muscle mass

Paralysis

### **Incoordination**

Clumsiness

Pain

Numbness

Paresthesia (abnormal sensation, burning, tickling)

Hyperesthesia (abnormal acuteness to touch)

### **Dysarthria** (speech change)

Changing in handwriting

Incontinence (bowel or urine)

## **Hematologic**

Anemia

Easy bruising

Past transfusions and any reactions to them

IV drug use

Enlarged lymph nodes

Hemoglobinopathies (abnormal hemoglobins e.g., sickle cell anemia)

## **Psychiatric**

### **Nervousness**

### **Anxiety**

### **Mood swings**

### **Depression**

**Change in memory**

**Crying spells**

**Early awakening**

**Problems sleeping**

**Loss of energy**

**Change in libido**

Suicidal thoughts

**Change in appetite**

**Binge eating**

Purging

Excessive exercising

Hallucinations

Paranoia

Disturbing/unusual thoughts

Panic episodes<sup>Y</sup>

**Author Contributions:** Dr Semmes had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

*Study concept and design:* Semmes.

*Acquisition of data:*

*Analysis and interpretation of data:*

*Drafting of the manuscript:*

*Critical revision of the manuscript for important intellectual content:*

*Statistical analysis*

*Obtained funding:*

*Administrative, technical, or material support:*

*Study supervision:*

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Psychology, ABPP, Baylor College of Medicine

**Author Affiliations:** Departments of Medicine, Mercy Hospital and Maine Medical Center, Portland, ME Director of Research True North Health Center, Falmouth, ME Doctor Semmes

## REFERENCES

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<sup>i</sup> Textbook of Functional Medicine David S. Jones MD, Sheila Quinn eds. Institute of Functional Medicine Gig Harbor, WA 2006 ISBN 0-9773713-0-1

<sup>ii</sup> <http://www.amihealthy.com/StaticDN/AboutSurveys.aspx>

<sup>iii</sup> 5 SPSS Inc. Headquarters, 233 S. Wacker Drive, 11th floor Chicago, Illinois 60606