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## Medically unexplained symptoms in later life

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## CHAPTER 5

### Physical functioning in older people with somatoform disorders: A pilot study.

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## Abstract

*Objectives* – The primary objective of this study was to systematically examine the physical functioning of older persons with somatoform disorders, as this has never been carried out before. Secondly, we wanted to test our hypothesis that higher somatic disease burden in patients with somatoform disorders is associated with a higher level of somatisation.

*Design and Setting* – Observational study of patients referred for Medically Unexplained Symptoms (MUS) to our outpatient Mental Health Centre for Older Adults. The patients were offered a standardized, multidisciplinary diagnostic procedure, including a comprehensive geriatric assessment. Inter-rater reliability between two geriatricians assessing the contribution of somatic pathology to the main somatic symptom was assessed.

*Participants* – A total of 37 patients referred for MUS (mean age  $75 \pm 6$  years).

*Measurements* – Timed Up and Go Test (TUG) and Hand Grip Strength were used as measures for frailty; the Cumulative Index Rating Scale for Geriatrics (CIRS-G) sum score and severity index measured the burden of cumulative somatic morbidity. The Groningen Activity Rating Scale (GARS) measured functional status. The Whitely Index was used as measure for somatisation.

*Results* – Patients' main symptom could be completely explained by a somatic disease in 3/37 (8%) patients (kappa between geriatricians = 0.72). A total of 32 patients met the criterion for a Somatoform Disorder according to DSM-IV-TR criteria, but somatic comorbidity partially explained the main symptom in 15/32 patients. These patients were older ( $p=.049$ ), had more somatic co-morbidity ( $p=.049$ ), a slower gait speed (TUG,  $p=.035$ ), a lower hand grip strength ( $p=.050$ ) and a lower functional status ( $p=0.03$ ) compared to the 17 patients without any explanation for their main somatic symptom. In contrast to our hypothesis, a higher level of somatisation was associated with less somatic disease burden.

*Conclusion* - Geriatric assessment has important added value in older patients referred with medically unexplained symptoms, as in half of the patients symptoms can be partially or fully explicable following careful assessment of co-morbidity and frailty.

## Introduction

Medically Unexplained Symptoms (MUS) are a common phenomenon. In primary care 15-39 % of presented somatic symptoms remain unexplained<sup>1,2</sup>. MUS become burdensome when MUS persist over time and people persevere in seeking medical help. Psychological processes like somatisation and hypochondriasis are thought to predispose, precipitate or perpetuate the persistence of MUS. Somatisation is conceptualised as a tendency to express psychological distress with somatic complaints. In the medical literature, somatisation is often defined according to Lipowski (1998) as “the tendency to experience and communicate somatic distress and somatic symptoms unaccounted for by relevant pathological findings, to attribute them to physical illness, and to seek medical help for them”<sup>3</sup>. Hypochondriasis is an excessive preoccupation or worry about having a serious medical illness<sup>4</sup>. Although hypochondriasis can be present without having any medical symptoms, approximately 75% of the people suffering from hypochondriasis also have MUS<sup>5</sup>. In the Diagnostic and Statistical Manual of Mental Disorders IV-TR (DSM IV-TR), a widely used classification system for psychiatric disorders, MUS are considered as the core criterion for a somatoform disorder. Nonetheless, depending on type and combinations of symptoms, duration, intensity and level of distress, patients suffering from MUS may or may not meet the criteria for a specific somatoform disorder like somatisation disorder, pain disorder, conversion disorder, hypochondriasis, or somatoform disorder not otherwise specified. It is important to note that a Somatoform Disorder can be present when a patient has partially explained somatic symptoms: the adverse effects of the somatic symptoms on everyday life are substantially more severe than expected. The burden of MUS and Somatoform Disorders is large: patients often report a low quality of life and suffer from co-morbid anxiety and depressive disorders<sup>6</sup>. Furthermore, MUS give rise to high levels of health care consumption in search for an organic origin of complaints, which places patients at risk for extensive and potentially iatrogenic investigations<sup>2</sup>. In 10-30 % of MUS, and 50-70 % of hypochondriasis, the condition becomes chronic<sup>7</sup>.

Although empirical data are scarce, prevalence rates range from 1.5% through 18% for MUS and from 5% through 13% for Somatoform Disorders in people aged 65 years and over<sup>8</sup>. These figures are somewhat lower than those reported for younger people, which may be explained by diagnostic problems of MUS or Somatoform Disorders in later life. At an older age, somatisation often occurs in the context of chronic somatic diseases<sup>9</sup>, and thus more pathological findings have to be examined in an attempt to account for the physical complaints<sup>10</sup>. Higher co-morbidity rates as well as higher a priori chances of underlying physical illnesses as explanation for physical complaints in older people probably cause physicians to consider these symptoms as explained<sup>11</sup>.

To date, several etiological models for (the persistence of) MUS have been proposed<sup>12-16</sup>. Although consensus exists on the interplay between biological, psychological and social elements in the aetiology of MUS, models differ in the relative contribution of these factors. Psychological and social processes can be a precipitating factor, but are most often assumed to be predisposing and perpetuating factors. Biological processes, by contrast, are only included as a precipitating factor. In most models, bodily sensations that give rise to somatic symptoms

are thought to originate from both normal physiological processes (e.g. bowel peristaltic), from pathophysiological processes due to sub threshold medical conditions (e.g. elevated blood glucose levels without actual diabetes), or from clinical diseases. The contribution of pathophysiological processes is also reflected by the criterion for somatoform disorders that complaints have to be more severe than can be explained by the underlying somatic condition. Further support for the contribution of these processes can be deduced from the finding that in depressed older adults the level of somatisation increases with the number of chronic somatic conditions<sup>17</sup>. Thus, we might expect somatisation problems to increase parallel with an increase in somatic diseases. Therefore, more emphasis should be placed on the physical functioning of patients suffering from MUS or Somatoform Disorders, particularly in later life. The objective of the present study was 1) to describe the physical morbidity and functioning of a convenience sample of patients referred for MUS to an outpatient Mental Health Centre for Older Adults in the Netherlands and 2) to explore the association between the level of somatisation and physical performance. We hypothesized a positive association between a higher level of somatisation and lower level of physical performance.

## Methods

### *Design*

All patients, aged 60 years or over, referred for MUS to an outpatient Mental Health Centre for Older Adults in Nijmegen in the Netherlands between September 2006 and October 2007 underwent a standardized examination by a geriatrician (C.B.), old-age psychiatrist (P.H.) and clinical psychologist (DvD) within two weeks after referral. The psychiatric characteristics of this cohort have been described elsewhere<sup>18</sup>. In short, psychiatric disorders were assessed by an experienced old-age psychiatrist (P.H.) according to the criteria of the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) using the Mini International Neuropsychiatric Interview version 5.0.0. The senior clinical psychologist (Dv.D.) focussed on the consequences of the somatic symptoms in everyday life, in order to prepare for and motivate patients for cognitive-behavioural treatment. The Whiteley Index (WI) was administered to assess the severity of hypochondric beliefs and attitudes as a measure of somatisation<sup>4,19</sup>. This self-report questionnaire includes 14 dichotomised items (yes/no) related to bodily preoccupation, disease phobia and conviction of the presence of disease. The sum score range from 0-14, with higher scores being indicative of more severe somatisation levels and hypochondric beliefs. The Dutch version has been validated in different populations with showing good test-retest reliability (0.90) and good internal consistency (Cronbach's  $\alpha$  ranges between 0.76 and 0.80). Although a cut-off for clinically relevant levels of somatisation is not available, the WI appeared to discriminate reasonably well between hypochondriacal and non-hypochondriacal subjects<sup>20</sup>.

### *Geriatric assessment*

The geriatrician performed a complete geriatric assessment including an ECG, routine blood chemistry, somatic disease burden, activities of daily living and cognitive screening with

the Mini-Mental State Examination (MMSE) <sup>21</sup>. All correspondence of previous medical examinations was evaluated and when relevant, previous medical specialists were consulted by telephone. If considered necessary, further investigations were carried out. The duration of the primary complaint was estimated in months and patients had to rate the current intensity of their primary complaint on a visual analogue scale (VAS).

The geriatrician (C.B.) who did the geriatric assessment judged the main symptom as completely explained, partially explained or unexplained by an underlying somatic disease. As there is no objective criterion to decide whether a bodily complaint is medically explained or not, a second geriatrician (L.D.) also classified the patients' symptoms according to these three categories. This classification was based on the medical records (including findings of the first geriatrician), but blind for the final judgement of the first geriatrician. Subsequently, discrepancies were discussed between both geriatricians in order to achieve consensus. In case no consensus could be reached, a third geriatrician made the final classification for that patient (M.O.R.).

**Somatic Comorbidity** – The Cumulative Illness Rating Scale – Geriatric (CIRS-G) was used to measure cumulative burden of diagnosed somatic diseases <sup>22</sup>. This scale was scored by a clinician and contains 14 domains: 13 domains of different somatic organ systems and 1 psychiatric domain, which was left out. Each item can be scored from 0-4 (range 0-52, higher score: more comorbidity). In our study we used the sum score and the 'severity index' of the CIRS-G: the total score divided by the number of domains on which the score was > 0 <sup>23</sup>.

**Frailty** – As a gold standard for frailty does not exist and available frailty indices at least partly overlap with the criteria for psychiatric diseases <sup>24,25</sup>, we administered two proxy measurements

for physical frailty: the Hand Grip Strength <sup>26</sup>, and the Timed-Up-and-Go-Test (TUG) <sup>27</sup>. Hand Grip Strength was measured using the Jamar Dynamometer as the best score of two consecutive attempts. The TUG is a measure that scores the time needed by a patient to get up from a chair, walk 3 metres, turn around, walk back to the chair and sit down again. Both tests have high inter-rater and test-retest reliability.

**Functional status** – We used the Groningen Activity Restriction Scale (GARS) to measure activities of daily living <sup>28</sup>. This self-assessment scale contains 18 items of ADL and IADL, with 1-4 points per item, (range 18- 72; higher score: more dependent).

### *Analyses*

First, we evaluated the origin of patients main symptoms. We categorised patients referred for MUS in those having completely explained, partially explained and unexplained medical symptoms. Inter-rater reliability of this classification into three categories by both geriatricians was estimated by calculating the kappa.

Secondly, we compared patients suffering from somatoform disorders with partially explained or unexplained main symptoms with respect to physical functioning. Differences were tested by chi-square and by two-sample t-test or Mann-Whitney U-test. As ours was a pilot study and data-analysis was mainly explorative, we did not apply a Bonferroni correction and considered p-values of less than .05 to be significant.

Thirdly, correlations between measures of somatisation (Whiteley Index) and measures of somatic disease burden (CIRS-G, GARS) and frailty (Hand Grip Strength, TUG) were calculated by Pearson's correlation. Correlation coefficients .10 and .30 are considered small, between .30 and .50 medium and between .50 and 1.00 strong<sup>29</sup>.

## Results

### *Patient characteristics*

A total of 48 patients were referred for Medically Unexplained Symptoms (MUS) of which 37 patients agreed to a diagnostic assessment. Reasons for refusal were: lack of motivation (n=4), aversion against mental health organization (n=2), hospitalization for an acute disease (n=2), age below 60 years (n=1), moved homes (n=1), unknown (n=1).

The 37 patients who went through the diagnostic procedure had a mean age of 74.8 years (SD=7.0 years) and 31/35 (84%) patients were female. 15 Patients (41%) were married and lived with their partner; the other 22 patients lived alone (widowed, n=18; divorced, n=2; never married, n=2). The mean MMSE score was 27.5 (SD = 2.4) indicative of good cognitive functioning.

### *Classification of the primary symptom*

The kappa of inter-rater agreeability between the overall classification of the main somatic symptom as completely explained, partially explained, or unexplained by both geriatricians was 0.67.

The first geriatrician (CB) classified three out of these 37 patients as having a completely explained main somatic symptom. The second geriatrician (LD), who blindly evaluated the medical records, classified these same three patients as having a somatic disorder that completely explained their symptoms. In addition he scored also two other patients as such. This resulted in a kappa of 0.72 for the comparison between completely explained versus partially explained/unexplained symptoms. After discussing these two patients, consensus was reached that the underlying somatic condition only partially explained the main symptom. Of the remaining 34 patients, the main symptom spontaneously resolved in two patients, whereas the other 32 patients all met DSM-IV-TR criteria for a Somatoform Disorder (see for details also Hilderink et al., 2009)<sup>18</sup>. Among the 32 patients with a somatoform disorder, the kappa of inter-rater agreeability of main complaints that could be partially explained by an underlying somatic disorder versus those that were unexplained between the first (C.B.) and second (L.D.) geriatrician was 0.69. Nonetheless, consensus could quite easily be reached in discrepant cases when both geriatricians presented their arguments to each other. This consensus meeting resulted in a final classification of 15 patients with a partially explained and 17 with a unexplained main symptom.

### *Physical functioning in somatoform disorders in later life (n=32)*

During the geriatric assessment, 20 patients reported pain as their primary symptom (head, n=6; whole body, n=4; abdominal, n=4; mouth, n=3; back, n=2; joints, n=1). The other primary complaints were shortness of breath/coughing (n=5), dizziness (n=3), and further

dysarthria, paraesthesia, anxiety/loneliness, and fatigue.

Table 1 presents the characteristics of all patients diagnosed with a Somatoform Disorder, stratified for patients with partially explained and unexplained main symptoms. The mean duration of the main symptom was almost 6 years in both groups. Patients in whom the main symptom was partially explained by a somatic condition were older ( $p = .049$ ), more functionally impaired (GARS  $p = 0.030$ ), had higher chronic disease burden as measured by the CIRS-G total score ( $p = 0.049$ ), a lower gait speed (TUG  $p = 0.035$ ) and lower Hand Grip Strength ( $p = 0.050$ ) compared to patients with no explanation for their main symptom. This latter group, however, had numerically higher levels of somatisation on the Whiteley Index, although the difference did not reach statistical significance ( $p = 0.068$ ).

**Table 1** Comparison of somatic disease burden in patients suffering from somatoform disorder with and without a partially explained medical symptom ( $n = 32$ )

Variables		Explanation for primary complaint		Statistics
		Unexplained (n=17)	Partially (n=15)	P
<i>Demographics:</i>				
• Age (years)	mean (SD)	73.0 (6.6)	77.7 (6.2)	.049
• Female sex	n (%)	13 (77)	13 (87)	0.46
<i>MUS characteristics:</i>				
• Duration of MUS (months)	mean (SD)	70 (71)	71 (72)	0.99
• Intensity primary symptom (VAS)	mean (SD)	7.2 (21)	7.7 (24)	0.67
<i>Psychiatric morbidity</i>				
• Depressive disorder	n (%)	11 (65)	7 (47)	0.31
• Anxiety disorder	n (%)	6 (35)	4 (27)	0.60
<i>Physical functioning:</i>				
• CIRS total score	mean (SD)	6.5 (4.2)	10.5 (6.0)	.049
• CIRS severity index	mean (SD)	1.4 (0.4)	1.8 (0.6)	.076
• Grip strength	mean (SD)	32.7 (13.7)	22.2 (11.5)	.050
• Timed up-and-go	mean (SD)	7.9 (2.9)	11.8 (5.4)	.035
• GARS	mean (SD)	23 (10)	34 (14)	.030
<i>Level of somatisation</i>				
• Whiteley Index	mean (SD)	6.9 (4.0)	4.6 (3.4)	.068

**Abbreviations:** MUS, medically unexplained symptoms; GARS, Groningen Activity Restriction Scale. CIRS-G: Cumulative Illness Rating Scale Geriatric. VAS, visual analogue scale; SD, standard deviation; p, p-value;



### *Associations between somatisation and parameters of physical functioning*

Somatisation, as indexed with the Whitely Index, had a substantial but inverse relationship with gait speed (TUG,  $r = -0.44$ ,  $p = .015$ ) and a definite, but small relationship with Hand Grip Strength ( $r = 0.27$ ,  $p = .16$ ). There was also a small inverse relationship with the CIRS severity index ( $r = -0.21$ ,  $p = .27$ ) and the Groningen Activity Restriction Scale (GARS,  $r = -0.32$ ,  $p = .078$ ). We found virtually no relationship with the CIRS-G total score ( $r = -0.02$ ,  $p = .91$ ).

## Discussion

This is the first study on a multidisciplinary assessment of patients referred for Medically Unexplained Symptoms (MUS) in an older population. Our patients were suffering on average for 6 years with their somatic symptoms and their referring physicians referred them specifically for psychological treatment having finalised their somatic diagnostic work-up probably much earlier. Nonetheless, we showed that these patients referred to an old age psychiatry setting still importantly benefit from a comprehensive geriatric assessment. A small proportion (8%) of patients with seemingly unexplainable symptoms still could be explained, while nearly half of the formerly unexplained symptoms could be partially explained.

There are several limitations inherent in such a small pilot study on a convenience sample referred to an old age psychiatry setting. Here we would like to address the lack of statistical power and the fact that the cross-sectional nature hampers firm conclusions and causal interferences.

Nevertheless, although preliminary, our results are important. MUS and Somatoform Disorders in later life are largely neglected in geriatric literature, whereas chronic nature of the complaints, the physical functioning and frailty of this older age group may have considerable clinical consequences.

Although referred for MUS, in three (8%) out of 37 patients in our sample there did turn out to be a completely somatic explanation for the main symptom. In previous studies, misdiagnosis of MUS has mainly been focused on misdiagnosis in conversion: in a review a mean percentage of 4 % misdiagnosis was found in 22 studies published since 1970<sup>30,31</sup>, which is lower than in our study.

The overall agreement between two geriatricians judging the main symptom as completely explained, partially explained or unexplained was moderate to good. We found only two studies on medical judgment of symptoms in these three categories. Our kappa is in line with these studies, which used a different methodology and were conducted in younger populations. In the first study, a kappa of 0.76 was found on agreement between two psychiatrists and one general physician using a chart review method<sup>32</sup>. The second study, a retrospective chart study, reported an agreement in diagnosis of only 43% between paediatricians in a panel for children who were referred for unexplained chronic pain<sup>33</sup>.

Comparison of the groups of patients with a partially explained and unexplained main somatic symptom showed that the patients in the first group were significantly older, had more somatic co-morbidity, a lower hand grip strength, and a slower gait speed. The CIRS-G

total score for the group of patients with partially explained somatic complaints was comparable with a group of patients on an acute geriatric ward<sup>22</sup>, but the CIRS-G 'severity index' was low and not significantly different for both groups. This indicates that, although the number of somatic diseases was higher in the partially explained group, the severity of the underlying somatic diseases was low to moderate. Overall, the comprehensive geriatric assessment data indicate that the group of persons with unexplained symptoms is a strikingly healthy population from a somatic point of view, whereas the group of persons with partially explained symptoms is less healthy and more frail. Particularly this latter group may benefit from a multidisciplinary approach including geriatric assessment.

In contrast to our hypothesis, a higher level of somatisation was associated with a better physical performance. First, the strong trend towards higher level of somatisation, as measured with Whiteley Index, was associated with a lower degree of frailty, of which the Timed Up-and-Go test reached statistical significance. Second, we did not find an association with the CIRS-G sum score, whereas the severity index of the CIRS-G was negatively associated with somatisation: more somatic conditions, be it of moderate severity, was associated with less somatisation.

There might be several explanations for this unexpected finding; physical problems in later life might result in more adequate interpretation of bodily sensations and physical problems might have validated people's help-seeking behaviour and thereby have had a dampening effect on the level of somatisation. This also offers an alternative explanation for the decreasing prevalence rates of MUS and somatoform disorders with age<sup>8</sup>.

### *Conclusion*

A geriatric assessment has added value in diagnosing older patients referred for MUS, even when symptoms exists for years. In half of the patients symptoms that could not be explained before, proved to be partially or fully explicable following such a comprehensive assessment. Moreover, a high somatic disease burden was found in those patients with partially explained symptoms. Longitudinal research is necessary to disentangle the relationship between somatisation and somatic disease burden in later life as this will guide therapeutic strategies, containing somatic as well as psychiatric and psychological interventions.

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