Somatoform disorders in general practice.

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Chapter 3

The reporting of specific physical symptoms for mental distress in general practice.

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Abstract

Objective Do patients report specific physical symptoms in the presence of mental distress, taking into account the presence of somatic disease?
Methods Cross-sectional data were collected from 1458 participants in eight general practices in The Netherlands. Electronic patient records provided information on somatic disease. Questionnaires included the Hospital Anxiety and Depression Scale (HADS) to measure mental distress and the Physical Symptom Checklist (PSC).
Results Patients reporting mental distress reported all types of physical symptoms more often than did patients without mental distress. Multivariate analyses in women, corrected for the presence of somatic disease, did not substantially change the univariate pattern. Odds ratios were particularly high (>6) for feeling tired or having low energy, fatigue without exertion and forgetfulness.
Conclusion It is the level of mental distress rather than gender or somatic disease that accounts for the reporting of any physical symptom. Fatigue might be an exception, but here, the classification as “physical” rather then “mental” is somewhat ambiguous.

Introduction

Patients who are depressed or anxious report more physical symptoms than do patients who are not. One hypothesis is that these patients experience specific distress-related physical symptoms. This makes sense because mental disorders have specific physiological aspects, which are part of the definition. Anxiety disorders can be accompanied by autonomic arousal, e.g., palpitations and sweating, and depressive disorders can be accompanied by fatigue, subjective memory disturbances or sleeplessness.

However, the sensitivity of specific presented physical symptoms for the diagnosis of depression is not very high.[1 2] The number of physical symptoms rather than the specific type of symptom is found to be predictive for psychiatric disorders or psychological distress.[3 4 5 6] This is in line with alternative hypotheses, e.g. that feelings of depression or anxiety lead to a lower threshold for bodily events, more worrying over health concerns, or perhaps more illness behaviour. These hypotheses would predict a non-specific elevation of all sorts of physical symptoms in relation to mental symptoms.

In this paper, we address the question whether mental distress has a relation with specific physical symptoms. Because data from the general practitioner (GP) were available, we had the opportunity to take into account the presence of somatic disease. We intend to present the relative attribution of both mental distress and somatic disease to the reporting of current specific physical symptoms, rather than to eliminate physical symptoms explained by somatic disease.

Methods

Study design

The Somatisation study of the University of Leiden (SOUL) in The Netherlands was designed to evaluate the prevalence and treatment of somatoform disorders and the comorbidity with anxiety and depressive disorders in primary care.[7] In this paper, we report findings of the initial cross-sectional data. Between April 2000 and May 2002, a large sample of attendees ('consulting population') and a random sample from the listed patients ('general population') from eight university-affiliated general practices in The Netherlands were sent questionnaires by mail. After 2 weeks, nonresponders were sent a reminder. To avoid problems with language, the study was limited to Dutch natives. Patients were not included if they were unable to participate in an interview due to handicaps such as deafness, aphasia or cognitive impairment. For the

present analyses, patients aged 25-70 years from the consulting and the general population were included.

Somatic disease

Electronic medical records of all patients were available through the central database of the Family Practice Registration Network Leiden RNUH-LEO. The GPs have coded, for each contact, symptoms and diagnoses according to the International Classification of Primary Care [8] (ICPC). Classification is possible within 17 chapters according to anatomical and physiological characteristics: Somatic diagnoses are coded in 15 chapters, leaving two chapters to code 'psychological problems' and 'social problems'. Within each chapter, the ICPC distinguishes between mere symptoms and specified diagnoses. In the present study, the classification of somatic disease was based on the specified diagnoses within the 15 somatic chapters.

Somatic disease was rated as present when the patient recently had contacted his GP for a somatic disease (within 2 months prior to the questionnaire) or when the patient had a somatic disease in the medical history that the GP thought to be relevant to keep under attention. For example, recent fractures were included but old fractures were not.

Patients

Consulting population. For each general practice, the sample consisted of all consecutive patients on 13 to 30 arbitrary days within a 3-month period proportionate to the GP's workload, until approximately 200 patients were included for each GP. This approach yields a representative sample of consulting patients. Of 1575 attendees, a total number of 929 patients (59%) returned the questionnaire and was willing to participate. Nonresponse analyses showed that particularly younger male patients (25-44 years) were less willing to participate (response 46%). When comparing reasons for consultation in the 3 months prior to selection, nonresponders did not have more psychological problems (ICPC Chapter P: both 14%) than responders. They did have slightly more social problems, e.g., problem with working condition, relationship problem or loss/ death of partner or family (ICPC Chapter Z: 7% versus 4%). Approximately equal numbers of both nonresponders and responders consulted the family physician five or more times in the year prior to selection. Details of the study population have been reported elsewhere.[7]

General population. An additional sample of all listed patients provided 579 participants. A comparison with all listed patients demonstrated an underrepresentation of younger male patients, again showing that they were less willing to participate. This additional sample was needed to increase the number of patients, especially healthy patients without known somatic disease and with no distress.

Questionnaires

Participants completed four questionnaires, including a Physical Symptom Checklist (PSC) and the Hospital Anxiety and Depression Scale (HADS). The PSC is a checklist of 55 physical symptoms that were mentioned in any of the diagnostic categories of the DSM-III classification.[9] It includes a broad array of symptoms, covering most organ systems. Four symptoms are gender specific and were excluded from the present analyses. The presence of symptoms is rated on a severity scale from 0 to 3 for the preceding week. A symptom is rated as present for the scores 2 and 3: 'bothersome often or most of the time during last week'. Symptoms were grouped in five categories to facilitate presentation: autonomic, general/neurological, musculoskeletal/pain, gastrointestinal and warm/cold/urogenital. The HADS [10] consists of 14 questions on mental distress (7 on depression and 7 on anxiety); the total score ranges from 0 to 42. It contains no questions on physical symptoms. Mental distress was rated as present when the total HADS score was 13 points or more. At this score, the total HADS detected psychiatric disorders with a sensitivity of 79% and a specificity of 77% in general medical outpatients.[11]

Analyses

Of 1508 participants, 34 did not complete all 14 questions of the HADS. No electronic patient records were found for an additional 16 patients. The analyses were performed on a total study population of 1458 patients. Reported percentages of symptoms (point prevalence rates) were set out in graphs using Excel. Univariate and multivariate odds ratios were calculated using SPSS for Windows 11.0, multivariate odds ratios were calculated through logistic regression. Symptoms were excluded from analyses if cross tabulation resulted in cells with less than three persons. All multivariate logistic regression models included mental distress and somatic disease. In the preliminary analyses, we added the interaction term (Mental Distress x Somatic Disease) to model a potential difference in the effect of mental distress for patients with or without somatic disease. The odds ratios tended towards a value below 1 but were never statistically significant. In this paper, we will present the models without interaction term.

Results

Table 1 shows that 35% of all patients had high anxiety scores and 20% had high depression scores. Participants reported an average of 4.4 symptoms as bothersome

often or most of the time during last week on the PSC. Women had higher scores than men did.

Figure 1 shows the percentages of separate symptoms for four groups of patients. Healthy persons (no somatic disease, no mental distress) reported very few symptoms. Patients with a known somatic disease (but no mental distress) also reported few symptoms. Persons with mental distress (but no somatic disease) reported far more symptoms, and persons with mental distress and a known somatic disease reported slightly more symptoms. This was not specific for autonomic symptoms but was apparent in other symptom categories as well.

The relationship of mental distress and separate symptoms is given in Table 2. Practically all univariate odds ratios were significantly higher then unity, with P values < 0.001, with the exception of a few low prevalent symptoms. Multivariate analyses for men were not possible due to the low prevalence of separate symptoms. Multivariate analyses in women did not substantially change the univariate pattern. Odds ratios were particularly high (N6) for feeling tired or having low energy, fatigue without exertion and forgetfulness.

The presence of a somatic disease had an independent effect on the reporting of symptoms and was significant for frequent urination, feeling tired or having low energy, fatigue during low exertion and difficulty walking. The effect of somatic disease was not so large as was the effect of distress and could have been the result of multiple comparisons. When the presence of a musculoskeletal disease was included in the model separately, this obviously had effect on the reporting of musculoskeletal symptoms (significant odds ratios around 2), but not on the other symptoms (nonsignificant odds ratios around 1; not shown).

Table 1. Patient characteristics of study population (n=1458).

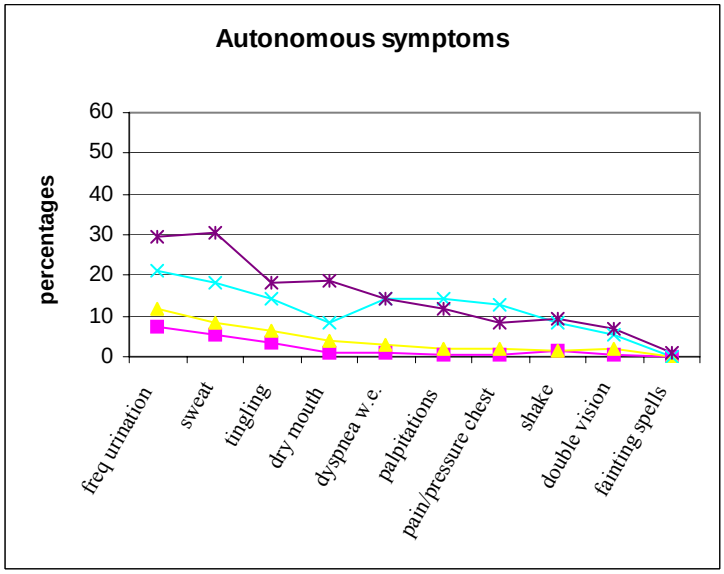
	Men (n=540)	**Women** (n=918)	**Total** (n=1458)
Age (mean, SD)	47.2 (10.3)	44.9 (10.7)	45.8 (10.6)
Sampled from consulting population	55.4 %	66.0 %	62.1 %
Somatic disease (% present)	78.7 %	80.9 %	80.1 %
Anxiety (HADS anxiety score ≥ 7 (%))	27.6 %	39.2 %	34.9 %
Depression (HADS depression score ≥ 7 (%))	17.2 %	21.7 %	20.0 %
Distress (HADS total score ≥ 13 (%))	22.2 %	30.1 %	27.2 %
Physical symptoms (PSC count: mean, SE, P50)	3.1 (0.2) 1	5.1 (0.2) 3	4.4 (0.1) 2

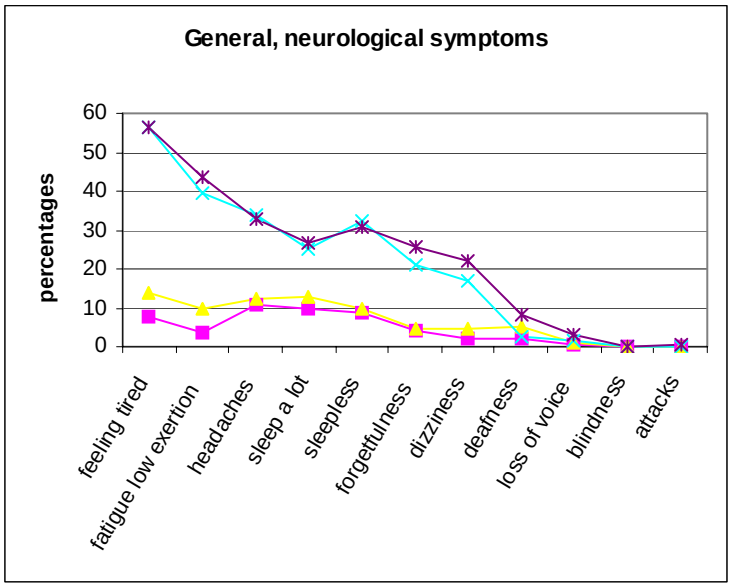
Table 2. Odds ratios (OR) for the presence of symptoms (reported on questionnaire PSC) in men (n=540) and women (n=918).

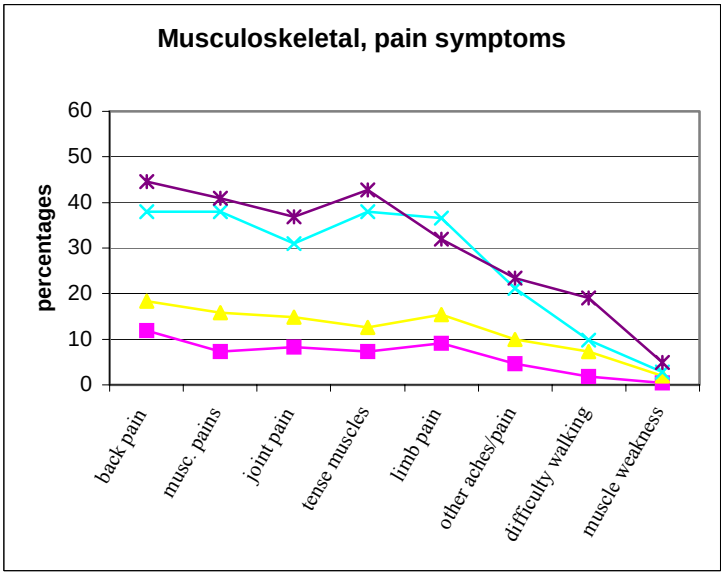
	Prev (%)	OR univariate		OR multivariate	
		Men	Women	(only women)	
		Distress (hads≥13)	Distress (hads≥13)	Distress (hads≥13)	Somatic disease (present)
Autonomic symptoms (10)					
Frequent urination	15.4	3.7	3.0	3.0	1.8
Sweat	13.4	5.7	4.1	4.1	1.7
Tingling	8.8	5.5	2.9	2.9	1.4 ns
Dry mouth	7.1	8.5	4.6	-	-
Dyspnea without exertion	5.8	18.6	4.1	-	-
Palpitations	4.5	10.1	7.9	-	-
Pains or pressure on chest	3.6	7.0	6.2	-	-
Shake	3.6	10.1	4.8	-	-
Double vision	3.0	-	2.9	-	-
Fainting spells	0.2	-	-	-	-
General/ neurologic (11)					
Feeling tired or having low energy	24.5	13.4	7.4	7.4	1.5
Fatigue during low exertion	17.8	12.9	6.4	6.5	1.8
Headaches	17.8	3.7	3.4	3.4	1.0 ns
Sleep a lot	15.9	3.8	2.2	2.2	1.1 ns
Sleepless	15.4	3.6	4.5	4.5	1.0 ns
Forgetfulness	9.9	5.3	9.7	9.7	1.2
Dizziness or lightheadedness	8.5	5.7	6.9	6.9	1.6
Deafness	5.2	2.0	1.5 ns	-	-
Loss of voice	1.4	9.1	2.0 ns	-	-
Blindness	0.1	-	-	-	-
(epileptic) attacks, convulsions	0.1	-	-	-	-
Musculoskeletal, pain (8)					
Back pain	24.2	4.0	3.5	3.5	1.5 ns
Muscular aches and pains	21.3	4.0	4.0	4.1	1.5 ns
Joint pain	19.5	3.7	3.4	3.4	1.4 ns
Tense muscles	19.8	6.2	5.1	5.1	1.3 ns
Limb pain	19.2	2.9	2.8	2.8	1.1 ns
Other aches and pains	12.7	3.5	2.8	2.8	1.4 ns
Difficulty walking	9.3	3.5	2.9	3.0	2.3 ~
Muscle weakness or paresis	2.4	6.0	2.2	-	-
Gastrointestinal (13)					
Flatulence	13.9	2.9	3.2	3.2	1.1 ns
Bloating	9.5	7.0	3.5	3.5	1.5 ns
Heartburn	7.5	3.1	2.7	2.7	2.4 ~
Abdominal pain	7.5	2.9	3.0	3.0	1.4 ns
Indigestion	6.2	2.7	2.9	3.0	2.8 ~
Diarrea	4.9	3.7	2.5	2.5	1.7 ns
Constipation	4.0	6.0	3.5	-	-
Nausea	4.1	-	5.7	-	-
Loss of appetite	3.9	7.4	7.1	-	-
Weight loss	3.2	3.6	3.2	3.2	1.0 ns
Difficulty swallowing	2.1	-	12.5	-	-
Choke a lot	1.9	9.9	7.3	-	-
Vomiting	1.1	-	3.6	-	-
Warm/ cold, urogenital (9)					
Sexual indifference	12.8	6.0	4.9	4.9	1.0 ns
Hot flushes	12.3	9.2	3.9	3.9	1.7 ns
Intolerance to cold	11.0	5.7	3.2	3.2	1.2 ns
Intolerance to heath	9.6	3.1	3.8	3.9	2.4 ~
Chills	4.3	2.1 ns	3.3	-	-
Burning sensation in/around genitals	2.5	9.1	2.2	-	-
Pain during intercourse	2.3	3.5 ns	2.6	-	-
Difficulty urinating	1.4	-	1.2 ns	-	-
Pains during urination	0.8	-	2.0 ns	-	-

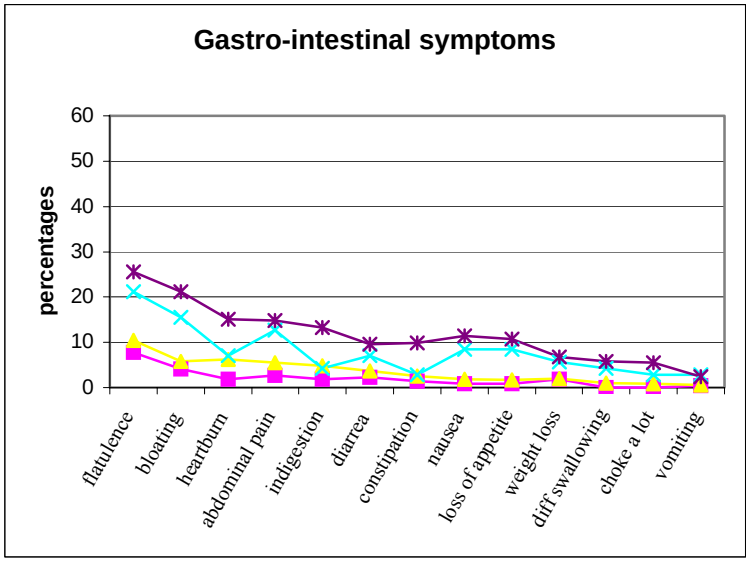
All ORs were significantly different from unity ($p \leq 0.002$), except when indicated with '~' ($p < 0.05$) or 'ns' (not significant, $p \geq 0.05$).

Figure 1. Five categories of symptoms: reported percentages within healthy patient group with/ without mental distress, and within patient groups with known somatic disease with/without mental distress (HADS total score 13 or more).








Gastro-intestinal symptoms
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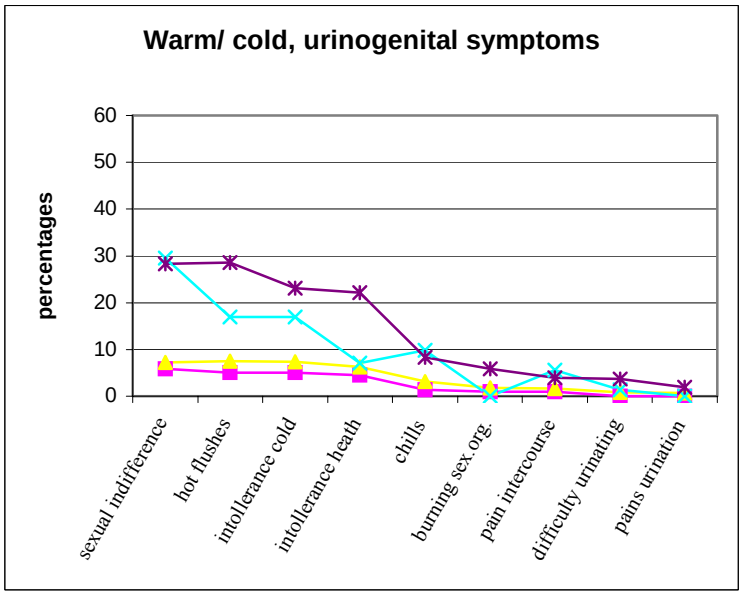
Warm/ cold, urinogenital symptoms
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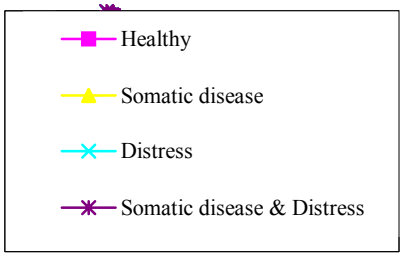
Healthy
Somatic disease
Distress
Somatic disease & Distress

Discussion

In this study, the presence of mental distress had a major effect on the reporting of all types of physical symptoms in both men and women. Multivariate analyses in women showed the pattern to be independent of the presence of somatic disease. This implies that mental distress is a much stronger predictor for the reporting of any physical symptom than somatic disease. We found no specific stress-related physical symptoms, except perhaps fatigue and forgetfulness. Odds ratios were particularly high (>6) for feeling tired/having low energy, fatigue without exertion and forgetfulness. For these symptoms, the classification as 'physical' rather then 'mental' is somewhat ambiguous; for example, bodily fatigue is difficult to distinguish from mental fatigue or decreased energy.

Methodological issues

The multivariate analyses had to be limited to women. Although the number of study participants was substantial, the number of men without somatic disease who reported mental distress was low. From the univariate analyses, we do not expect a difference in the effect of mental distress between men and women. We observed only a higher basic level of symptoms for women.

It is hard to accurately control for physical disease. There clearly is a relationship between somatic disease and mental distress, for symptoms of anxiety as well as depression. For some neurological diseases, there is a direct biological link; for other diseases, the relationship is less straightforward. We included the presence of somatic disease in the analyses to control for a potential elevation of symptom reporting. As compared with distress, results showed that this was not an important factor. In a separate analysis, we evaluated the
effect of diseases of the musculoskeletal system, such as arthrosis and arthritis. There was an elevation of a limited number of disease-specific symptoms on top of a large effect of distress.

Finally, it should be noted that information on symptoms was collected with a checklist. It could be that patients do not label stress-related physical symptoms that they are aware of as symptoms to be reported in the context of a physical symptom checklist. If participants do not report physical symptoms that they recognize as stress related, e.g., palpitations as part of anxiety, no specific relationship will be found where it might exist. Moreover, it can be expected that, in direct contact with a physician, patients will selectively report symptoms that they think are relevant. Thus, our findings cannot be extrapolated to symptoms reported in direct physician contacts.

Considerations

The findings are consistent with previous findings in the international WHO study of Psychological Problems in General Health Care that did not take into account somatic disease. Simon et al.[3] reported a strong association between clinically significant physical symptoms reported in the CIDI interview and psychological distress according to the GHQ-28, but symptoms (or symptom groups) did not show differential association with psychological distress; the point-biserial correlations were in the range of .06 to .24. Piccinelli and Simon found few differences between the two sexes and across cultures.[12] They were able to perform separate analyses for anxiety scores and depression scores, but this did not alter their conclusions. For instance, palpitations correlated equally with self-reported anxiety symptoms (.22) as with self-reported depressive symptoms (.17).

An explanation for the finding that patients with symptoms of anxiety or depression (mental distress) report all types of physical symptoms is not straightforward. Basically, there can be three routes to explain the relationship. First, symptoms of anxiety or depression could occur as a reaction to physical symptoms. Second, symptoms of anxiety or depression could lead to a general increase in the tendency to experience, interpret or report symptoms of minor physical ailments. Last, there could be a third factor leading both to all types of physical symptoms and, independently, to symptoms of anxiety or depression. The monotony of the odds ratios for each and every type of symptom suggests the second or third, rather than the first route of explanation. There seems to be a general amplification of symptom reporting irrespective of specific ailments. This could be due to a general amplification of the reporting of symptoms in relation to states of anxiety or depression, or due to a general tendency to report all sorts of symptoms, perhaps in relation to personality characteristics.[13]

The expression of physical symptoms is the outcome of a complex process of perception and interpretation of bodily sensations.[14] According to general medical wisdom, it is often assumed that there is a clear-cut dependency between physical symptoms and physiological processes. Contrary to this opinion, it has been repeatedly demonstrated that the correlation between physiological parameters and the expression of physical symptoms, in general, is fairly low.[15 16 17] This brought Pennebaker to define a physical symptom as ‘a perception, feeling, or even belief about the state of our body’.[15] A person in distress may be more aware of all sorts of major and minor bodily sensations that escape the attention of a participant that is more at ease. It has been hypothesized that the threshold for the perception of bodily signals is reduced in distress, possibly due to amygdalar-hypothalamic sensitization.[18] These bodily sensations in distressed participants are, perhaps, more easily interpreted and acted upon as indicators of disease.[19] Most people can provide social or culturally

based (physiological) explanations for their symptoms. While these symptoms may not accord with biomedical theory, they are sufficient to give meaning to distress and to guide help seeking and health care utilization.[20] This is in line with the finding that mental health impairment is related to health behaviours at a level equal to or exceeding those of physical health impairments.[21] Our findings comply with a model of anxiety and depression acting as a general modifier of the perception, the interpretation and/or the expression of any physical symptoms. Such a model could perhaps also explain why participants in the aftermath of excessive stressors, such as war veterans or victims of terrorism, tend to report a broad variety of physical symptoms for which a physiological explanation, in many, cases is not found.[22]

Conclusion

It is the level of mental distress rather than gender or somatic disease that account for the reporting of many physical symptoms. With the exception of fatigue and forgetfulness, we found no specific stress-related physical symptoms. This held true for both patients with and without somatic disease.

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