# De behandeling van SOLK in de huisartsenpraktijk

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Deze thesis werd geschreven met als doel onderdeel te zijn van een doctoraat in het kader van de behandeling van Somatisch Onvoldoende verklaarde Lichamelijke Klachten (SOLK) bij de huisarts. Gezien het literatuuronderzoek werd ingediend voor publicatie in het European Journal of General Practice werd het in het Engels geschreven in de vorm van een artikel.

# Wat is er tot op heden bekend over de rol van de huisarts bij de behandeling van SOLK?


## ABSTRACT

*Achtergrond*: Somatisch Onvoldoende verklaarde Lichamelijke Klachten (SOLK) zijn fysieke symptomen die niet door een organische ziekte kunnen worden verklaard. De prevalentie van SOLK in huisartsenpraktijken is hoog. Aldus spelen huisartsen een belangrijke rol bij de behandeling van deze ziekte. Echter uiten zowel huisartsen als patiënten met SOLK vaak ontevredenheid over deze consultaties.

*Doelen*: Tot op heden is er geen consistente manier om patiënten met SOLK in de huisartsenpraktijk te behandelen. Daarom zijn wij nagegaan wat er tot dusver is onderzocht over de behandeling van SOLK door de huisarts.

*Methodes*: De elektronische databanken PubMed, Embase, Web of Science Core Collection en PsycArticles werden doorzocht om relevante artikels te identificeren. Na uitsluiting van duplicaten werden 817 studies gescreend volgens in- en exclusiecriteria.

*Resultaten*: 33 artikels werden geselecteerd waarin het reattributiemodel, essentiële elementen bij de behandeling van SOLK, somatische interventies, op een juiste manier verwijzen, het schrijven van arbeidsongeschiktheid en het risico op iatrogene somatisatie werden besproken.

*Conclusie*: Het uitvoeren van een grondige anamnese, het bevragen van de mening van de patiënt, aandacht hebben voor het fysieke deel, het bieden van erkenning, het benoemen van de diagnose, geruststellen, het uitleggen van copingstrategieën, predisponerende, precipiterende en bestendigende factoren, het geven van hoop en het garanderen van continue zorg zijn essentiële elementen in een SOLK consultatie. Een andere opvallende bevinding is de iatrogene factor van het ziektegedrag van de patiënt. De belangrijkste constatering is echter dat het reattributiemodel niet langer naar voren wordt geschoven. Gezien het belang van de consistentie van een therapie voor de slaagkans ervan, is het noodzakelijk dat er dringend een uniform behandelingsmodel komt waarbij alle zorgverleners dezelfde taal spreken. Het is duidelijk dat verder onderzoek nodig is.

# What is known to date about the role of the general practitioner in treating MUS?


## ABSTRACT

*Background*: Medical Unexplained Symptoms (MUS) are physical symptoms which cannot be explained by organic disease. The prevalence of MUS in general practices is high, hence general practitioners (GPs) play a major role in treating the disease. However, both parties often express dissatisfaction concerning MUS consultations.

*Objectives*: To date there is no consistent way of treating patients with MUS in general practice. Thus, we assessed what is investigated so far about the treatment of MUS by GPs.

*Methods*: The electronic databases PubMed, Embase, Web of Science Core Collection and PsycArticles were searched to identify relevant articles. After excluding duplicates, 817 studies were screened according to in- and exclusion criteria.

*Results*: 33 eligible full text articles were withheld discussing the reattribution model, essential elements in treating MUS, somatic interventions, referral, writing sick leave and risk of iatrogenic somatisation.

*Conclusion*: Conducting a thorough anamnesis, assessing the patient's opinion, being mindful to the physical part, offering acknowledgement, naming the diagnosis, providing reassurance, explaining coping strategies, predisposing, precipitating and perpetuating factors, instilling hope and ensuring continued care have been proven to be important elements in MUS consultations. Another remarkable feature is the iatrogenic factor of the patient's disease behaviour. However, the most important finding is that the reattribution model is no longer put forward. Given the importance of the consistency of a therapy for its success rate, we urgently need to put forward a unified treatment model where all healthcare providers speak the same language. It is clear that further research is needed.


## INTRODUCTION

Medical Unexplained Symptoms (MUS) or functional somatic symptoms are physical symptoms which cannot be explained by organic disease. Despite the term 'medically-unexplained', developments in neuroscience and other disciplines mean it is now possible to explain many symptoms using models

which integrate biological, psychological and social processes [1]. General practitioners (GPs) play a major role in treating patients with MUS. The prevalence of MUS in general practices is estimated up to 27% [2]. According to research, patients with MUS prefer to consult their GP rather than any other health professional [3]. However, both parties often express dissatisfaction concerning MUS consultations. Doctors report less satisfaction compared to treating other illnesses [4]. The treatment of patients presenting with MUS causes 42% more emotional stress compared with the treatment of an average patient [5]. Patients on the other hand, experience MUS consultations to be rather unfocused and unstructured [6]. They frequently undergo potentially harmful and costly diagnostic testing and outpatient surgery [2]. Furthermore, they have poor long-term outcome of health care costs, work disability and subjective suffering [7].

To date there is no consistent way of treating patients with MUS in general practice. Thus, we assessed what is investigated so far about the treatment of MUS by GPs. In this systematic review, we evaluate over one thousand articles discussing the reattribution model, essential elements in treating MUS, somatic interventions, referral, writing sick leave and risk of iatrogenic somatisation.

## METHODS

### SYSTEMATIC REVIEW OF THE LITERATURE

This review was performed following the PRISMA (Preferred Reporting items for Systematic Reviews and Meta-Analysis) guidelines to ensure the quality, transparency, and comprehensiveness of the review. All articles were checked by quality and risk of bias using the Cochrane risk of bias tool by the first author.

### SELECTION OF STUDIES

The electronic databases PubMed (National Library of Medicine, NCBI), Embase, Web of Science Core Collection and PsycArticles were searched to identify relevant articles. The search covered the period from database inception to October 29, 2022. After excluding duplicates, studies were screened according to further mentioned inclusion and exclusion criteria. Following title screening, abstracts were screened in pairs of independent researchers (CG scored all abstracts; KVdB, VV and NM all did one third) before retrieving full text articles. Full text articles were reviewed by the first author.

### STUDY SEARCH TERMS

The following search string was used: ('medically unexplained symptom' or 'medically unexplained symptoms' or 'medically unexplained illness' or 'medically unexplained physical symptom' or 'medically unexplained physical symptoms' or 'somatoform disorder' or 'Somatoform Disorders' or 'Psychosomatic Medicine') and ('general practitioner' or 'general practitioners' or 'physicians; family' or 'physicians; primary care' or 'family doctor' or 'family physician' or 'family practitioner' or 'general physician' or 'general practice physician' or 'practitioner; general' or 'primary care doctor' or 'primary care physician' or 'primary care physicians').

### ELIGIBILITY CRITERIA

Articles were included when (1) they reported MUS; (2) concerned the general practice setting; (3) focused on therapy / treatment, and (4) if the full text was available in the English or Dutch language. Studies were excluded on basis of the following criteria: (1) participants were younger than 12 years; (2) there was no abstract available; (3) the involved treatment procedure was insufficiently explained; (4) the proposed treatment took more than 20 minutes, making it impossible to conduct in general practice; (5) the risk of bias was high according to the Cochrane risk of bias tool (methodologically unsound). The following study designs were excluded: case reports, small studies (<5 patients included), reviews, studies only of limited quality and research protocols.

## RESULTS

### RESULTS OF LITERATURE SEARCH

Figure 1 presents the flowchart of our search strategy and selection procedure. Initially, 1021 publications were retrieved. After removing duplicates (n=204), screening by title and abstract, and applying the in- and exclusion criteria, 33 articles remained. Table 1 (cfr. appendix) provides an overview of the 33 withheld papers. Eight articles were randomized controlled trials, seventeen articles were qualitative designs, five articles were survey designs, two articles were pretest-posttest designs, and one article was a cohort study. No important bias risk was defined using the Cochrane risk of bias tool. The withheld papers discussed the reattribution model, essential elements in treating MUS, somatic interventions, referral, writing sick leave and risk of iatrogenic somatisation.

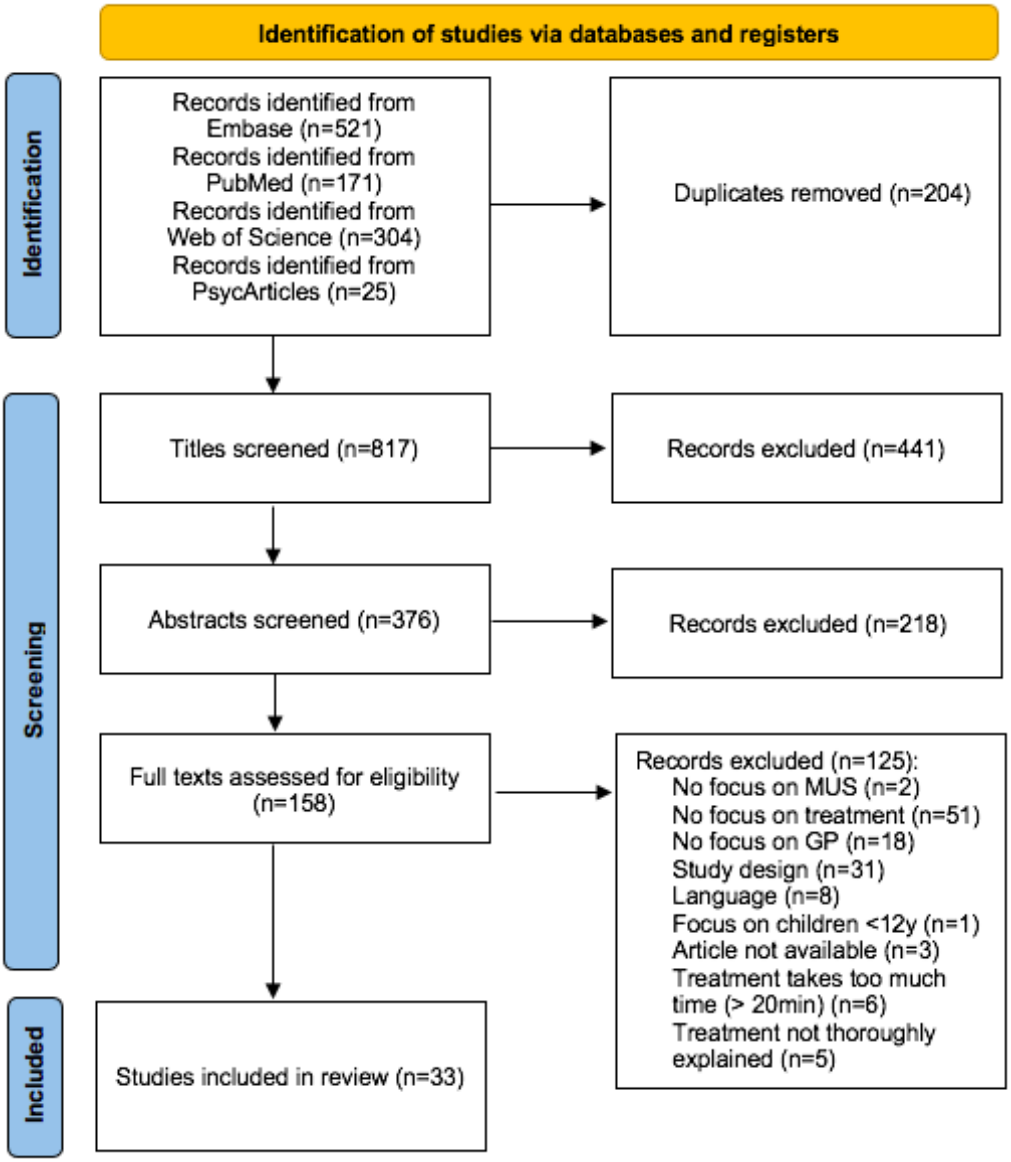



**Fig. 1.** PRISMA Flow Chart of the literature search and selection process.
MUS (Medical Unexplained Symptoms) & GP (General Practitioner).

## IS THE REATTRIBUTION MODEL EFFECTIVE?

Numerous papers researched the effectiveness of the reattribution model. Which to date is the most common approach to the management of MUS. The reattribution model is based on the assumption that MUS patients believe their illness is the result of a physical disease and is not affected by psychosocial factors. Three articles showed that practice-based training of doctors in reattribution changed doctor-patient communication without significantly improving outcome of patients with MUS [8–10]. Contrary to the widespread assumption that MUS patients don't recognise the role of emotional factors in their problems, most patients' explanations already incorporated psychosocial

factors [11]. Additionally, physical symptoms could be attributed to emotions when patients sense this link themselves, but this link tends to be denied when introduced by the GP [12]. In consultations where GPs summarized findings without adding their own interpretations, patients tended to reattribute more easily [13].

## WHICH ELEMENTS SHOULD BE ESSENTIAL IN TREATING MUS?

### *Conduct a thorough anamnesis*

Research indicates that taking a full history of the complaints is not sufficient. Doctors should enquire about patient's daily life and the emotional impact of their complaints [14]. Besides, knowledge of the patient's expectations is mandatory. The treatment demand should be clear in order to provide a tailored intervention [15–17].

### *Assess the patient's opinion about the illness*

By comprehending the patient's opinion about his complaints, it becomes easier to create a shared understanding of the problem [18,19]. Besides having a strictly symptomatic idiom, patients apply other explanations for their sufferings.

The symptomatic idiom: trying to find a cure for the physical symptoms. It is assumed that the suffering is caused by a physical disorder. However, no patient with MUS stops at this idiom, but develops parallel explanations and understandings.

The social idiom: explaining MUS as an illness caused by environmental factors, work situations and general social life constraints. Often stress is mentioned as the decisive element, that leads to an outbreak of symptoms.

The personal idiom: refers to understanding personality traits and psychology. This is in accordance with the evidence that patients with MUS articulate psychological clues as well.

The moral idiom: trying to add meaning and coherence to the illness at an existential level. The moral idiom is more prevalent among chronic MUS patients.

The explanations have been shown to be dependent on whom the illness story is told to. Furthermore, they change according to the illness phase [20].

### *Be mindful to the physical part as well*

It has been demonstrated in 4 studies that almost all patients expect the doctor to do a physical examination [16,18,19,21]. When the patient presents with a new symptom, the relevant organic

system needs to be examined [21]. Communicate that attention to psychosocial factors will not preclude vigilance to physical disease [22].

*Offer acknowledgement and validation*

Numerous research shows the importance of recognizing the reality of symptoms[16,18,22,23]. For example, by expressing 'Others are suffering too.', and 'I believe you; it is not your imagination.' [24]. MUS patients particularly value GPs who show awareness of the extent of their problems and show empathy for the frustrating experiences they had so far [11,21].

*Name the diagnosis*

One survey stresses the benefits of giving a name to the illness and explaining that it is a well-known disorder [22]. Explanatory models need to be provided for the linkage between psychosocial factors and physical symptoms [19,23]. No studies were found looking further into which terminology; naming the diagnosis, is preferred.

*Provide reassurance*

According to research the patient needs to be informed that there is no life risk [22]. Most MUS patients are worried that the symptoms would evolve into a serious disease [14]. Some patients even do not need an explanation of the cause of their symptoms, the simple reassurance from excluding some serious diagnosis is sufficient [16].

*Explain coping strategies*

Explain that treatment is coping, not curing [21]. Patients need guidance from their GP in how to self-manage their MUS [25]. The most important treatments modalities are coaching to a healthier lifestyle, graded activity, relaxation or body awareness exercises, distraction and finding balance between burden and capacity [17,25].

*Explain predisposing, precipitating and perpetuating factors*

Education about factors which affect the complaints is beneficial to make the connection with possible perpetuating factors [17]. Predisposing factors are chronic childhood medical illness, childhood maltreatment and low social support. Precipitating factors are change in routine, change in social support, psychiatric disorders and social and financial or professional stress. Perpetuating factors are decreased physical activity, weight gain, social isolation and decreased self- confidence [26]. Using symptom diaries is helpful to assess course and influence these factors and symptoms [21].

*Instill hope*

Hope has been proven to be important for MUS patients [22,25]. Providers need to give encouragement and emotional support. Examples of this include 'It takes time to get back to normalcy, one step at a time.', 'Keep busy and stay positive.', and 'You can live with it. You can still have a good, meaningful life.' [24].

*Ensure continued care*

Provide regularly scheduled visits, demonstrating commitment over time. GPs need to try to take control by being the 'coordinator' of diagnostic procedures and care [19,21,23]. Following research, patients stated that they prefer continuity, in the sense of seeing the same doctor every time, because they do not want to have to tell their story over and over again [16].

## WHICH EXPLANATORY MODELS ARE BEING PUT FORWARD TO DATE?

Patients find it difficult to accept the lack of a diagnosis and medical explanation for their symptoms. Having a clear diagnosis could alleviate the disbelief of their peers, would relieve them from feeling lonely and help them meet other patients who have the same condition [14,24]. There are conceptualizations of the immune system who suggest that the achievement of narrative coherence may be directly relevant to immune function and thus to physical health as well. The implication of this is that there is a feedback loop between the psychosocial suffering and the genesis of somatic symptoms [27]. Our search revealed two important explanatory models: the central sensitisation model and the hormonal hypothesis.

*The central sensitisation model*

The base of this model is an increased responsiveness of the central nervous system to normal input. Resulting in hypersensitivity to stimuli generating symptoms such as, for example pain, muscle tension or diarrhea. There are different ways to explain the model tailored to the patients' needs. One possible explanation is 'The tank and the light': the petrol light comes on inside your car, you fill up the tank and you drive away, but the light comes on again. Thus, there is no problem with the tank, but a problem with the wiring; you have to look higher up. GPs reported that the use of the central sensitisation model seemed to improve the understanding and acceptance of the symptoms and seemed to reduce their need for more diagnostic tests. Furthermore, patients seemed to become more motivated to accept appropriate therapy. It was considered important that other care providers spoke the same language to avoid confusing the patient [17,28].

*The hormonal hypothesis*

The base of this model is that patients' symptoms are the result of hormonal alterations caused by the perception of life events. Hereby attributing patients' symptoms to characteristics that are universally recognized as positive traits. 'These hormones affect more easily persons who are responsible, hard workers, sensitive. If you were the kind of person who was unworried about everything and everybody, it is highly unlikely that these hormones would have affected you.' The model approaches sensitive topics in patients' experiences indirectly, encouraging patients to describe their feelings more open. This communication model was found to have a clinically relevant impact on body pain [29].

HOW ABOUT SOMATIC INTERVENTIONS?

Contrary to what has long been assumed, somatic intervention often does not result from the direct demands of the patient. Patients with MUS sought more emotional support than did others, but no more somatic interventions. Physical intervention is proposed more often by GPs than by patients [30,31]. Figure 2 displays factors influencing the probability of requesting somatic intervention. Somatic intervention was associated positively with the duration of consultation. Furthermore, it became more likely as patients complained about their symptoms. Inversely, facilitating patients' psychosocial talk and normalization of the symptoms has the potential to divert consultations about MUS from somatic interventions [32].

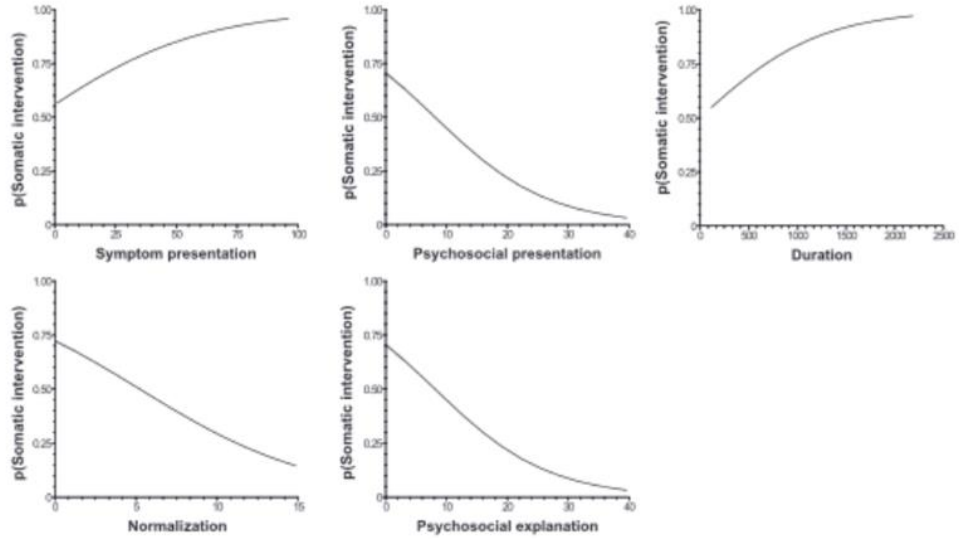



Fig. 2. Factors influencing the probability of requesting somatic intervention [32].

An important strategy to prevent new, unwarranted examinations is a comprehensive outline of the medical past. A list with all examinations and treatments conducted over the years could reveal how the endeavors had been going in circles, but also to useful clarifications [33].

HOW TO REFER?

When referring, an adequate letter of referral provided to the consulting healthcare provider is essential. The GP needs to focus the clinical questions and inform the other caregiver of the course of the disease and the manner of approach. In addition, preparing the patient for the consultation and reassuring that the GP will continue to be his doctor is important. Within this multidisciplinary approach, intensive communication between the different caregivers needs to be coordinated by the GP [15,21,23].

HOW ABOUT WRITING SICK LEAVE?

A systematic approach with full sickness leave until complete recovery, which is even not always realistic, is not helpful and may constitute a perpetuating factor of illness. Professional reintegration aims at preventing long-term unemployment by supporting patients in retaining their jobs and guiding them toward suitable employment by fast intervention. GPs play a crucial role to start this reintegration process as soon as possible and as such should discuss this item with the patient from the early stage onwards. Collaboration with occupational medicine specialists, advisory physicians in mutualities and employment agencies is primordial [15].

RISK OF IATROGENIC SOMATISATION?

Contrary to the widespread assumption that MUS patients do not recognise the role of emotional factors, most patients' explanations already incorporated psychosocial factors. One study showed that although patients provided unambiguous cues to emotional and social problems, these were neglected by most doctors. In responding to patients' cues for explanation by providing symptomatic treatments, investigations or referral doctors effectively somatize their patients. Likely their motivations point to multiple sources. These include feelings of inadequacy when faced with manifestations of psychological distress that they do not feel trained or equipped to manage, reluctance towards using stigmatising diagnoses and fear of overlooking a genuine physical disease [27]. These negative feelings of the practitioners are so important that most authors think that GPs treating somatizers should be offered emotional support [22].

# DISCUSSION

By conducting a systematic research, we retrieved 33 articles discussing what is known to date about the role of the GP in treating MUS. By juxtaposing the articles, some key findings became evident, such as: conducting a thorough anamnesis, assessing the patient's opinion, being mindful to the physical part, offering acknowledgement, naming the diagnosis, providing reassurance, explaining coping strategies, predisposing, precipitating and perpetuating factors, instilling hope and ensuring continued care. Many of these proposed treatment modalities are elementary in any GP consultation. Yet, they seem to be omitted more quickly during MUS consultations. This underlines the importance to be aware of the frequently experienced negative connotation of MUS.

Additionally, were able to disprove some important existing ideas. Previously the reattribution model was put forward as the standard in the treatment of MUS. However, this model assumes that the patient himself does not assume a possible psychological cause for MUS. That he strongly beliefs there is a somatic cause underlying the complaints and that he will not accept an alternative – psychological – explanation. Therefore, according to this model, the GP needs to carefully disprove the patient's ideas. However, our systematic research contradicts this theory, by showing that patients themselves often think psychological factors are at least in part adding to their complaints. Thus, the reattribution model needs to be reassessed critically. That the disease behaviour of MUS patients is partly driven by iatrogenic factors, is another important finding. This highlights the importance of proper guidelines for the GP in treating MUS. Finally, little research was found on naming the disease. Regarding the term MUS, it may be more important to focus on what we do know, rather than on what is unexplained so far. MUS is not the only disease of which the cause remains unknown up to now.

The strength of the evidence is limited by the study designs of the studies included in this review. Articles published after October 2022 were not included in the search. However, it is quite unique that an overview has been made of what we know up until now. Using a comprehensive methodology and including different research designs to give a complete picture as possible. Additionally, we can speak of a paradigm shift as the reattribution model is no longer put forward.

It is clear that further research is needed. In particular, surveys where the patient's opinion and vision on MUS is examined, making future research more patient-centered. For longer, many policies promote patient and public involvement in health research and healthcare provision [34]. Given the known problem of time constraints in GP practice, time-saving options should be considered.

## CONCLUSION

MUS is a disease with both psychological and physical implications. Hence the key role of the GP in treating and coordinating the illness. Given the importance of the consistency of a therapy for its success rate, we urgently need to put forward a unified treatment model where all healthcare providers speak the same, clear language.

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# APPENDIX

**Table 1: overview of the 33 withheld papers**

| Title | Authors – date -journal - country | Study design | Intervention | Number of patients, GPs or experts included | Outcome |
|---|---|---|---|---|---|
| Training general practitioners in the treatment of functional somatic symptoms: Effects on patient health in a cluster-randomized controlled trial (the Functional Illness in Primary Care Study) | Toft T, Rosendal M, Ørnbøl E, Olesen F, Frostholm L, Fink P – 2010 - Psychotherapy and Psychosomatics - Denmark | Randomized controlled trial | To test the effect of a training program, 'the extended reattribution and management model, for GPs in the treatment of MUS. By randomizing GPs to a training group or control group. Patients completed questionnaires at baseline and after 3, 12 and 24 months. | 38 GPs and 350 patients | GP training may accelerate improvement in physical functioning for patients with SD. However, the effect is small and may not be clinically significant. |
| What do patients choose to tell their doctors? qualitative analysis of potential barriers to reattributing medically unexplained symptoms | Peters S, Rogers A, Salmon P, Gask L, Dowrick C, Towey M, Clifford R, Morriss R – 2009 - Journal of General Internal Medicine - United Kingdom | Qualitative design | To examine patient experiences of GPs' attempts to reattribute MUS, in order to identify potential barriers to primary care management of MUS and improvement in outcome. By conducting semi-structured interviews with patients consulting with MUS whose GPs had been trained in reattribution and a secondary sample of patients of control GPs who didn't receive training. | 23 GPs and 23 patients | Improving GP explanation of unexplained symptoms is insufficient to reduce patients' concerns. Potential barriers include the complexity of patients' problems and patients' judgements about how to manage their presentation of this complexity. Many did not trust doctors with discussion of emotional aspects of their problems and chose not to present them. |
| A multidisciplinary network for the care of abnormal fatigue and chronic fatigue syndrome in the provinces of East and West Flanders in Belgium | Tobback E, Mariman A, Heytens S, Declercq T, Bouwen A, Spooren D, Snoeck P, Van Dessel K, D'Hooghe S, Rimbaut S, Vogelaers D - 2014 - Acta Clinica Belgica - Belgium | Qualitative design | The University Hospital Ghent took the initiative to create a new path of stepped care for abnormal fatigue, in which GPs play a central role. They aim to provide a framework for a uniform, adequate and patient-oriented approach to prevent chronic illness and increase the likelihood of effective improvement with real and realistic perspectives on partial and/or adapted socio- | 53 experts | A new and innovative care model, in which general practitioners play a central role, emphasizes the importance of early recognition of the patient 'at risk', correct diagnosis and timely referral. Cognitive behavioural therapy and graded exposure/exercise therapy are the evidence based main components of therapy in the latter. A biopsychosocial model underlies the |

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| | | | professional re-integration. | | proposed path of care. |
| A qualitative study of adolescents with medically unexplained symptoms and their parents. Part 2: How is healthcare perceived? | Moulin V, Akre C, Rodondi P, Ambresin A, Suris J – 2015 - Journal of Adolescence - Switzerland | Qualitative design | This study sought to understand the experiences with, and perceptions of, the healthcare of adolescents who have MUS and their parents by conducting six focus groups and two individual interviews. | 10 patients and 16 parents | Most noticeable was the need for good communication between the adolescents, their parents and the clinicians. Also emphasized is the importance of needing a label for the symptoms; discussing functional symptoms is probably more acceptable to patients than using the term 'MUS'. Clinicians should make sure to thoroughly discuss the (negative) results of the investigations. Also important is to assure the patient that the condition is being taken seriously by performing a careful history taking, a detailed physical examination and explaining that their complaints aren't imaginary, but that their mental status can exacerbate and perpetuate symptoms. |
| A randomized controlled clinical trial of a psychosocial and communication intervention carried out by GPs for patients with medically unexplained symptoms | Aiarzaguena J, Grandes G, Gaminde I, Salazar A, Sánchez A, Ariño J – 2007 - Psychological Medicine - Spain | Randomized controlled trial | Thirty-nine GPs were divided into two groups. GPs in the intervention group treated somatic patients according to specific communication techniques; focused on offering a physical explanation – release of hormones – and approaching sensitive topics in the patient's experience indirectly. Control GPs used the standard Goldberg reattribution technique. All patients had six programmed 30-min consultations. | 39 GPs and 156 patients | Patients in both groups improved in all dimensions of the SF-36, but the magnitude of improvements in the intervention group were higher than in the active control group. The difference was especially relevant in the scale of bodily pain. |
| A taxonomy of explanations in a general practitioner clinic for patients with persistent "medically unexplained" physical symptoms | Morton L, Elliott A, Cleland J, Deary J, Burton C - 2017 - Patient Education and Counseling - United Kingdom | Qualitative design | GPs' explanations from two studies, performing a consultation intervention for patients with multiple, often "medically-unexplained," physical symptoms, were analyzed to develop a taxonomy of explanations for patients with persistent physical symptoms. | 5 GPs and 38 patients | The taxonomy comprised 3 explanation types (rational adaptive, automatic adaptive, complex) describing the overall structure. And 3 explanation components (facts, causes, mechanisms) describing the content of the explanation. The taxonomy is suitable for developing prototype explanatory scripts in both training and research settings. |

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| Assessment of a pilot course on the management of somatization disorder for family doctors | García-Campayo J, Claraco L, Sanz-Carrillo C, Arévalo E, Monton C - 2002 – General Hospital Psychiatry - Spain | Randomized controlled trial | A 20-h practical course was designed; using role-playing and video recording with standardized patients and focusing on micro-skills recommended by the literature on the subject. Assessment of the efficacy of the course is made by evaluation of baseline and post course video recordings by researchers unaware of the order of the interviews. | 14 GPs and 2 raters, number of patients not mentioned | The comparison of baseline and post course assessments demonstrated a significant improvement in giving a name to the illness, explaining the psychological and biological basis of the disease, and emphasizing stress reduction. But there was no change on explaining that SD is a well-known disorder, empowering the patient, not blaming the patient for his or her illness and instilling hope. |
| Integrated GP care for patients with persistent physical symptoms: Feasibility cluster randomized trial | Patel M, James K, Moss-Morris R, Ashworth M, Husain M, Hotopf M, David A, McCrone P, Landau S, Chalder T, Ferreira N, Watts K, Turner R, Carnemolla A, Robertson J, Patel S, Frank P, Fisher-Smith P, Childs A, Mosweu I, Willis C, Simiao F - 2020 - BMC Family Practice - United Kingdom | Randomized controlled trial | To assess the acceptability of an 'integrated GP care' approach, which consists of offering self-help materials to patients with MUS and training their GPs on how to utilize cognitive behavioral skills.<br><br>GP practices were randomly allocated to 'integrated GP care plus treatment as usual' or 'treatment as usual'. | 50 GPs and 161 patients | Scores in GP knowledge and confidence increased post-training. Retention rates of participants up to 24weeks were high.<br><br>However estimated effect sizes on potential clinical outcomes were small. |
| Cluster randomized controlled trial of training practices in reattribution for medically unexplained symptoms | Morriss R, Dowrick C, Salmon P, Peters S, Dunn G, Rogers A, Lewis B, Charles-Jones H, Hogg J, Clifford R, Rigby C, Gask L – 2007 - British Journal of Psychiatry - United Kingdom | Randomized controlled trial | GPs were divided into two groups receiving 6 hours of reattribution training vs treatment as usual. Reattribution is a consultation model which aims to provide a psychological explanation to patients with somatised mental disorder. Patients with medically unexplained symptoms of 3 months' duration or longer were interviewed 1 month after the consultation and completed a postal questionnaire 3 months afterwards. | 74 GPs and 141 patients | There was no evidence of improvement in patient outcome or service use after reattribution training. |
| Community physicians' strategies for patients with medically unexplained symptoms | Anderson M, Hartz A, Nordin T, Rosenbaum M, Noyes R, James P, Ely J, Agarwal N, Anderson S – 2008 - Family Medicine - Iowa | Survey design | GPs and patients who have MUS were interviewed separately about management strategies. Thematic analyses were used to categorize these strategies. | 36 doctors (32 GPs) and 49 patients | Strategies considered effective by physicians and patients included medical treatment, exploring causes of symptoms with tests and referrals, attentive listening, validating complaints, demonstrating commitment over time (eg, assuring patients of continued care, |

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| | | | | | allowing extended office visits, and returning phone calls), providing clear explanations and explanatory models for the linkage between psychosocial factors and physical symptoms. |
| The somatising effect of clinical consultation: What patients and doctors say and do not say when patients present medically unexplained physical symptoms. | Ring A, Dowrick. D, Humphris G, Davies J, Salmon P – 2005 - Social Science and Medicine - United Kingdom | Qualitative design | By observing what patients and doctors say in consultation, hypotheses arising from recent qualitative evidence were tested. | 50 GPs and 420 patients | As predicted, physical intervention was proposed more often by GPS than patients and almost all patients provided cues concerning psychosocial difficulties or their need for explanation. Although, contrary to prediction, most GPs did provide explanations other than physical disease. |
| Development and feasibility of a modified reattribution model for somatising patients, applied by their own general practitioners | Blankenstein A, Van Der Horst H, Schilte A, De Vries D, Zaat J, André Knottnerus J, Van Eijk J, De Haan M – 2002 - Patient Education and Counseling - The Netherlands | Pretest-posttest design | The feasibility in general practice and the GPs' performance of a modified reattribution model was studied by randomly dividing practices to provide reattribution versus usual GP care. Reattribution care was learned during a 20-h practical course. Performance of these skills in daily practice was measured during 1 year by using registration forms on which the GPs noted which reattribution stages had been performed, and by audio-taped consultations. GPs were also interviewed 2 years after the start of the course. | 10 GPS and 51 patients | The modified reattribution model offers a feasible approach to the broad spectrum of somatization seen in general practice; only the modification 'dealing with illness worry' showed limited feasibility. |
| What do general practice patients want when they present medically unexplained symptoms, and why do their doctors feel pressurized? | Salmon P, Ring A, Dowrick C, Humphris G – 2005 - Journal of Psychosomatic Research - United Kingdom | Qualitative design | GPs participated in a cross-sectional comparison of case-matched groups. MUS patients were matched for doctor and time of attendance with patients attending with explained symptoms. Patients self-reported the extent to which they wanted somatic intervention, emotional support, explanation and reassurance. Doctors rated their perception of patients' influence on the consultation. | 35 GPs and 714 patients | Patients with MUS sought more emotional support than did others, but no more explanation and reassurance or somatic intervention. A minority of doctors experienced them as exerting more influence than others. The experience of patient influence was related to the patients' desire for support. |

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| The treatment of somatization: Evaluation of a teaching package with general practice trainees | Gask L, Goldberg D, Porter R, Creed F – 1989 - Journal of Psychosomatic Research - United Kingdom | Pretest-posttest design | Examining if a reattribution teaching package increases the frequency with which these skills were used in the group of GP trainees. Two videotaped interviews were made by each trainee; the first was prior to their attendance at the first lecture and the second at the end of the course. On each occasion the trainee interviewed a patient in a role-played general practice consultation. | 20 GPs | Evaluation of the teaching package reveals that the skills can be effectively learned. |
| Evaluation of general practitioners' training: How to manage patients with unexplained physical symptoms | Rief W, Martin A, Rauh E, Zech T, Bender A – 2006 – Psychosomatics - Germany | Randomized controlled trial | To assess whether a 1 day training session for GPs on managing patients with unexplained physical symptoms would be acceptable to GPs and lead to improvements in patient care. Outcome measures were healthcare utilization (number of doctor visits) 6 months before and 6 months after the index visit to the GP and somatization severity, depression, and hypochondriacal fears at the index visit to the GP's office and 6 months later. | 26 GPs and 295 patients | Training GPs led to significant reductions in healthcare utilization; Differences in depression, somatization, and hypochondriacal fears could not be attributed to the GP training. GPs rated the training as being highly relevant for their everyday practices. |
| Explaining medically unexplained symptoms: Somatizing patients' responses in primary care | Aiarzaguena J, Gaminde I, Clemente I, Garrido E – 2013 - Patient Education and Counseling - Spain | Qualitative design | Examining the conversation between GPs and patients in a communication intervention (DEPENAS). The DEPENAS intervention consisted of six or more 30-minute encounters. GPs received a 4-hour communication training to obtain the patient's permission to conduct a psychosocial exploration by discussing with patients the possibility that symptoms were the result of a hormonal alteration caused by the perception of life events and experiences. | 18 GPs and 26 patients | Symptom explanations (SEs) allowed physicians to obtain patients' permission to conduct a psychosocial exploration. Often, they were vague, tentative, and uncertain, and elicited varying degrees of patient agreement. Physicians may start SEs by associating MUS (but not directly the patients' own symptoms) to a hormonal imbalance, and by relating them to universally recognizable emotions and familiar situations. Excessive emphasis on long and complex SEs and on seeking extended verbalizations of patient agreement may be counterproductive and antagonize the patient. |
| Helpful strategies for GPS seeing patients with medically unexplained physical symptoms: A focus group study | Aamland A, Fosse A, Ree E, Abildsnes E, Malterud K – 2017 - British Journal of General Practice - Norway | Qualitative design | Three focus group interviews with a purposive sample of experienced GPs were held to explore GPs' experiences of the strategies perceived as helpful when seeing patients with MUPS. | 24 GPs | Important strategies included a thorough review of the patient's story and a thorough clinical examination, along with mutual interpretation and negotiations of symptoms, which were intended to show the patient that |

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| | | | | | the GP knew their story in detail. |
| Helpful ways providers can communicate about persistent medically unexplained physical symptoms | Anastasides N, Chiusano C, Gonzalez C, Graff F, Litke D, McDonald E, Presnall-Shvorin J, Sullivan N, Quigley K, Pigeon W, Helmer D, Santos S, McAndrew L – 2019 - BMC Family Practice | Survey design | We sought to determine what veterans with Gulf War Illness (GWI) perceive as the most helpful communication from their providers. Two hundred and-ten veterans with GWI were asked, in a written questionnaire, what was the most useful thing a medical provider had told them about their GWI. Responses were coded into three categories with 10 codes. | 168 patients | This study suggests that most patients are able to identify something helpful a provider has said, particularly acknowledgement and validation and specific treatment recommendations. |
| Identifying treatment modalities for a multidisciplinary and blended care intervention for patients with moderate medically unexplained physical symptoms: Qualitative study among professionals | Van Westrienen P, Pisters E, Gerrits M, Veenhof M, De Wit C, Niek J – 2019 - Journal of Medical Internet Research - The Netherlands | Qualitative design | To identify treatment modalities based on expert opinions for the development of a multidisciplinary and blended intervention for patients with moderate MUPS to prevent chronicity. Two focus groups with 8 and 6 experts (general practitioners, physical therapists, psychologists, and mental health nurses) were carried out. | 14 experts (general practitioners, physical therapists, psychologists, and mental health nurses) | From professional expert perspectives, 8 themes should be included in a multidisciplinary and blended intervention to prevent chronicity: coaching to a healthier lifestyle, education regarding psychosocial factors, therapeutic neuroscience education, multidisciplinary intake, multidisciplinary cooperation and coordination, relaxation or body awareness exercises, clear communication by professionals to the patient, and graded activity. |
| Illness explanations among patients with medically unexplained symptoms: Different idioms for different contexts | Risør, Mette Bech – 2009 – Health - Denmark | Qualitative design | To analyse the social construction of illness explanations among patients with MUS and to illustrate the use of explanatory idioms as being dependent on space, time and setting by performing semi-structured, qualitative interviews with nine patients during a period of 1.5 years. Ranging from one to five interviews with each informant; in total 22 interviews. | 9 patients | Patients with MUS employ at least four different explanatory idioms: the symptomatic idiom, the personal idiom, the social idiom and the moral idiom. The symptomatic idiom is mainly used at clinical consultations in primary care. A discrepancy is found between the general practitioners' notion of the biopsychosocial model and the patients' everyday life idioms. |
| Medically unexplained symptoms: The person, the symptoms and the dialogue | Houwen J, Lucassen P, Stappers P, Assendelft P, van Dulmen P, olde Hartman S, Tim C – 2017 - Family Practice - The Netherlands | Qualitative design | The aim of this study is to explore what patients with MUS expect from their GP by video-recording everyday consultations and asking the GPs immediately after the consultation whether MUS were presented. The patients in these MUS consultations were asked to reflect on the consultation | 20 GPs and 43 patients | All MUS patients said that they wanted to be taken seriously. This feeling is enhanced when the GP: pays empathic attention to them as individuals, (meaning that the GP knows their personal circumstances and has an open and empathic approach), ensures a good conversation by treating the patient as an |

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| | | | during a semi-structured interview while watching a recording of their own MUS consultation. | | equal partner and is attentive to their symptoms by exploring these symptoms in depth and by acting on them. |
| Patients' descriptions of the relation between physical symptoms and negative emotions: A qualitative analysis of primary care consultations | Bekhuis E, Gol J, Rosmalen J, Burton C – 2020 - British Journal of General Practice - United Kingdom | Qualitative design | To explore how patients with persistent symptoms describe their negative emotions in relation to their physical symptoms in primary care consultations, in order to help GPs recognise the patient's starting points in such discussions, by analysing 47 audiorecorded extended primary care consultations with patients with persistent physical symptoms. | 15 patients | All patients talked spontaneously about their negative emotions. Three main categories of relations between these emotions and physical symptoms were identified: separated, connected and inseparable. Some patients showed a transition between categories during the intervention. Physical symptoms can be attributed to emotions when patients introduce this link themselves, but this link tends to be denied when introduced by the GP. |
| Pragmatics of explanation: Creative accountability in the care of 'medically unexplained symptoms' | Greco M – 2017 - Sociological Review - United Kingdom | Qualitative design | The article explores recent accounts of the role of medicine and doctors in the co-production of somatization, and contemporary efforts to address this iatrogenic dimension by developing and testing clinically effective explanations. In this reconfigured discursive space, the problem of explanation is recast not in terms of the need for a representational, objective truth on the basis of which treatment of one kind or another should follow, but rather in terms of a pragmatic wager whose truth lies in the quality of its clinical effects. | | The article highlights the constraints that different healthcare systems – or policy environments, broadly conceived – impose on citizens' ability to re-imagine themselves in ways that might facilitate their potential for growth, transformation and self-care. |
| Primary care consultations about medically unexplained symptoms: How do patients indicate what they want? | Salmon P, Ring A, Humphris G, Davies J, Dowrick C – 2009 - Journal of General Internal Medicine - United Kingdom | Survey design | To test predictions that what patients tell GPs when they consult about MUS is related transparently to their desire for emotional support, symptom explanation and somatic intervention by using, before consultation, a self-report questionnaire measuring patients' desire for: emotional support, explanation and reassurance, and physical investigation and treatment. The consultations were audio-recorded. Multilevel regression analysis tested relationships between what | 33 GPs and 326 patients | In general, patients with medically unexplained symptoms provide many cues to their desire for emotional support. They are more indirect or guarded in communicating their desire for explanation and somatic intervention. Patients wanting emotional support spoke more about psychosocial problems, including psychosocial causes of symptoms and their need for psychosocial help. Patients wanting explanation and reassurance suggested more physical explanations, including diseases. Patients' wish for somatic intervention was |

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| | | | patients sought and what they said. | | associated only with their talk about details of such interventions and not with their requests for them. |
| Primary care consultations about medically unexplained symptoms: Patient presentations and doctor responses that influence the probability of somatic intervention | Salmon P, Humphris G, Ring A, Davies J, Dowrick F – 2007 - Psychosomatic Medicine - United Kingdom | Qualitative design | To test the predictions that somatic intervention becomes more likely when doctors provide simple reassurance rather than detailed symptom explanations and do not help patients discuss psychosocial problems and when patients try to engage doctors by extending their symptom presentation. Consultations with patients presenting MUS were audio-recorded, transcribed, and coded. | 420 patients | Somatic intervention did not result from the demands of patients. Instead, it became more likely as patients complained about their symptoms. Facilitating patients' psychosocial talk has the potential to divert consultations about medically unexplained symptoms from somatic interventions. |
| Psychosocial interventions for somatizing patients by the general practitioner: A randomized controlled trial | Larisch A, Schweickhardt A, Wirsching M, Fritzsche K – 2004 - Journal of Psychosomatic Research - Germany | Randomized controlled trial | To compare the effects of psychosocial interventions based on the modified reattribution model for MUS patients in general practice (intervention group) with those of nonspecific psychosocial primary care alone (control group). Primary outcome measures were somatoform symptoms and quality of life. | 42 GPs and 172 patients | Compared with nonspecific psychosocial primary care, the effects of reattribution techniques were small and limited to physical symptoms. |
| Somatoform disorder in primary care: Course and the need for cognitive-behavioral treatment | Arnold, Ingrid A, De Waal M, Eekhof J,Van Hemert A - 2006- Psychosomatics - The Netherlands | Cohort study | To establish the course of somatoform disorders and their need for treatment in primary care by analysing data of 1046 attendees in family practices of which 99 patients completed follow-up questionnaires 6 months after baseline with the GP. | 99 patients | Over a 6-month follow-up, the prevalence of somatoform disorder decreased from 16.1% to 12.3%. After assessment of eligibility, about 5% of patients demonstrated a need for treatment. |
| The uncertain consultation and patient satisfaction: The impact of patients' illness perceptions and a randomized controlled trial on the training of physicians' communication skills | Frostholm L, Fink P, Oernboel E, Christensen K, Toft T, Olesen F, Weinman J – 2005 - Psychosomatic Medicine - Denmark | Randomized controlled trial | To identify predictors of patient satisfaction among a range of patient and practitioner variables. By on the one hand conducting a randomized controlled study (GP educational program vs no educational program) and on the other hand asking patients to fill in questionnaires before and after the consultation. The physicians completed a questionnaire for each patient on diagnostics | 38 GPs and 1512 patients | The training of general practitioners' communication skills improved patient satisfaction. Illness perceptions predict satisfaction; in particular, patients feeling uncertain and negatively emotionally involved in their health problem were more inclined to being dissatisfied with the consultation. |

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| | | | and prognostics as well. | | |
| Barriers and facilitators to the implementation of interventions for medically unexplained symptoms in primary care: A modified Delphi study | Hanssen D, Ras A, Rosmalen J – 2021 - Journal of Psychosomatic Research | Survey design | A three-round modified Delphi study was performed, using the input of 58 experts that are (in)directly involved in the care for patients with MUS. Formulating unique barriers and facilitators to the implementation of interventions for MUS and ranking them on importance. | 58 experts | We identified 42 unique barriers and 57 unique facilitators to the implementation of MUS-interventions. The three highest ranked barriers were all related to time, i.e. too little time for treating complex MUS-patients. The most important facilitator was a positive attitude towards MUS-patients. |
| Experiences of general practitioners explaining central sensitization to patients with persistent physical symptoms | den Boer C, Terluin B, van der Wouden J, Blankenstein A, van der Horst E – 2022 - BMJ open - the Netherlands | Qualitative design | We explored how GPs used the Central Sensitisation model with patients with MUS. By instructing 33 GPs on how to explain Central Sensitisation to patients with MUS. After 0.5–1.5 years of using the model, 26 GPs participated in focus groups and interviews to report and discuss their experiences with the model. | 33 GPs | GPs reported that they were able to provide explanations with the Central Sensitisation model to their patients with MUS. They regarded the model as evidence-based, credible and giving recognition to the patient, but explaining it difficult and time-consuming. |
| Development of a blended communication training program for managing medically unexplained symptoms in primary care using the intervention mapping approach | Houwen J, de Bont O, Lucassen P, Rosmalen J, Stappers H, Hartman O, van Dulmen S - 2022 - Patient Education and Counseling - the Netherlands | Qualitative design | We used the intervention mapping framework to develop a training program. Next, we implemented and evaluated the program with 46 residents by assessing their self-efficacy and by exploring their experiences with the training. | 46 GP residents | We developed an evidence-based communication training program for the management of patients with MUS in primary care. |
| The careful assessment tool for managing patients with medically unexplained symptoms - The experience of Slovenian family medicine trainees: A qualitative study | Vojislav I, Špela M, Alem M – 2022 - Slovenian journal of public health - Slovenia | Survey design | A qualitative study using open survey questions focused on the experience of family medicine trainees in managing patients with MUS, using the “Careful Assessment” tool. The sample consisted of surveys from 184 family medicine trainees. These trainees analysed a total of 702 patients with MUS. | 184 GP residents and 702 patients | The study demonstrated that, in the view of Slovenian GP, the “Careful Assessment” tool has multi-purpose utility. |

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| Development of an eHealth programme for self-management of persistent physical symptoms: a qualitative study on user needs in general practice | Rask M, Jakobsen P, Clemensen J, Rosenda M, Frostholm L – 2021 - BMC Family Practice - Denmark | Qualitative design | This qualitative study was based on 20 semi-structured interviews mapping user needs regarding management of MUS in general practice. | 6 GPs and 14 patients | Several unmet needs emerged. First, we identified a need to consider MUS early in the illness trajectory by taking a bio-psycho-social approach. Second, both patients and GPs need better skills to manage uncertainty. Third, hope is important for the patients. Fourth, patients need guidance from their GP in how to self-manage their MUS. |