Gender and the language of pain in chronic and terminal illness: a corpus-based discourse analysis of patients' narratives

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Accepted Version

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To link to this article DOI: http://dx.doi.org/10.1016/j.socscimed.2018.09.002

Publisher: Elsevier

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Abstract

Drawing on the notion of gender as a socially constructed category performed inter alia through language, this study examines the ways in which women and man use language to do person-in-pain in real-life interactions about chronic and terminal illness. It is based on a secondary analysis of a large corpus of health and illness narratives collected by the Health Experiences Research Group at the University of Oxford and published by the DIPEx charity. Sixteen chronic and terminal conditions were identified in which men and women talked about physical pain and their narratives examined using the linguistic approach of a corpus-assisted discourse analysis. Our study shows that there are significant quantitative and qualitative differences in the ways in which women and men report pain pointing to the existence of distinctive feminine and masculine lexical repertoires of pain talk. While these repertoires conform to some of the dominant societal stereotypes surrounding masculinity and femininity, they also transgress those. Women refer to pain more frequently and have a wider lexical repertoire for pain reporting. They use more specific and factual references as well as cognitive and psychological words in their pain talk. In contrast, men tend to use fewer descriptors in general, most of which are highly emotive suggesting that they report pain when it becomes unbearable enduring it until this point. There is also a conspicuous absence of references to psychological processes in the male narratives and the focus is on pain killers. Understanding this nuanced role of gender in communicating pain can help health professionals respond effectively to people's talk about pain and develop more holistic practices in pain consultation, assessment and treatment leading potentially to the reduction of gender biases and inequalities in healthcare. (284 words)

1. Introduction

Pain is a common symptom and one of the primary reasons why people seek medical help (Walid et al. 2008). Given the pervasiveness of pain, since the 1970s pain has been recognised as the fifth vital sign alongside blood pressure, pulse, respiration and body temperature. New diagnostic pain assessment techniques have been developed including numeric rating scales (NRS), visual analogue scales (VAS) and verbal categorical rating scales (VRS) and are routinely included in patient assessment of acute and chronic pain (Breivik et al. 2008). Although pain scales have contributed to a recognition of pain experience in clinical practice, they are rather reductionist and their effectiveness in improving patient care seems to have been patchy (Walid et al., 2008). This is partially due to the rather narrow understanding of pain prevalent in medical sciences which relies on bodily signs and neglects the personal and social dimensions of the pain experience.

Research in social sciences has shown that pain is first and foremost the subjective experience of a person-in-pain (Bourke, 2014) and as such largely influenced by personal moods, attitudes and beliefs that are impossible to capture by a single number on a pain scale (Walid et al., 2008; Bendelow, 1993). As Bourke (2014) argues in her extensive historical analysis of pain experience, pain is a social action and communicative act mediated through language and influenced by social factors including gender, class, ethnicity, cultural expectations and beliefs. Thus, pain cannot be reduced to a sensory state to be explained by the medical profession: it needs to be understood at the nexus of affective, psychological, social and communicative practices of people-in-pain (Bendelow, 1993).

The role of language and patients' communicative styles has recently been recognised as critical for advancing our understanding of pain and for the development of a more holistic approach to pain consultation, assessment and treatment (Padfield and Zakrzewska, 2017; Walid et al., 2008). The large body of research on language in health communication has demonstrated the critical role which the *how* of communication plays in medical consultations and in the perception of illness (Hamilton and Chou, 2017). Yet, with a few exceptions (Semino, 2010; Halliday, 1998), research on the language of pain is sparse.

This study seeks to contribute to this slowly growing body of research by exploring communicative repertoires utilised by women and men to describe pain experience in the context of chronic and terminal illness. Following Otsuij and Pennycook (2010: 248), a communicative repertoire is understood as a more or less conventionalized gamut of lexico-grammatical resources that people use to convey meanings and to take action. We focus on patient's gender because gender is a central category that people use to make sense of social relationships and one of the major sources of social stereotyping. Research in social sciences has shown that gender and related social stereotypes exert a powerful influence on how health and illness are experienced by patients and treated by medical practitioners perpetuating gender biases and gender inequalities in medical practice (Modica et al., 2014; Lorber and Moore, 2002). The ways in which pain is treated seems no exception and here too gender stereotypes play a substantial role in reinforcing gender inequalities. Yet, we know little about the ways in which the gender of the person-in-pain impacts on the communicative repertoire through which pain experience is verbalised. This is relevant to examine because the kind of language that women and men in pain use is the only source of information about their pain experience having consequences for treatment. The present study turns therefore to the little understood role of language in the pain experience of women and men. In contrast to

3

previous research on pain and gender which is mostly based on experimental techniques and concerned with biological differences, we examine the ways in which women and men use language to do person-in-pain (Bourke, 2014) in real-life interactions about chronic and terminal illness.

The notion of gender which underpins this study is influenced by the poststructuralist and feminist understanding of gender, specifically the work by Butler (1990), and its application in discourse analytical research (e.g. Cameron, 2007). We therefore see gender as a socially constructed category dependent upon normative social and cultural conventions, and expectations that impose social roles and 'produce' gendered personae which might not necessarily correspond to biological sex. As Butler contends (1990), gender is not what people *have* as a fixed biological characteristic but rather *what* they *do*. In Butler's sense, gender is simultaneously a condition and an effect of identity formation and this formation happens mostly through observing, adopting and repeating behaviours widely associated with a gender (e.g. boys don't cry). Gender is then in Butler's (1990: 145) words a "a regulated process of repetition" which reinforces gendered rules and behaviours. Language, alongside other symbolic means, is an important tool which simultaneously enacts gender and through which this 'doing' of gender becomes manifest. Specially, we argue that repeated language use could be an index and a reflection of gendered practices. Therefore, through an analysis of patterns of language use in female and male narratives of chronic and terminal illness we are interested in establishing the extent to which pain is a gendered communicative practice highlighting repeated lexical 'tools' through which the pain experience is communicated by women and men.

This study is based on a secondary analysis of a large corpus of illness narratives collected by the Health Experiences Research Group at the University of Oxford and published by the

DIPEx charity on the HealthTalk website (healthtalk.org). Sixteen conditions were identified in which men and women talked about physical pain, and their narratives were examined. Whereas most previous research on health and illness narratives adopted qualitative research methodologies, our study is based on a combination of quantitative corpus-linguistic and qualitative discourse-analytical techniques. In doing so, it contributes to the nascent body of research that has advocated the use of corpus linguistics or a combination of corpus linguistics with discourse analysis to explore illness narratives (Gooberman-Hill et al., 2009; Seale and Charteris-Black, 2008; Harvey et al., 2007; Seale et al., 2006).

2. Pain, gender and language

The recognition of pain as the fifth vital sign has led to a better recognition of patients' pain experience, yet differences seem to prevail in the ways in which female and male pain complaints are treated with several studies reporting gender biases (Arslanian-Engoren, 2000; Hoffmann and Tarzian, 2001; Abuful et al., 2005). For example, a systematic review by Hoffmann and Tarzian (2001) of research concerned with pain and gender showed that women are more likely to report pain than men but their verbal reports are initially ignored. Research in medical sciences reports that medical practitioners tend to focus on biological signs and are likely to regard women's pain reports as exaggeration, a sign of anxiety or emotional distress. There is mounting evidence in medical sciences suggesting that women are routinely undertreated for their pain complaints; men are more likely to be immediately referred to specialists and receive appropriate pain treatment (Abuful et al., 2005). In addition, women are more often prescribed sedatives (Calderone, 1990) and are given proper pain treatment after they 'show' some biological causes. The one-dimensional understanding

of pain and the gender biases prevalent in medical sciences leads not only to misdiagnosis and prolonged pain experience, it also contributes to increased isolation and female mortality (Arslanian-Engoren, 2000).

Given that women seem to report pain more than men, several researchers in medical sciences have been interested in finding out whether there are inherent biological differences in how pain affects the two genders (e.g. Unruh, 1996; Pickering et al., 2002; Aloisi and Bonifazi, 2008). Using experimental techniques to test responses to pain and analgesics, some studies have shown that women and men respond differently to noxious stimuli with women reporting more pain and demonstrating greater sensitivity. Physiological differences, specifically reproductive hormones and the menstrual cycle have been regarded as major contributors to the different responses. Yet, the effect sizes of the differences observed are small and there are several validation issues with the experimental techniques used (Hurley and Adams, 2008). Thus, the evidence for a biological cause is not sufficient enough to explain the differences observed in clinical practice. For this reason, several scholars called for a shift in the understanding of pain and gender by exploring in more depth the social and cultural dimensions of the pain experience in women and men arguing that they could better explain the observed variance (Hurley and Adams, 2008; Greenspan et al., 2007; Hoffmann and Tarzian, 2001).

Several researchers in the field of sociology of health and illness have responded to this call showing that women's and men's experience of pain is much influenced by larger cultural scripts, gendered role expectations and different socialisation patterns (Bendelow, 1993, 2000; Paulson et al., 1998; Werner and Malterud, 2003; Bernardes et al., 2008). In doing so, they have widened the rather one-dimensional understanding of pain to include the socio-cultural context in which a person-in-pain operates. For example, Bendelow's (1993,

6

2000) research on the perceptions of pain in women and men shows how beliefs about pain are closely linked with gendered expectations of how both genders should cope with pain. Specifically, widely believed assumptions that female biology equips women with better coping strategies were linked with the perception of pain in women as a 'natural state', whereas pain in men was seen as something 'abnormal'. These 'natural' assumptions influence the socialisation process in that from early childhood, boys are often explicitly or implicitly taught to suppress pain experience because expressions of pain are seen as unmanly and feminine (Pollack, 1998). For both genders, such assumptions are double-edged: in the case of men, the association of masculinity with pain endurance can lead to identity threat and causes men to delay help seeking, putting their health at risk (Paulson et al., 1998). In the case of women, the perceived 'naturalness' of pain in the female body can result in disbelief and misdiagnosis (Werner and Malterud, 2003; Bernardes et al., 2008; Bendelow, 1993).

Subsequent research on pain and gender with a sociological focus confirmed the significance of gendered role expectations in pain experience. Robinson et al. (2003) showed how both male and female participants perceived men to be more tolerant of pain. What is especially worrying is that gendered perceptions of pain are prevalent amongst healthcare practitioners influencing assessments and treatments. The stereotype of a stoic and rational male leads healthcare providers to treat male pain complaints as more 'real' and 'serious', whereas female complaints might be ignored or attributed to emotional distress perpetuating the stereotype that women tend to be emotionally 'unbalanced' (Robinson et al., 2001). Interviewing women experiencing chronic pain, Werner and Malterud (2003) found that in encounters with medical practitioners, women find it harder to come across as a 'credible' patient and need to use a whole range of strategies to convince doctors that their pain is not in

the mind. Feminist scholars argue that the difficulties women encounter in medical settings are due to the institutionalisation of hegemonic masculinity within the biomedical model which promotes 'masculine' characteristics of rationality, endurance, stoicism, expertise and control, while expressions of emotions are largely disregarded. Institutionalised masculinity acts, then, as a benchmark against which male and female behaviour is interpreted and evaluated (Connell, 2002).

Research concerned with gender and pain has emphasised the significance of communication and language when studying pain experience. Pain is, after all, a subjective experience which needs language to be communicated (Padfield and Zakrzewska, 2017; Strong et al., 2009). Yet, the language of pain has thus far received little attention in both medical sociology and linguistic research despite the wealth of research on language in health communication (Hamilton and Chou, 2017). In linguistics, Halliday (1998) was the first to examine the array of lexico-grammatical resources that can be used to describe pain. His study revealed the complexity of expressing pain in a natural language like English, because pain can be simultaneously construed as a thing, a quality and various kinds of processes. Semino (2010) explored the language of pain and highlighted the inherent metaphoricity of pain expressions in general English.

The language of pain has been of some interest to medical sociologists. For example, Grace and MacBride-Stewart (2007) examined women's narratives of chronic pelvic pain. The researchers were particularly interested in comparing the language used by women with the language included in one of the most widely used pain assessment tools, the McGill Pain Questionnaire (MPQ). The analysis showed a considerable mismatch between the language used in women's narratives and the MPQ. Most of the descriptions used in the MPQ were absent from women's accounts. Pain severity was not described in the sensory terms used in

the MPQ, but by making references to how pain affected women's lives, work and relationships. The authors concluded that tools such as the MPQ are not sufficient to account for the multidimensionality of chronic pain experience and recommended that clinicians use narrative techniques alongside the established diagnostic tools.

Despite the significance of communication and language in the explanation and understanding of pain, there is a paucity of research on the language of pain and only two studies have looked specifically at pain, language and gender differences. Strong et al. (2009) prompted over 200 students from an Australian university to write about a past painful experience. A content-analysis of the written narratives revealed quantitative and qualitative differences between the genders. In general, female students used more words and tended to use more figurative and evocative language, while men were more likely to focus on facts and descriptions. Both genders used emotional language but conveyed different aspects: women focused more on crying, screaming and sadness, whereas in men's narratives there was a stronger theme of anger. Gooberman-Hill et al. (2009) too explored language of pain in the context of knee and hip pain in patients with osteoarthritis (OA). Using a corpus linguistic method of keywords, the authors identified considerable gender differences in the experience of OA with women focusing more on explanations and men using more factual terms. Both studies concluded that women and men use language differently and convey different aspects of pain experience. While Strong et al. (2009) argue that these differences cannot be explained by biological factors and are more likely to be a reflection of gendered expectations regarding pain behaviour, Gooberman-Hill et al. (2009) stress the importance of acknowledging gender differences in descriptions of OA and pain.

Despite the recognition of the socio-cultural and gendered dimension of pain, we still know little about the ways in which women and men verbalise pain and what kind of

communicative resources they use to do so. Although Strong et al. (2009) provided evidence for the existence of gender differences in language use when talking about pain, their research was based on the analysis of retrospective writing produced by a young, well-educated and arguably healthier sector of the population. Thus, their work does not represent the population at large and more importantly, it does not reflect the experience of those who have to deal with pain on an everyday basis. Similar to experimental studies, the real social context of pain experience was not well reflected. While Gooberman-Hill et al. (2009) study narratives produced in the context of a chronic condition, they do not specifically focus on the expressions of pain.

Our study seeks to contribute to a better understanding of pain experience as a gendered communicative practice by exploring verbal reports of pain produced by women and men of different ages in authentic contexts of real pain experience due to chronic or terminal illness. In contrast to previous small scale qualitative studies, our research is based on the analysis of a large corpus of narratives that are interrogated using both quantitative corpus-linguistic and qualitative discourse-analytical techniques. We are particularly interested in identifying whether there are distinctive communicative repertoires used by women and men to talk about physical pain and, if so, what kind of lexical resources women and men draw on to verbalise physical pain and how this language use can be a sign of gendered expectations of how to behave in pain. Because we are interested in typical and frequently used language items, this work necessitates the use of large language samples (as opposed to a few narratives). Studying larger data sets enables us to see patterns that are more distinctive to one group than the other. The next section describes the data collection process and a corpus linguistic methodology used to interrogate the data.

3. Data and Methodology

With permission, we undertook a secondary analysis of a large corpus of health and illness narratives collected by the Health Experiences Research Group at the University of Oxford (with approval from the South Central Research Ethics Committee) and published by the DIPEx charity on the HealthTalk website (www.healthtalk.org). Sixteen conditions were identified in which men and women talked about their physical pain including breast cancer, pancreatic cancer, Parkinson's disease, teenage arthritis, colorectal cancer, leukaemia, lymphoma, cervical cancer, ovarian cancer, lung cancer, gout, osteoporosis, penile cancer, rheumatoid arthritis, testicular cancer, and chronic pain. Subsequently, narratives produced by people affected by these conditions were extracted and divided into a female data set WCor (with 174 texts) and a male data set MCor (with 158 texts). We use the labels 'female' and 'male' because these were the labels used in the descriptions of participants' profiles. We therefore concluded that 'female' and 'male' were the genders with which the participants identified. Table 1 shows the number of words in each data set. There were more narratives produced by women available leading to the larger size of WCor.

TABLE 1 SOMEWHERE HERE

The data was subsequently analysed using the tools and methods of corpus linguistics and the software programme Sketch Engine (Kilgarriff et al., 2004). To our knowledge, no study used this methodology to explore pain expressions in authentic illness narratives.

Corpus linguistics is primarily concerned with studying language on the basis of large collections of real-life linguistic data normally known as corpora and interrogated using specialist linguistic software programmes such as Sketch Engine. The key analytical tools

used in corpus linguistics are frequency and collocational analysis. Frequency lists are useful in revealing the thematic focus in a given corpus and a comparison of frequencies of selected words across corpora can show how prominently a particular concept features in the given data set. Comparing the use of common words describing pain in illness narratives produced by women and men can show how often they refer to pain. A statistical significance test can subsequently indicate whether a difference is significant or not.

To understand what kind of meanings and associations people attached to pain, we need to move beyond single words and study their lexical surroundings. Here the concept of collocation becomes useful. The term collocation refers to the co-occurrence (association) of two or more words within a certain span, for example four words to the left and four to the right (–4 and +4) and established on the basis of a frequency cut-off point (e.g. minimum frequency of 3), and a measure of significance testing, for example Mutual Information (MI), or Log-Likelihood. Word associations retrieved in this way highlight recurrent lexical choices that are associated with a concept (in our case pain). These choices can point to salient or typical evaluations and attributions with the studied phenomenon that are otherwise difficult to detect in a small scale analysis of a single text or a few texts (Baker, 2006).

To shed light of preferred and typical associations with pain, we retrieved collocations of 'pain' using a -4 to +4 span, a minimum frequency cut-off point of 3 and Mutual Information (MI) as the measure of statistical association. We selected MI because, in contrast to the other widely used metric such as Loglikelihood, MI gives less emphasis to high frequency words such as grammatical words (and, of, it etc.) and 'prefers' lower frequency words that are normally content words including nouns, verbs, adjectives and adverbs (Hunston 2002). Since content words are more likely to reveal aspects of discourse, that is, activities and processes (verbs), attributions (nouns, adjectives), manners and moods (adverbs), MI was deemed more

suitable for this analysis. Retrieved collocations were subsequently categorised into thematic groups to reveal and compare the multiplicity of meanings attached to pain by women and men. To avoid idiosyncratic uses, we considered collocations that are content words (verbs, nouns, adjectives and adverbs), reached a minimum MI score of 3, which is deemed indicative of a strong association (Baker, 2006) and occurred in at least 3 narratives.

4. Results

To begin with, we were interested in identifying how frequently both genders mention pain in their illness narratives. Previous linguistic research identified the lexical item 'pain' as being the most frequent word used in English to describe pain followed by 'hurt' and 'ache' (Halliday, 1998). We compared the frequencies of these lexical items using their lemma forms (see Table 2). A lemma is the canonical word form belonging to one word class and comprising all the inflectional forms that exist. Thus, the lemma 'pain' includes the plural form 'pains' but not 'painful'.

TABLE 2 SOMEWHERE HERE

As Table 2 shows, the lemma 'pain' is the most frequently used lexical item to refer to pain and that women use 'pain' more frequently than men. The other forms are used rarely by both genders, though we recognise that the form 'ache' can also be part of compounds such as 'headache'. To see whether the differences of frequencies in WCor and MCor in the use of these lexical items are significant, we performed a statistical significant test using Log-likelihood (LL) and the conservative p value of 0.01 as the minimum significance threshold. As shown in Table 2, the difference in the use of the lemma 'pain' is highly significant

13

suggesting that women do talk more about pain in the context of chronic or terminal illness than men. This would support previous qualitative research (Robinson et al., 2001; Bendelow, 2000). Because the lemma 'pain' was the most frequent lexical item used to talk about 'pain', it was subsequently considered in the collocational analysis.

TABLE 3 SOMEWHERE HERE

When looking at the 10 strongest collocations of 'pain' in the male narratives, the top result is 'excruciating'. What is first noticed about this collocate is the fact that it is a highly emotive adjective describing extreme pain or anguish (Oxford English Dictionary, OED, 2016). This could suggest that men report pain when it reaches a certain point, thereby trying to 'grin and bear it' until then. This is further supported by the fact that in four out of five instances of the collocation pair 'excruciating' and 'pain', 'excruciating' is further intensified by the use of the adverb 'absolutely' (see Extract 1 – 3 below).

Extracts 1 – 3

1. I was lying in bed and it was in the middle of the night and it was absolutely excruciating pain and I couldn't even put a sheet over my foot, it really was bad. At which point my wife called the doctor.

2. and the pain was absolutely again excruciating. No way could I get any relief from it at all.

3. this arm's absolutely giving me excruciating pain and I was really, I was really at a low and I just burst out crying. She, she called the GP.

What is interesting about these extracts is that men seem to respond with an emotional outburst ('I was really at a low and I just burst out crying') and report helplessness and vulnerability ('I couldn't even …', 'No way could I') when experiencing pain. In such situations, the social relationships play an important role in seeking medical help ('At which point my wife called the doctor', 'She, she called the GP'). The strong emotional lexis and references to vulnerability go very much against the stereotypical notion of masculine stoicism, which eschews expressions of emotions and prizes pain endurance and strength (Gough 2018). What is, however, concerning is that these strong expressions of pain come in moments in which the patients seem to be physically and mentally incapacitated and need to rely on someone else for help. This suggests that men are possibly more likely to report pain when it has an effect on their psychical strength, which could be quite late in the stage of an illness.

'Excruciating' does not occur at all in the female narratives and women use different adjectives when describing 'pain' such as 'sharp', 'boring' and 'intense', which express a lesser degree of intensity but cover a wider range of pain sensations. Women also draw on the influential gate control theory of pain developed by Melzack and Wall (1965) as suggested by the top collocate 'gate'. The gate control theory of pain introduces the idea of gates attached to the spinal cord: when the gates are open, the pain sensation travels straight to the brain and pain is experienced; when they are closed, patients may not experience pain or considerably less pain even if they suffered from a serious tissue damage. According to this theory, the closing and opening of the gates depends on psychological and external factors. Stress, tension and mental fixation on the pain keep the gates open, while relaxation, activity and mental distractions are common ways to close them thus potentially reducing the intensity of pain (NHS, 2016). In this way, the gate control theory foregrounds the role of psychological

factors in the treatment of pain and as such, it is used to inform cognitive-behavioural therapy (CBT). While there are benefits of gate control theory and CBT in chronic pain treatment (Ehde et al., 2014), it is interesting to note that this form of treatment occurs only in the female narratives and is conspicuously absent from the male stories (see Extracts 4 – 6 below). This might suggest that women are offered or seek this kind of psychological treatment more than men, but this would need to be verified by exploring the actual treatment practices.

Extracts 4 – 6

4. And what opens that <u>pain gate</u>, so if you're feeling more emotional, you're feeling less able to cope on a certain day then.

5. … and you're feeling particularly emotional, you're feeling down, then your pain gate is going to make it a level five.

6. one thing that sticks in my mind, they used the simple terminology of a pain gate in the lower back that opens and closes according to your psychological interpretation of pain I think.

To understand the multiplicity of meanings attached to pain by women and men, all content collocates were manually grouped into semantic domains. Grammatical collocations such as prepositions, conjunctions, auxiliary and modal verbs were removed. This resulted in 79 collocations in WCor and 40 in MCor. When classifying the collocations into content words and thematic domains, their use was carefully checked in context to establish the meanings of the words as some were ambiguous. For example, 'back' could be a noun describing the rear surface of the human body and an adverb of place. As a collocate of

'pain', 'back' referred in all instances to the human body and was classified as such. Table 4 shows the classification of the collocates found in WCor, while Table 5 presents those from MCor.

TABLE 4 SOMEWHERE HERE

TABLE 5 SOMEWHERE HERE

As can be seen, both women and men draw on similar semantic domains when describing the experience of pain. These include SENSORY QUALITIES of the experience in terms of pressure, spatial, temporal characteristics, affective descriptors and general evaluative terms. Yet, it is striking that the range of descriptors is not that great and certainly limited when comparing it to the verbal pain scales such as the MPQ. This suggests that people tend to refer to physical pain in simpler and mostly literal terms and the medically influenced terminology which the MPQ is based on does not reflect the everyday lay descriptions of pain. We also have a substantial number of collocations pointing to body parts and bodily functioning. It is, however, worth noting that most collocates are verbs referring to a wide range of actions including physical and emotional. Whereas previous research focused mostly on descriptors and qualities of pain treating pain as a static object (Strong et al., 2007), here we have evidence suggesting that in lay understanding pain is mostly a process to be dealt with.

Given that women seem to talk more about pain than men, it is not surprising to see more collocations of pain in WCor than in MCor suggesting that women have a larger communicative repertoire to talk about pain. The types of collocations in each domain vary between the two genders. Both genders use affective and emotive descriptors, but whereas

women refer to a range of pain sensations from 'boring' to 'terrible', men tend to use only three strong affective words 'excruciating', 'bad' and 'horrendous' that can be positioned at the severe end of the pain experience. This could again suggest that men talk about pain in a much more emotional way than women and do so when the pain seem to be unbearable. Extracts 7 – 8 illustrate again the male sense of vulnerability and incapacity when experiencing pain:

7. Why am I sat here and I can't do anything? Why can't I do this? It was mainly when I was in really bad pain and I just wanted to be out of pain and didn't want to be sat there and didn't want to be in pain.

8. But the moment I got up the pain was horrendous. Yes. Yes. Just putting my feet on the ground was horrendous. The pain. It really was painful.

Bradbury (2003) offers a summary of research on pain and gender and highlights that men are more likely to report pain by locating it to a specific body part, whereas women's descriptions of pain were more holistic. In our data, both women and men point to specific body parts when talking about pain: the range of body parts is greater in WCor and thus the notion that women are less specific cannot be upheld.

Collocations referring to physical and sensory actions or processes were used by both genders. Similarities can be observed in terms of sensory actions in that for both, the pain experience is associated with 'feeling' and/or 'suffering', which are emotional terms when comparing with 'having pain' (see Extracts 9 – 10).

Extracts 9 – 10

9. By the time that I felt this kind of pain that I suffered was really worse (MCor)

10. it was almost like this was a time set aside that you could say 'Yes, I suffer pain ' and

you could actually say it without feeling embarrassed. (WCor)

As far as physical actions are concerned, both genders use a range of verbal collocates, most

of which relate to the management of pain. However, it can be noted that women use a

greater variety of terms pointing to processes surrounding the pain experience ('manage',

'cope', 'stop', 'start', 'keep', 'help') suggesting possibly that they attend to different facets of

pain management. In fact, collocates such as 'manage', cope' and 'keep' occur in the vicinity

of 'pain' in WCor only and are absent from the collocate list in MCor (see Extracts 11 – 12).

Extracts 11 – 12

11. And I won't say I didn't have any pain that would be a complete lie, but it was, I was

able to manage my pain on the trip … So it's just moving on from goal to goal.

12. but it depends whether you know you're prepared to put up with that little bit of extra

pain to keep the movement and try [to] keep as normal as possible.

Instead, men seem to be concerned with easing pain mostly with the help of pain

medications. This is emphasised by the fact that (pain) 'killer' is the second strongest

association of 'pain' in MCor.

Another striking difference is the wide range of collocates from the domain of cognitive

activity in WCor. Items such as 'interpret', 'believe', 'learn', 'explain', 'realise', 'know' are

all types of cognitive verbs. Cognitive verbs refer to cognitive states and processes and

include verbs of attitude and desire (Biber et al., 1999). Most of the cognitive verbs in WCor

report state of awareness ('realise', 'know') or point to cognitive processes ('interpret',

19

'explain', 'learn'), which in turn could suggest that the experience of pain is for women a psychological or learning process. Extracts 13 – 14 from female narratives illustrate this point well:

13. Learning to recognise my pain, instead of feeling the pain when it was excruciating, learning to recognise the slight signal that was going to say you're going to be in pain in an hour or two's time, so slow down and that will decrease the pain.

14. And I do, I get again with, working with the Macmillan team, and some drugs there we seem to have, and learning to live with that pain.

The only cognitive verb in MCor is 'imagine' and it was found in three narratives in which the men reported on being taught a visualisation technique to cope better with pain. In all the instances, the verb 'imagine' is used in the infinitive and as something that the men were asked to do (see Extracts 15):

15. and we were invited to imagine our pain as a something, say for example a bright light or a glaring sun or something

The prevalence of cognitive verbs pointing to psychological processes in the female narratives and their relative absence in the vicinity of pain in the male stories studied here suggests that women are more likely to see pain in psychological terms. Consequently, they are more likely to perceive pain as something one has to cope and live with as opposed to something which could be reduced to a minimum with the help of medications. This is further reinforced by the second prominent category which occurs exclusively in WCor namely that

of PEOPLE including two medical actors: psychologists (10 times) and nurses (3 times). No social or medical actors appear in the vicinity of 'pain' in MCor. This suggests that when experiencing pain, women are more likely to disclose pain to medical staff and use medical services and therapies. When studying extracts with the collocation pairs 'psychologist' + 'pain' or 'nurse' + 'pain', it became apparent that women not only share the pain experience with healthcare professionals, they also treat pain management as a shared goal. Extracts 16 – 18 are illustrative examples from WCor, in which pain management is seen as a shared goal at times emphasised through the use of the first person pronoun in plural 'we':

16. and then I'd go back to my meeting, which was once a week, with the pain psychologist and we'd go through the diary

17. but I went, I see a pain psycho, pain psychologist and it really, I think it really helped me. We did, we went through different things

18. And once when I was in the hospital I talked to a nurse about the pain I was having and she suggested I got hold of the Macmillan nurse organisation who might have more idea of what to do.

The strong occurrence of 'psychologists' in the vicinity of pain in the female data is striking in that it could suggest that pain in women is likely to be seen as psychosomatic, which, in turn, might be due to some stereotypical and gendered understanding of women as 'unbalanced' (Bendelow, 2000; Robinson et al., 2001). In Extract 19 below, a patient experiencing pelvic pain reports how others may think that she is feeble-minded ('doolally') rather than having pain and how she was told by the psychologist to work on her emotions:

19. because if you feel that your pain's made worse by your emotions and things, sometimes you worry that people think you're doolally rather than there being something actually wrong. And that this is what the pain psychologist explained and how, you know, these sort of things may affect it and what you can do to counteract those.

There is no doubt that alternative treatments may bring some relief to patients but it is surprising to see that psychologists and 'talking cure' therapies or mind/ body approaches feature prominently around pain in the female data and are absent from the male data. For example, the word 'psychologist' does not occur in the male data at all. This might suggest different practices around pain treatment for both genders with women either being offered or seeking pluralistic healthcare options.

20. Discussion and Conclusions

Our study examined the language of pain in a large corpus of narratives produced in the context of chronic and terminal illness and used both quantitative and qualitative procedures of text analysis. Our results show that there is a significant difference in the frequency of the occurrence of 'pain' in WCor and MCor suggesting that in the studied narratives women referred more to pain than men. This difference has further lexical implications in that more diverse collocations were found in the female narratives showing that women have greater communicative repertoires to talk about pain. This difference could be explained by the fact that conditions involving pain, chronic pain in particular, are more prevalent in women (Greenspan et al., 2008; Blyth et al., 2001) and hence women might acquire a more diverse vocabulary to talk about pain. In comparison, men's repertoires in the studied narratives are

smaller and the most frequent associations restricted to strong emotional lexis, specifically words such as 'excruciating', 'horrendous' and 'bad', which are absent from the vicinity of 'pain' in the female narratives. When studying the text extracts in more detail, it became evident that pain expressions in the male narratives are often associated with a sense of vulnerability and helplessness. On the one hand, the pain experience transgresses the socially perpetuated notion of hegemonic masculinity (Connell, 2002) because it shows that men are emotional and vulnerable. On the other hand, men tend to emphasise pain experience when their physical or mental strength has gone, thus suggesting that they might 'bear and grin' it until then. Research on masculinity and health has shown that men rather experience discomfort and avoid help-seeking because they try to adhere to the hegemonic masculine ideal (e.g. Gough, 2018; Galdas, 2009). The way, how and when men talk about pain in the studied narratives suggests that the hegemonic masculine ideal is 'in operation' when disclosing pain experience.

Contrary to previous research (Bradbury, 2003), this study has shown that women's descriptions of pain are quite specific including exact references to many body parts. Women also use a wider range of collocates including many words referring to physical, cognitive and psychological processes around pain. This suggests that women cope and manage pain in multiple ways. It is noticeable that women refer to many psychological and cognitive facets of pain experience. Whether this language use is due to women seeking or receiving more psychological treatments than men cannot be established by this study, but the strong presence of cognitive and psychological words including references to psychologists seems to suggest that women might be more likely to engage with pluralistic healthcare choices (Kirby et al., 2015), whereas men might be given or prefer to rely on biomedical solutions. The

23

saliency of pain 'killer' as the second strongest association of 'pain' in the male narratives might be a reflection of this preference.

Our study has shown how a corpus linguistic analysis of the language surrounding the lemma 'pain' in a large corpus of illness narratives can confirm but also verify some of the previous findings regarding gendered differences and offers a more nuanced understanding of communicative repertoires used by women and men to talk about pain. Specifically, it shows that there exist distinctive feminine and masculine lexical repertoires reflecting differentiated approaches to pain. The differences are nuanced in that they do not strictly conform to the socially constructed notions of gender suggesting that pain experience is a terrain in which hegemonic gender roles, specifically the hegemonic masculine ideal are 'tested' and to an extent transgressed (cf. Butler, 1990). As the data shows, men do cry and express strong emotions – traits that are stereotypically associated with femininity, while women describe pain in factual, specific and rational terms – characteristics seen as typically masculine. Yet, the power of the hegemonic ideals surrounding masculinity and femininity is not completely dismantled and the way in which pain is linked with physical or mental incapacity in the male narratives is a case in point.

The findings add evidence to the existing body of research that emphasises the significance of gender as a key factor in understanding health and illness in general (Seale and Charteris-Black, 2008; Seale et al., 2006) and pain in particular (Kirby et al., 2015; Gooberman-Hill et al., 2009). Understanding the role of gender in communicating pain could not only assist health professionals to respond more effectively to people's talk about pain, it could also help reduce some of the gender biases that seem to prevail in healthcare affecting both women and men. First, given that most of the people in our dataset talked about pain in terms of feeling and suffering (although we acknowledge that this might not always be the

case) and used simple vocabulary, the adoption of complex pain assessment tools such as the MPQ seems problematic. Spontaneous verbal reports elicited from patients using simple narrative techniques could be of more therapeutic use. Health professionals need training in how to elicit and interpret accounts of pain, including acknowledging nuanced differences in communication styles. Second, health practitioners have been repeatedly shown to be led by gender stereotypes when assessing and treating patients (Bernardes et al., 2008; Abuful et al., 2005; Robins et al., 2003). Raising their awareness of such biases and demonstrating how illness and pain transgress stereotypic gendered expectations could instigate a more gender-free approach. A tool developed by Hammarström et al. (2016) to raise awareness of gender in pain rehabilitation offers a useful direction. Third, because reporting pain is a crucial aspect in diagnosis and treatment of any condition, men should be encouraged to disclose pain at lower thresholds and not necessarily when they feel incapacitated. This would ensure that illness signs are spotted early enough and adequate treatment is offered. This has broader implications in that it would require questioning the ideal of hegemonic masculinity, specifically the association of pain endurance with manly behaviour. Thus, not just healthcare professionals but parents and educators should encourage boys to disclose pain so that they acquire diverse ways of talking about it from an early age. This could potentially encourage men to engage with diverse healthcare choices. Fourth, the ways in which women talk about pain seem less expressive, which could partially explain why medical professionals might take female pain experience less seriously. Healthcare professionals need to acknowledge the female pain experience as 'real' rather than as an intrinsically biological female phenomenon even if women talk about 'boring' pains.

Our study uses a corpus linguistic approach to study expressions of pain in patients' narratives. This approach allows for exploring large amounts of data using quantitative and

qualitative techniques. Quantitative interrogations in the form of frequencies and collocations enable the researcher to identify salient thematic patterns that might not be noticeable when exploring a few narratives. These can be subsequently explored using a qualitative approach. Although a corpus-linguistic approach to discourse helps overcome several limitations of a more traditional discourse analysis (Baker, 2006), it is based on the analysis of individual lexical items and it does not consider how people negotiate meanings as they narrate their experience. Future qualitative research could, for example, explore in more depth what kind of meanings people attach to the words and expressions that they use to describe their pain experience and why they use certain expressions and not others. A corpus-based approach is also limited in that it does not account for the interactional dimension of patients' narratives and other symbolic forms of meanings such as non-verbal communication, which could provide more nuanced insights into the experience of pain (e.g. Padfield and Zakrzewska, 2016).

One of the major conceptual and analytical innovations in gender studies has been the notion of intersectionality. Born out of the feminist critique (Crenshaw, 1991), intersectionality offers profound insights into the ways in which multiple dimensions of social categories such as race, gender, class or age interact to form identities and 'structure' personal lived experience. Intersectionality has raised the awareness of the diversity within each social category suggesting that individual experience, including also the experience of health or illness, is influenced by the multiple membership to which each individual belongs, for example, as a young, white, middle-class, well-educated woman (cf. Seale and Charteris-Black, 2008). While gender is a powerful social category, it may yield different effects in terms of privilege and discrimination when combined with other social categories. Future research on pain narratives in social sciences would need to move beyond the binary

classification into women and men and study pain experience at the intersections of gender

with, for example, social class, race, ethnicity, education level and age.

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TABLES

Table 1: Corpus size

Corpus name	Corpus size: texts	Corpus size: words
MCor (Men)	158	123,845
WCor (Women)	174	146,194

Table 2: Frequencies of the lemmas 'pain', 'hurt' and 'ache' in WCor and MCor

Lemma	WCor		MCor		LL	p
	Raw Freq.	Normalised Freq.	Raw Freq.	Normalised Freq.		
pain	408	2,791	262	2,116	12.45	****
hurt	33	226	42	339	3.09	NS
ache	19	130	12	97	0.65	NS

Table 3: The 10 strongest collocations of 'pain' in WCor and MCor

WCor		MCor	
Collocation	*MI Score*	*Collocation*	*MI Score*
gate	9.122	excruciating	9.226
psychologist	8.952	(pain) killer	9.195
management	8.537	intensity	8.781
abdominal	8.385	management	8.195
sharp	8.385	chronic	8.058
boring	8.385	severe	7.665
chart	8.385	increase	7.533
intense	8.063	ease	7.495
relief	8.023	control	7.337
(pain) killer	7.893	relief	7.195

Table 4: WCor collocations of 'pain' categorised into semantic domains

Semantic Category	Collocations
Sensory qualities	sharp, stiffness, chronic, lower, top
Affective qualities	boring, terrible, awful, bad
Evaluative qualities	severe, intense, real, different
Body parts and functions	abdominal, elbow, pelvic, neck, shoulder, leg, hip, lump, knee, period, foot, chest, arm, back, side
Medical terminology of pain management	gate, (pain) killer, control, relief, management, level, chart, button, clinic
Physical actions	reduce, ease, cause, open (gate), manage, make, cope, give, stop, start, eat, keep, get, help, take, come, go

Mental actions	interpret, thought, believe, learn, explain, realise, see, know, want
Sensory actions	feeling, feel, suffer
Quantifiers	lot, most, many, much, little
Time references	sometimes, never
People	psychologist, nurse
Others	experience, ache, wall

Table 5: MCor collocations of 'pain' categorised into semantic domains

Semantic Category	**Collocations**
Sensory qualities	chronic, big, background
Affective qualities	excruciating, bad, horrendous
Evaluative qualities	intensity, severe
Intensifiers	absolutely
Body parts and functions	joint, muscle, toe, stomach, leg, foot, back, (groin) area
Medical terminology of pain management	(pain) killer, control, management, relief, level
Physical actions	increase, ease, cause, call, use, get, give
Mental actions	imagine, want
Sensory actions	feel, suffer
Quantifiers	lot, much, more
Time references	sometimes, night, minute
People	-
Others	bed