

**Do pain images used in pain consultations affect  
clinicians' and patients' nonverbal communication,  
and patient emotional disclosure?**

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Thesis declaration form**

I confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

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## Overview

This thesis investigates pain assessment and pain communication. Part one is a systematic review of clinical practice guidelines that address pain assessment among ethnic minorities where language differences exist. There was variability in the quality of included guidelines. The majority guideline recommendations were based on low quality evidence or expert consensus, and were vague and not behaviourally specific. Suggestions on how pain assessment scales can be adapted for use in this context, and how guidelines can be updated to increase their likelihood of implementation are considered.

Part two is a study examining the impact of using images depicting metaphors for pain on patients' and clinicians' nonverbal communication and patients' emotional disclosures. The video-taped consultations used were part of an existing dataset that had been used in published research by Padfield et al. (2010, 2015). Therefore, the current study builds on this research. Thirty-five video-taped chronic pain consultations (17 with images and 18 without) were rated on patients' and clinicians' affiliation and dominance behaviours and patients' emotional disclosures, using fixed-interval sampling. In the image group, behavioural correspondence between patients' and clinicians' positive affiliation behaviours was observed, and within-subjects, patients made more personal emotional disclosures when the images were used compared to when they were not used in the consultation. No main effect of group was found for patients' and clinicians' affiliation and dominance behaviours, and for how personal patients' emotional disclosures were over the course of the consultations. The impact of image use on the communication of pain is discussed and research implications are outlined.

Part three is a critical appraisal of the research process, which includes reflections on the role of loss in patients' lived experiences of chronic pain, empathy in the clinician-patient relationship, and the emotional impact of watching the consultations.

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## **Part 1: Literature Review**

Pain assessment among ethnic minorities where language differences exist:

A systematic review of clinical practice guidelines

## Abstract

**Aims:** To examine the quality and recommendations of existing clinical practice guidelines on conducting pain assessment among patients from ethnic minorities where language differences exist. **Method:** A systematic search of PsycINFO, MEDLINE, EMBASE and the Cochrane Library was conducted. A gray literature search of guideline databases and association websites was also conducted. Guideline quality was determined by risk of bias evaluations (using the Cochrane criteria) for items across four domains of the Appraisal of Guidelines for Research and Evaluation (AGREE II) instrument. Guideline screening, selection, and data extraction was conducted by the author. **Results:** Eight guidelines met the inclusion criteria. Across the AGREE II domains, the majority of guidelines had low risk of bias for Scope and Purpose, high risk of bias for not consulting with patients (Stakeholder Involvement) during guideline development and high risk of bias for guideline Applicability. For Rigour of Development, less than half of the guidelines had a low risk of bias for the majority of items on this domain. The majority of recommendations on pain assessment were based on low quality evidence or expert consensus, and were vague and not behaviourally specific. Commonly recommended pain assessment scales also had limitations. **Conclusions:** Pain assessment in this context is a serious area of neglect with significant implications for patient care. This is therefore a political issue as much as an important area for future research. There are good methods in the literature about how to translate scales and check their cultural appropriateness, which should be utilised within clinical, and research practice in relation to pain assessment.

## **Introduction**

Pain is commonly defined as “an unpleasant sensory and emotional experience, associated with actual or potential tissue damage, or described in terms of such damage” (Merskey, & Bogduk, 1994). As a subjective experience affecting around one in five adults worldwide (International Association for the Study of Pain (IASP), 2012), pain is considered a global health problem (Goldberg & McGee, 2011). Pain can affect anyone, irrespective of their gender, socioeconomic status, culture, race, or ethnicity (Björklund & Bergström, 2000). Despite this, research conducted in developed countries has consistently shown that people from ethnic minorities (who are considered a minority by the perspective of the host country) are more likely to experience sub-optimal pain assessment and subsequent treatment for pain (Goldberg & McGee, 2011), compared to their White counterparts (Burgess et al., 2013; Green et al., 2003; Tait & Chibnall, 2014). This is particularly concerning (Booker, Pasero & Herr, 2015) because accurate pain assessment is a necessary prerequisite to appropriate diagnosis and effective pain management (Roberts, Kent, Prys, & Lewis, 2003).

### **Definitions of culture, race, ethnicity, and ethnic minority**

Within research on ethnic minority disparities in pain, definitions of culture, race and ethnicity are often used interchangeably (Edwards, Fillingim & Keefe, 2001), despite their different meanings. ‘Culture’ is defined as a consistent pattern of behaviours, perceptions and beliefs that are shared among groups of people, and remain stable over time and across different contexts (Keefe et al., 2002); ‘race’ defines groups of people on the basis of their biological disposition (genetic factors) (Anderson et al., 2009; Edwards et al., 2001); and ‘ethnicity’ defines groups of people based on their culture, language, behaviours, beliefs, biological disposition, and past and present experiences (Anderson et al., 2009). The term ‘ethnic minority’ refers to a group of people from a particular ethnicity which differs from the ethnicity of the dominant

population. For the purpose of this review, the terms 'ethnicity'/'ethnic minority' will be used to denote people living in developed countries from non-White groups. This is because these terms are much broader and encompass race and culture in their definitions (Campbell & Edwards, 2012).

### **Ethnic minority disparities in pain**

Ethnic minority disparities relating to pain have been consistently documented in the literature across all pain types, including acute, chronic and disease-specific pain (Burgess et al., 2013; Green et al., 2003; Tait & Chibnall, 2014), and across a variety of healthcare settings (Anderson et al., 2009; Burgess et al., 2013; Green et al., 2003). In a study examining the pain experiences of cancer patients attending an outpatient clinic, compared to White cancer patients, Black African-Americans reported significantly higher pain intensity ratings and greater pain-related interference with daily functioning (Vallerand, Hasenau, Templin & Collins-Bohler, 2005). Similarly, compared to White chronic pain patients, Black African-Americans reported experiencing significantly less control over their pain and significantly more pain-related disability, such as depression and posttraumatic stress disorder, than their White counterparts (Green, Baker, Sato, Washington & Smith, 2003; Green, Baker, Smith, & Sato, 2003). This research also highlights the negative consequences pain can have on a person's mental health.

Documented explanations for ethnic minority disparities in pain involve barriers on the part of patients and of clinicians (Ingham & Folley, 1998). Patient factors include beliefs about pain, and the underreporting of pain to clinicians (e.g. Booker et al., 2015). For instance, although it is common for cancer patients to underreport pain due to fearing that it is a sign of disease progression (Anderson et al., 2009; British Pain Society, 2010), cancer patients from ethnic minorities are more likely to report such concerns (Anderson et al., 2000, 2002). Similarly, stoic responses to pain, the belief that pain is inevitable in chronic health conditions (Anderson et al.,

2000, 2002; Im, 2008) and fears about becoming dependent on analgesic medications (Cleeland, Gonin, Baez, Loehrer, & Pandya, 1997), have also been cited as reasons for underreporting pain among ethnic minority patients. Underreporting pain negatively impacts patient care, as it could lead clinicians to unintentionally discount a patient's pain at assessment (Booker et al., 2015). Despite the useful implications, the majority of research in this area has been conducted in the USA (e.g., see Anderson et al., 2009 for a review) and has frequently been limited to examining differences between Black African-Americans and non-Hispanic Whites. This fails to capture the heterogeneity of ethnicities that are currently present in other western countries like the UK.

In terms of clinician factors, clinicians are more likely to underestimate the severity of pain in patients from ethnic minorities compared to White patients (Anderson et al., 2000; Cleeland et al., 1997), and are consequently less likely to prescribe these patients analgesic medications (Chen et al., 2005). In a meta-analysis and systematic review of studies examining disparities in analgesic treatment (over 20 years) for 'traumatic/surgical' (e.g. postoperative pain), 'non-traumatic/non-surgical' (e.g. abdominal or back pain), 'mixed' (e.g. where studies made no distinction between traumatic/surgical and non-traumatic/non-surgical pain) and 'cancer' pain, the extent to which analgesics were prescribed differed between ethnic groups (Meghani, Byun & Gallagher, 2012). Black African-Americans were 34% less likely to receive opioids for 'non-traumatic/non-surgical' pain, and 14% less likely to receive opioids for 'traumatic/surgical' pain than White patients. Hispanic/Latinos were 30% less likely than White patients to receive opioid treatment than White patients for 'non-traumatic/non-surgical' pain, but treatment disparities were ameliorated for 'traumatic/surgical' pain. This research suggests that disparities were greater when the patient's pain was non-specific or widespread. This is also consistent with estimation of pain by clinicians, where the more that the pain lacks confirmatory signs

or obvious cause (such as trauma or surgery), the more the clinician's beliefs and stereotypes influence their estimation of pain (De Ruddere et al., 2014).

Due to language differences, medical consultations with ethnic minority patients who speak little or no English can be experienced by clinicians as challenging, which could lead to negative stereotyping of such patients (Wright, 1983). For instance, the use of somatisation (the expression of physical complaints as a means of communicating underlying psychological distress) to explain the presentation of pain among people from ethnic minorities is not uncommon (Kirmayer & Young, 1998). In a UK study investigating GPs' experiences of managing chronic pain in South Asian patients, the majority of GPs were likely to view the expression of non-specific pain in this population as somatisation (Patel, Peacock, McKinley, Carter & Watson, 2008). The concept however has several limitations. Firstly, its theoretical basis is highly abstract and fails to engage with well-established pain mechanisms (Sharpe & Williams, 2002), and secondly, there is a lack of available research evidence to support it (see Crombez, Beirens, Van Damme, Eccleston & Fontaine, 2009 for a review). In a study investigating the prevalence of chronic pain among UK torture survivors, a significant positive relationship was found between the actual torture location on the person's body and their report of pain at a high prevalence (Williams, Peña & Rice, 2010). These findings highlighted the importance of acknowledging and attending to the person's report of pain, and treating this alongside psychological distress if necessary.

Failure to be adequately concerned about pain experienced by people from ethnic minorities, appears to be rooted in a longstanding history of prejudice and discrimination towards those deemed as belonging to the 'outgroup' (Bourke, 2014). During the slavery period, despite their being no evidence of anatomical differences between Black slaves and White slave masters (Collins, 1811), White people believed that slaves were incapable of feeling physical pain (Pernick, 1985). This was because slaves were deemed to possess intellectually, underdeveloped brains

(Heatherley, 1883). This explanation dehumanised slaves and was used as evidence to demonstrate their 'ability' to endure depraved acts of abuse (Pernick, 1985). Such racist beliefs were contradictory because when pain was expressed, slaves' reactions were viewed among White people as exaggerated and hysterical (Bourke, 2014). More recently, intentional discounting of the pain experienced by ethnic minorities has been documented. For instance, even when clinicians (of which the majority were White) had access to patients' self-reported pain intensity ratings, they were twice as likely to underestimate the pain of Black patients compared to all other ethnicities (White, Asian, Pacific Islander and Hispanic) combined (Staton et al., 2007).

Brain imaging research has attempted to explain the nature of such biases by examining the degree of empathy shown towards people in pain. Perceiving pain in others has been found to activate three brain regions involved in the affective and somatosensory processing of pain: the anterior cingulate cortex, the anterior insula cortex (Contreras-Huerta, Baker, Reynolds, Batalha & Cunnington, 2013) and the prefrontal cortex (Apkarian, Hashmi & Baliki, 2011). Stronger neural activation in these brain regions, which is indicative of greater empathy, is more likely to occur when observing pain in people from the same ethnic group compared to when observing pain in people from a different ethnic group (Contreras-Huerta et al., 2013). More broadly, a lack of empathy towards the health needs of people from ethnic minorities is often demonstrated through negative dominant discourses within society. For instance, interpreting services within the UK National Health Service (NHS) are essential for facilitating communication between non-English-speaking patients (who are often from ethnic minorities) and clinicians (Department of Health, 2004). However, in 2013, the UK communities and local government secretary described such services as a "very expensive and poor use of taxpayers' money" (Monaghan, 2015). Therefore, it appears that when resources are limited due to cuts in public spending, blame is often attributed to people from ethnic minorities who are already disadvantaged (Napier et al., 2014).



## **Pain assessment**

Pain is widely accepted as a biopsychosocial phenomenon (Gatchel, McGeary, McGeary, & Lippe, 2014; Hanson & Gerber, 1990; Lasch, 2000): meaning that the experience of pain and its expression is determined by complex interactions between biological, social, and psychological factors (Gatchel et al., 2014; Gatchel, Peng, Peters, Fuchs & Turk, 2010; Lumley et al., 2011). Pain assessment is a process of investigation, whereby clinicians obtain information about the patient's pain through multiple sources: physical examinations; diagnostic tests; rating scales (e.g. to ascertain pain intensity); and clinical interviews (e.g. addressing the patient's pain-related coping strategies and resources, their fears and what they expect from treatment). The purpose of pain assessment includes: identifying the nature of the patient's pain and its characteristics to make a differential diagnosis; determining the patient's pain-related disability and their level of current physical capacity; identifying the impact of pain on the patient's day-to-day functioning; monitoring a patient's progress after treatment; and evaluating the effectiveness of treatment (Turk & Melzack, 2011). Pain assessment should therefore be conducted using a comprehensive / biopsychosocial approach, in that it should cover information about the patient as a whole, and not just his or her pain (Dansie & Turk, 2013). The multifaceted nature of pain assessment can help clinicians to recognise how biopsychosocial factors contribute to the maintenance of pain severity and pain-related disability, and can help provide information on how patients are likely to respond to treatment offered (Dansie & Turk, 2013).

As pain is a subjective experience (Carr, 1997; Tait & Chibnall, 2014), there is no objective record of the extent or severity of the pain a person experiences (Dansie & Turk, 2013; Turk & Melzack, 2011). Therefore, the patient must be at the centre of pain assessment because the assessment's success relies on what the patient communicates (verbally and nonverbally) to clinicians (Roberts et al., 2003). Patient self-report (Jensen & Karoly, 2011; Tait, & Chibnall, 2014) is the most commonly used

form of pain assessment and has been used to assess a range of pain dimensions. For instance, using self-report measures to assess pain intensity (how much the pain hurts the person), are particularly common within clinical practice. Brain imaging studies have demonstrated that pain intensity bears a reasonably good correlation with activation in brain regions involved in pain processing (Apkarian, Hashmi & Baliki, 2011). Other pain dimensions that can be assessed via patient self-report includes pain affect (the extent to which the person becomes emotionally aroused as result of the pain); pain quality (refers to the physical sensations associated with experiencing pain); and pain location (the area of the body the person experiences the pain) (Jensen & Karoly, 2011).

### **Pain assessment among patients from ethnic minorities**

Using self-report measures to assess pain among people from ethnic minorities can be challenging, particularly among patients with limited English (Nguyen, Ugarte, Fuller, Haas, & Portenoy, 2005). Therefore, the use of assessment measures in the patient's preferred language, where possible, is essential (The British Pain Society, 2010). A starting point for this, which is common (Sousa & Rojjanasrirat, 2011), is to produce translated versions of well developed, existing pain assessment measures that have been validated on English-speaking populations. However, language translation alone is often insufficient without additional psychometric testing to determine the reliability and validity of the measure's use, for the new, ethnically diverse population it will be used on. This is because without such testing there is no way of ascertaining the user-friendliness of the measure for the new target population, but more importantly, there is no means of ensuring whether the underlying concepts of the measure make sense culturally (Turk & Melzack, 2011). Despite these shortcomings, using an unvalidated, translated pain assessment measure is better than presenting it to a patient with little or no English in its validated English format.

Sousa and Rojjanasrirat (2011) have offered some guidance for translating assessment measures to other languages. Their guidance highlighted the importance of forward translation (translating the measure's instructions, items and response options from the original language the measure was developed to the new language) and back translation (translating the new language measure back to the original language it was developed in). Two translators are recommended for both stages. The first translator (i.e. a clinician) should be knowledgeable of the health terminology and the specific content the measure will cover, and the second translator should be knowledgeable of the linguistic (e.g. colloquialisms) and cultural nuances of the new target language (Sousa & Rojjanasrirat, 2011). Further necessary steps include pilot testing the translated measure on a representative sample of the target population; preliminary testing of the translated measure on bilingual speakers from the target population; and full psychometric testing on a large sample of the target population, to determine the measure's reliability and validity (Sousa & Rojjanasrirat, 2011).

There are some pain assessment measures that have been psychometrically tested for use with ethnic minorities where language differences exist. For instance, the Brief Pain Inventory (Cleeland, 1989) assesses pain intensity and the extent of which pain interferes with the person's daily life. It has been psychometrically and linguistically validated in 26 languages including Hindi (Saxena, Mendoza & Cleeland, 1999), Korean (Yun et al., 2004), Russian (Kalyadina et al., 2008) and Norwegian (Klepstad et al., 2002), and has been shown to have good reliability and validity (Cleeland & Ryan, 1994). Similarly, the Faces Pain Scale – Revised (Hicks, von Baeyer, Spafford, van Korlaar, & Goodenough, 2001) has been translated into over 35 languages (e.g. French, Arabic and Turkish). Despite being developed for children, researchers have used it in adult populations where patient self-reports of pain have been difficult, such as among older adults with literacy difficulties (Herr & Garand, 2011). The Faces Pain Scale – Revised assesses pain intensity using six faces on a scale 0 (no pain) to 10 (very much pain). Each face conveys a facial expression of the

extent to which something can hurt, and the child is required to select the face that best describes their current level of pain (Hicks et al., 2001). Similarly, the British Pain Society (2006) has produced a series of Numerical Rating Scales in 15 common languages (including Bengali, Gujarati, Somali, and Welsh) spoken by adults in the UK, in an attempt to improve pain assessment procedures for non-English-speaking patients. Numerical Rating Scales (Jensen & Karoly, 2011) require patients to rate the intensity of their pain on a scale ranging from 0 (no pain) to 10 (extreme pain). The scales and their response options are reliable in that they are simple and easy to understand (British Pain Society, 2006), which may make them less susceptible to inaccurate completion.

### **Clinical practice guidelines**

Clinical practice guidelines (CPGs) are statements including recommendations based on a systematic review of research evidence, aimed at optimising patient healthcare, by outlining possible advantages and disadvantages of different healthcare options (Graham, Mancher, Miller-Wolman, Greenfield & Steinberg, 2011). Despite their importance, non-compliance with CPGs among clinicians is common (Carthey, Walker, Deelchand, Vincent & Griffiths, 2011). Within the NHS, multiple reasons have been cited for this including clinicians feeling overwhelmed by the increasing volume of existing CPGs (Greenhalgh, Howick & Maskrey, 2014); confusion of which CPG is best to use when multiple exist from different professional associations on the same health topic; continued circulation of older versions of CPGs, despite updated versions existing; and the length of CPGs, which makes them time consuming to read (Carthey et al., 2011).

It is hoped that CPG implementation will ensure that patient care is more consistent, safer and more and cost-effective (Pope, 2003). However, if CPGs are not implemented, or they do not exist on a particular health topic, clinicians are left to improvise and use intuitive processes to make clinical decisions (Tait & Chibnall,

2014). However, this is problematic because such decisions are highly susceptible to biases (Hirsh, Jensen & Robinson, 2010).

### **The current review**

There is a need for pain assessment among patients from ethnic minorities to be adapted where necessary to meet the needs of this population. This is particularly relevant in the UK, where people from ethnic minorities make up 14.1% of the total population (Office for National Statistics, 2011). Although the literature has made some suggestions on conducting pain assessment with ethnic minorities (e.g. using translated pain assessment measures), it is unclear of which best practices have been recommended by CPGs as the best to follow within clinical settings. This is pertinent because when CPG recommendations are vague, ethnic minority disparities in pain treatment are more pronounced (Burgess, van Ryn, Crowley-Matoka & Malat, 2006).

The purpose of the current systematic review was to evaluate the quality of existing CPGs that address pain assessment among patients from ethnic minorities where language differences exist. As CPGs are designed to inform clinical decision making (Brouwers et al., 2010), the review also investigated what the best practice recommendations are for conducting pain assessment among this group.

## **Method**

### **Search strategy**

A systematic search of PsychINFO, MEDLINE, EMBASE and Cochrane was conducted from the earliest date until 7<sup>th</sup> February 2015. The exact search terms included a combination of text word (tw) and Medical Subject Heading (MeSH) terms. Some MeSH terms were exploded (exp) to include citations with more specific MeSH subheadings. Both searches below used the AND operator to combine the searches from concept A, B and C together.

## **OID - PsycINFO, MEDLINE and EMBASE**

### *A. Pain*

“Pain” [MeSH: exp] or “Pain Management” [MeSH] OR “Pain Measurement” [MeSH]  
OR “(pain adj5 (assessment\* OR manag\* OR scale))” [tw]

### *B. Clinical Practice Guidelines*

“(Clinical adj5 practice adj5 guideline\*)” [tw] OR “treatment guideline” [tw] OR “best practice” [tw] OR “professional standard\* [tw] OR “evidence based practice” [tw] OR “treatment guidelines” [MeSH] OR “clinical practice” [MeSH] OR “evidence based practice” [MeSH] OR “best practices” [MeSH].

### *C. Culture/ Ethnicity*

“(Culture OR language OR ethnic\* OR migrant\*)” [tw]

## **Cochrane**

### *A. Pain*

“Pain” [MeSH: exp] OR “Pain Management” [MeSH: exp] OR “Pain Measurement” [MeSH: exp] OR “(pain NEAR (assessment\* OR manag\* OR scale))” [tw]

### *B. Clinical Practice Guidelines*

“(Clinical NEAR practice NEAR guideline\*)” [tw] OR “treatment guideline” [tw] OR “best practice” [tw] OR “professional standard” [tw] OR “evidence based practice” [tw] OR “Evidence-Based Practice” [MESH: exp] OR “Practice Guidelines as Topic” [MeSH:exp] OR “Practice Guideline” [MeSH: exp]

### *C. Culture/Ethnicity*

“(culture OR language OR ethnic\* OR migrant\*)” [tw]

An extensive grey literature search was also conducted through a range of sources: guideline databases (The National Institute of Health and Clinical Excellence (NICE), The Scottish Intercollegiate Guidelines Network, The National Guideline Clearinghouse, The Canadian Medical Association Infobase, and The Australian Government National Health and Medical Research Council), and association websites (British Pain Society, Royal College of Nursing (UK), Royal College of Physicians (UK), IASP, European Association for Medical Oncology, European Association of Urology, The National Comprehensive Cancer Network (USA), Registered Nurses' Association of Ontario, Canadian Pain Society, Hartford Institute for Geriatric Nursing, Winnipeg Regional Health Authority, Tasmanian Government Department of Health and Human Services, Health Care Association of New Jersey, Institute for Clinical Systems Improvement, Toward Optimised Practice, Australian and New Zealand College of Anaesthetists and Faculty of Pain Medicine, International Association for Hospice and Palliative Care, National Opioid Use Guideline Group, Joanna Briggs Institute for Evidence Based Nursing and Midwifery, American Pain Society, and American College of Physicians). The search terms included for the grey literature searches were "pain", "pain assessment", or "pain AND assessment". The reference lists from the retrieved records were also checked for relevant CPGs. The titles and abstracts of all records from the searches were independently reviewed by the author, Judy Addai-Davis (Trainee Clinical Psychologist). Disagreements were discussed with an independent assessor until consensus was reached.

### **Inclusion and exclusion criteria**

Published CPGs were included in the review if they addressed the assessment or management of pain in adults (with any physical health condition) from ethnic minorities. The review was particularly concerned with pain assessment in this population where language differences existed, and acknowledged that many people from ethnic minorities speak host languages (e.g. English in the UK) very well. If

CPGs had more than one version, the most up to date version was included. Any CPGs published in languages other than English were excluded from the review if a translated version was unavailable.

### **Guideline quality assessment**

Guideline quality was evaluated using a component approach involving two steps: 1) examining the Appraisal of Guidelines for Research and Evaluation (AGREE) II tool (Brouwers et al., 2010), to identify the most relevant domains (and items within them) to address the review questions; and 2) assessing the items in these domains for risk of bias, using the Cochrane Collaboration's criteria for assessing risk of bias in randomised trials (Higgins, Altman & Sterne, 2011). This approach was adopted because although the AGREE II (in its original form) is widely used (Siering, Eikermann, Hausner, Hoffmann-Eßer & Neugebauer, 2013), it has several limitations. For instance, the validity of the tool's overall assessment score is unclear, due to the lack of guidance available on how different domain scores should be weighted to inform whether or not a guideline should be recommended for use (Alonso-Coello et al., 2010).

The AGREE II domains (and items) deemed most appropriate by the author were *Scope and Purpose* (the aim of the CPG, the health questions addressed and its target population); *Stakeholder Involvement* (the extent of which the CPG has been developed by appropriate stakeholders and represents the views of its intended users); *Rigour of Development* (whether systematic methods (i.e. systematic review) were used to gather and synthesise the evidence, the strengths and limitations of the evidence, the links between the recommendations and the supporting evidence, whether the CPG was externally reviewed prior to publication, and whether a procedure for updating the CPG has been put in place); and *Applicability* (the barriers and facilitators to implementing the CPG, resources or tools to improve the uptake of its use, the resource implications (e.g. financial costs) of applying the CPG in practice,



and monitoring or auditing criteria for the CPG). For items within the *Applicability* domain, the author also documented whether CPGs made particular considerations for people without the language of the CPG was written in.

Risk of bias judgements were made for all items across the four domains, by the author. Judgements were assessed as 'low risk' (the CPG provided sufficient information to satisfy the item), 'high risk' (the guideline provided insufficient information to satisfy the item) or 'unclear risk'. The latter rating was given when potential bias could not be determined due to lack of information (Higgins, Altman & Sterne, 2011) within the CPG. When CPGs outlined their overall aims without outlining specific health questions this was rated as 'low risk'. Any disagreements were resolved through discussion until consensus agreement was reached.

### **Guideline data extraction**

Data extraction was conducted independently by the author. The data extracted from included CPGs were their characteristics (e.g. name of CPG, organisation that developed it, publication year, country of development and the funding body), and their recommendations on assessing pain in patients from ethnic minorities, particularly where language differences exist.

## **Results**

### **Guideline identification**

The PRISMA flow diagram (see Figure 1) demonstrates the process by which CPGs were identified and selected. Searches of electronic and guideline databases produced 2516 records, 2345 after de-duplication. The 2248 records excluded on the basis of their titles and abstracts were either not CPGs or concerned an irrelevant topic. Ninety-eight records were read in full to assess their eligibility against the inclusion criteria. Of these, 90 records were excluded for the following reasons: seven records were not CPGs; full texts of two CPGs were unavailable; two CPGs were not

available in English; 28 CPGs did not address pain assessment; one CPG did not address pain assessment in adults; 47 CPGs did not address pain assessment in people from ethnic minorities where language differences exist; and three CPGs mentioned difficulties in pain assessment among ethnic minorities, but failed to recommend what clinicians should do.

Due to the lack of clarity about its CPG status, one CPG (Emergency care acute pain management manual, National Institute of Clinical Studies, 2011) was further discussed but as it included evidence-based recommendations aimed at optimising patient healthcare (Graham et al., 2011), it was agreed to include it. Additionally, one CPG (Pain Assessment and Management: Clinical practice guidelines, Winnipeg Regional Health Authority, 2012) was developed from another included in the review (Assessment and Management of Pain, Registered Nurses' Association of Ontario, 2013), but since their content differed both were included. This gave a total of eight CPGs in the review.

### **Guideline characteristics**

Characteristics of the included CPGs are presented in Table 1. All were published between 2010 and 2014, six had been updated (the latest versions were included in the review) and two were original versions. Four of the CPGs were developed in the USA, two in Australia and two in Canada. Two CPGs addressed pain assessment and management broadly, but the others had much narrower scopes: acute pain, chronic pain, pain within palliative care and emergency department settings, pain in the context of cancer, and pain among homeless people.

## Results of literature search

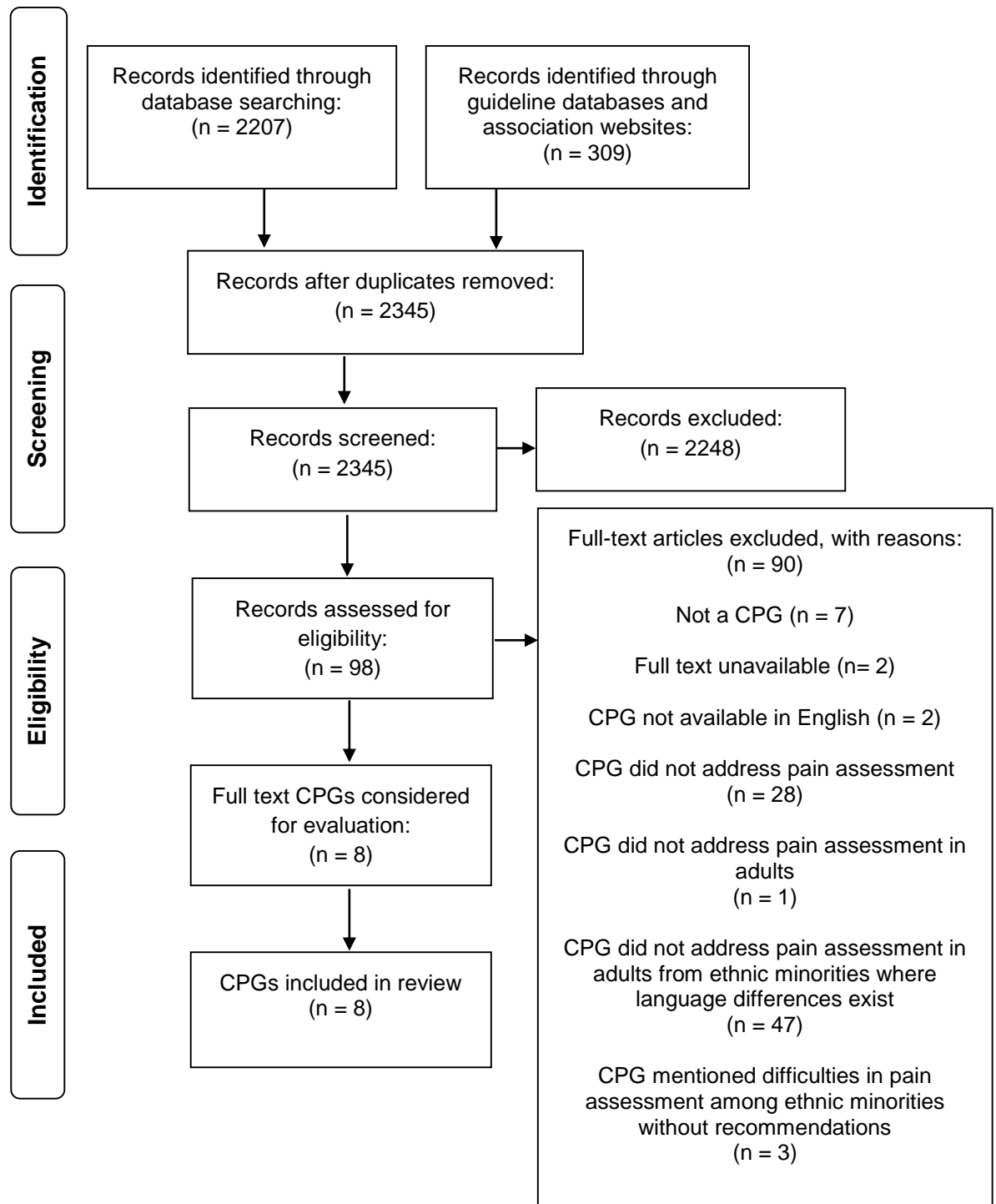


Figure 1: PRISMA flow diagram of included and excluded guidelines

Table 1

*Characteristics of guidelines included in the review*

Guideline development group	Guideline name	Publication year	Country	Funding body	Status
<i>National Comprehensive Cancer Network (NCCN)</i>	Adult cancer pain	2014	USA	NCCN Foundation	Updated
<i>Institute for Clinical Systems Improvement (ICSI 1)</i>	Assessment and management of chronic pain	2013	USA	ICSI	Updated
<i>Institute for Clinical Systems Improvement (ICSI 2)</i>	Palliative care for adults	2013	USA	ICSI	Updated
<i>Registered Nurses' Association of Ontario (RNAO)</i>	Assessment and management of pain	2013	Canada	Government of Ontario	Updated
<i>Winnipeg Regional Health Authority (WRHA)</i>	Pain assessment and management: Clinical practice guidelines	2012	Canada	WRHA	Updated
<i>National Health and Medical Research Council (NHMRC)</i>	Emergency care acute pain management manual	2011	Australia	NHMRC	Original version
<i>National Health Care for the Homeless Council (NHCHC)</i>	Adapting your practice: Recommendations for the care of homeless adults with chronic non-malignant pain	2011	USA	Not funded	Original version
<i>Australian and New Zealand College of Anaesthetists and Faculty of Pain Medicine (ANZCA &amp; FPM)</i>	Acute pain management: Scientific evidence (third edition)	2010	Australia	ANZCA & FPM	Updated

## **Risk of bias guideline quality assessment**

Risk of bias evaluations for the CPGs are presented in Table 2. On the *Scope and Purpose* domain two CPGs (ANZCA & FPM, 2010; WRHA, 2012) were rated as unclear due to failing to provide information about the target population in the CPG's opening paragraphs, which meant that further reading was required before this became apparent.

On the *Stakeholder Involvement* domain five guidelines (NCCN, 2014; NHCHC, 2011; NHMRC, National Institute of Clinical Studies, 2011; RNAO, 2013; WRHA, 2012) were rated as high risk because they made no reference to consulting with patients or the public during the guideline development process. The last guideline (ANZCA & FPM, 2010) was rated as unclear because although it reported that public consultation took place, only healthcare professionals were documented as contributors to this process.

In relation to *Rigour of Development*, the extent to which systematic methods were used to gather evidence was rated as high risk on two CPGs: the first CPG (NHCHC, 2011) used expert consensus only to gather its evidence and the second (NHMRC, National Institute of Clinical Studies, 2011) made no reference to how the included evidence was gathered. Two CPGs (NCCN, 2014; WRHA, 2012) were rated as unclear because they did not provide details of conducting systematic reviews to search for evidence, but provided a grading system that weighed up the strengths and limitations of the evidence. The last CPG (ICSI 2, McCusker et al., 2013) was also rated as unclear because although it stated that a systematic search of the literature was conducted and included the search terms that were used, the names of the databases searched were not documented. In terms of outlining the strengths and limitations of the evidence, two CPGs were rated as high risk (NHCHC, 2011; NHMRC, National Institute of Clinical Studies, 2011) because this could not be determined as the use of systematic methods was not documented. Three were rated as unclear. In the ICSI 2 (McCusker et al., 2013) CPG, the quality of evidence is

categorised as either high, moderate or low. Similarly, the quality of evidence in the NCCN (2014) CPG is categorised as high-level, lower-level or any level. However, neither CPG outlines the types of trial included for each category of evidence. The CPG by WRHA (2012) uses a grading system for its evidence, but does not include any supporting evidence to demonstrate where their overall recommendations have stemmed from. Therefore, the strengths and limitations of the evidence included cannot be ascertained. Similarly, for the above reasons the CPG by WRHA (2012) was also rated as high risk with regards to whether clear links were made between its supporting information and the recommendations given. In terms of whether CPGs had been externally reviewed by experts prior to publication, two (NCCN, 2014; NHMRC; National Institute of Clinical Studies, 2011) were rated as high risk because they did not document such details. Two CPGs (ANZCA & FPM, 2010; RAO, 2013) were rated as unclear because although reviews were conducted the names and professional backgrounds of those involved were not reported. With regards to outlining the procedure for updating the guideline, three CPGs (NHCHC, 2011; NHMRC, National Institute of Clinical Studies, 2011; WRHA, 2012) were rated as high risk because they failed to include this information.

On the *Applicability* domain, the majority of CPGs were rated as high risk (ANZCA & FPA, 2010; NCCN, 2014; NHCHC, 2011; NMHRC, National Institute of Clinical Studies, 2011; WRHA, 2012) because they did not provide information of about possible barriers and facilitators to implementation. Two CPGs were rated as unclear (ICSI 1, Hooten et al., 2013; ICSI 2, McCusker et al., 2013) because although they stated that both barriers and facilitators to implementation were discussed as part of the guideline development process, only facilitators were documented. Two CPG (NCCN, 2014; NHMRC, National Institute of Clinical Studies, 2011) were rated as high risk because they did not provide advice or tools on how their recommendations could be put into practice. In relation to whether the resource implications of the CPGs had been considered, seven CPGs (ANZCA & FPA, 2010;

ICSI 1, Hooten et al., 2013; ICSI 2, McCusker et al., 2013; NCCN, 2014; NHCHC, 2011; NHMRC, National Institute of Clinical Studies, 2011; WRHA, 2012) were rated as high risk for not documenting whether or not this had happened. With regards to whether the included CPGs outlined monitoring and/or auditing criteria for their recommendations, four were rated as high risk (ANZCA & FPM, 2010; NCCN, 2014; NHCHC, 2011; NHMRC, National Institute of Clinical Studies, 2011) because they did not.

Table 2

*Risk of bias quality ratings across guidelines*

AGREE II domains & items	Guideline development group							
	NCCN	ICSI 1	ICSI 2	RNAO	WRHA	NHMRC	NHCHC	ANZCA & FPA
<i>Scope and Purpose</i>								
Are the objectives clearly defined	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk
Are the health questions covered by the guideline specifically outlined	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk
The population for whom the guideline is meant for has been outlined	Low risk	Low risk	Low risk	Low risk	Unclear	Low risk	Low risk	Unclear
<i>Stakeholder Involvement</i>								
The guideline development group includes individuals from all professional groups	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk
The views and preferences of the target population (patients, public) have been sought	<i>High risk</i>	Low risk	Low risk	<i>High risk</i>	<i>High risk</i>	<i>High risk</i>	<i>High risk</i>	Unclear
<i>Rigour of Development</i>								
Systematic methods were used to search for evidence	Unclear	Low risk	Unclear	Low risk	Unclear	<i>High risk</i>	<i>High risk</i>	Low risk
The strengths and limitations of the evidence are clearly described	Unclear	Low risk	Unclear	Low risk	Unclear	<i>High risk</i>	<i>High risk</i>	Low risk
There is an explicit link between the recommendations and the supporting evidence	Low risk	Low risk	Low risk	Low risk	<i>High risk</i>	Low risk	Low risk	Low risk



The guideline has been externally reviewed by experts prior to publication	<i>High risk</i>	Low risk	Low risk	Unclear	Low risk	<i>High risk</i>	Low risk	Unclear
A procedure for updating the guideline is provided	Low risk	Low risk	Low risk	Low risk	<i>High risk</i>	<i>High risk</i>	<i>High risk</i>	Low risk
<i>Applicability</i>								
The guideline describes barriers and facilitators to its application	<i>High risk</i>	Unclear	Unclear	Low risk	<i>High risk</i>	<i>High risk</i>	<i>High risk</i>	<i>High risk</i>
The guideline provides advice and/or tools on how the recommendations can be put into practice.	<i>High risk</i>	Low risk	Low risk	Low risk	Low risk	<i>High risk</i>	Low risk	Low risk
The potential resource implications have been considered	<i>High risk</i>	<i>High risk</i>	<i>High risk</i>	Low risk	<i>High risk</i>	<i>High risk</i>	<i>High risk</i>	<i>High risk</i>
The guideline presents monitoring and/or auditing criteria	<i>High risk</i>	Low risk	Low risk	Low risk	Low risk	<i>High risk</i>	<i>High risk</i>	<i>High risk</i>

*Note: abbreviations in column 1 of table 1.*

### **Guideline recommendations**

The recommendations from the eight CPGs on conducting pain assessment among people with ethnic minorities where language differences exist are presented in Table 3.

#### *Pain assessment considerations*

The majority of recommendations were supported by evidence from lower quality studies, clinical experience, or expert consensus. Only one recommendation (RNAO, 2013), which stated that anyone with any type of pain should receive a comprehensive pain assessment (this necessarily includes people from ethnic minorities), was supported by evidence from a randomised control trial.

Three CPGs (NCCN, 2014; RNAO, 2013; WRHA, 2012) made recommendations about what the role of culture and ethnicity in comprehensive pain assessment. However, of these, none provided further information or examples of how clinicians should assess these in relation the patient's pain experience. One CPG (AZCA & FPM, 2010) recommended that clinicians are aware of patient factors that contribute to sub-optimal pain assessment, but did not explain what actions clinicians should take to respond to this. This CPG also recommended what clinicians should do to avoid negative biases when conducting pain assessment in this context, but failed to provide clear details of how clinicians should carry out the recommended suggestion.

In terms of additional adaptations to the pain assessment process, three CPGs (ICSI 1, Hooten et al., 2013; ICS 2, McCusker et al., 2013; NCCN, 2014) recommended using interpreters when assessing pain in patients with a different language to the consulting clinician. However, only one CPG (ICSI 2, McCusker et al., 2013) gave specific best practice guidance on how clinicians should use interpreters in this context.

### *Pain assessment scales*

When selecting appropriate scales for assessing pain among patients from ethnic minorities, two CPGs (ANZCA & FPM, 2010; RNAO, 2013) gave recommendations and six did not (ICSI 1, Hooten et al., 2013; ICSI 2; McCusker et al., 2013; NCCN, 2014; NHCHC, 2011; NHMRC, National Institute of Clinical Studies, 2011; WRHA, 2012).

With regards to the pain assessment scales the CPGs recommended for use, six CPGs (ANZCA & FPM, 2010; ICSI 1, Hooten et al., 2013; NCCN, 2014; NHCHC, 2011; NHMRC, National Institute of Clinical Studies, 2011; RNAO, 2013) recommended using the Faces Pain Scale - Revised (Hicks et al., 2001); three recommended using the Brief Pain Inventory (Cleeland, 1989) which is available online in many but not all languages; and two (ANZCA & FPM, 2010; WRHA, 2012) recommended using translated versions of the Numerical Rating Scale (British Pain Society, 2006) which have several European languages. One CPG (ANZCA & FPM, 2010) recommended using the Visual Analogue Scale (Jensen & Karoly, 2011), if the terms for the anchors of the scale were chosen carefully. However, this CPG provided no further information of what terms would be suitable and how to translate them effectively. Another CPG recommended using the Verbal Rating Scale (Jensen & Karoly, 2011). However, this was specifically in relation to assessing pain among patients from Aborigine and Torres Strait Islanders groups. All but one CPG (ICSI 1, Hooten et al., 2013) did not suggest alternative options for pain assessment if patient self-report was not possible.

Table 3

*Recommendations for pain assessment among people from ethnic minorities where language differences exist*

Guideline reference	Ethnic minority group as defined by guideline	Recommendations for clinicians to guide pain assessment	Recommended pain assessment scale(s)
NCCN (2014)	Patients with language or cultural differences	<ul style="list-style-type: none"> <li>• Comprehensive pain assessment should involve the patient's cultural beliefs about pain experience, pain expression and pain treatment</li> <li>• Clinicians should be aware of the impact of cultural and linguistic diversity during comprehensive pain assessment.</li> <li>• Clinicians should use trained interpreters.</li> </ul>	<ul style="list-style-type: none"> <li>• Faces Pain Scale* +</li> </ul>
ICSI 1 (Hooten et al., 2013)	Patients for whom English is a second language or who are non-English-speaking	<ul style="list-style-type: none"> <li>• Allow sufficient time for assessment*</li> <li>• Comprehensive pain assessment should involve identification of potential barriers that could interfere with the pain assessment process such as language barriers. By identifying these early on, clinicians are better able to problem-solve around what can and cannot be done to manage this.*</li> <li>• Clinicians should use language interpreters.*</li> <li>• Clinicians should use the following indicators of pain to inform pain assessment in the following hierarchy of importance: patient self-report, pain-related behaviours (e.g., grimacing), reports of pain given by family members or carers and physiological measures (vital signs) of pain.*</li> <li>• Clinicians should only use behavioural or physiological measures of pain when no suitable alternative exists.*</li> </ul>	<ul style="list-style-type: none"> <li>• Faces Pain Scale* +</li> <li>• Brief Pain Inventory +</li> </ul>
ICSI 2 (McCusker et al., 2013)	Patients for whom English is a second	<ul style="list-style-type: none"> <li>• Clinicians should understand that not all assessment measures such as pain assessment scales are universal. Therefore, clinicians should use terms that are culturally relevant.*</li> </ul>	-

	language or who are non-English-speaking	<ul style="list-style-type: none"> <li>Clinicians should use existing best practices of using professional medical interpreters: 1) meet interpreters prior to the meeting the patient to prepare them; 2) inform the interpreter and patient that information discussed will be translated word for word; 3) clinicians should pause to allow the interpreter to translate after each complete statement is made; 4) clinicians should speak directly to the patient or their family member (e.g. when asking about pain) rather than the interpreter; 5) clinicians should meet with interpreters after the meeting to debrief them; and 6) clinicians should establish good relationships with medical interpreter companies.*</li> </ul>	
RNAO (2013)	-	<ul style="list-style-type: none"> <li>Clinicians should select pain assessment scales that are developmentally and culturally appropriate to the population they are working with.*</li> <li>The pain assessment scale selected should be available in multiple languages or it should easily be translatable.*</li> <li>Clinicians should perform a comprehensive pain assessment on anyone that reports any type of pain.***</li> <li>Clinicians should be aware that a comprehensive pain assessment is influenced by the person's ethnicity, culture, illness, level of disability, age, developmental stage, education level or cognitive status, ability to communicate, biology, previous experiences with pain and reluctance to report pain.*</li> </ul>	<ul style="list-style-type: none"> <li>Faces Pain Scale +</li> <li>Brief Pain Inventory +</li> </ul>
WRHA (2012)	Adults where English is not their first language	<ul style="list-style-type: none"> <li>Comprehensive pain assessment should involve assessment of the physical, psychological, social, cultural and spiritual components of pain.*</li> </ul>	<ul style="list-style-type: none"> <li>Brief Pain Inventory +</li> <li>Translated versions of the Numerical Rating Scales developed by the British Pain Society* +</li> </ul>
NHMRC (National Institute of Clinical Studies, 2011)	Adults who speak a different language	<ul style="list-style-type: none"> <li>Clinicians should be aware that a person's perception of their pain may be influenced by their culture, past experiences of pain, their ability to cope with pain and their beliefs.</li> </ul>	<ul style="list-style-type: none"> <li>Faces Pain Scale +</li> </ul>

NHCHC (2011)	Patients with language barriers	-	<ul style="list-style-type: none"> <li>• Faces Pain Scale +</li> </ul>
ANZCA & FPA, 2010	Aboriginal and Torres Strait Islander peoples	<ul style="list-style-type: none"> <li>• Clinicians should be aware that pain may be under-reported in this patient group**</li> </ul>	<ul style="list-style-type: none"> <li>• Verbal Rating Scale**</li> <li>• Visual Analogue Scale with carefully chosen anchor terms*</li> </ul>
	Different ethnic and cultural groups	<ul style="list-style-type: none"> <li>• Clinicians should be aware that language and cultural factors may affect a patient's communication*.</li> <li>• Clinicians should consider language and cultural factors when selecting an appropriate pain assessment scale to use.*</li> <li>• Clinicians should not stereotype patients from different ethnic and cultural groups based on observed differences, as this could lead to assumptions about responses to pain or pain therapies; pain assessment should always be conducted on an individual patient basis.*</li> </ul>	<ul style="list-style-type: none"> <li>• Faces Pain Scale +</li> <li>• Numerical Rating Scale - translated versions developed by the British Pain Society.* +</li> </ul>

*Note: see column 1 table 1 for abbreviations. \* Evidence from clinical experience and/or expert consensus, \*\*Evidence from observational studies, \*\*\* Evidence from randomised control trial, + pain assessment scale has been translated into multiple languages.*

## Discussion

The current systematic review examined the quality of eight CPGs that addressed pain assessment among patients from ethnic minorities whose language is not shared with the clinical staff. The review also examined the recommendations from each CPG on pain assessment, with the aim of identifying examples of best practice for clinicians.

### Summary of guideline quality

#### *Consultation with patients during guideline development*

One of the key findings of the review was in relation to *Stakeholder Involvement*, as the majority of CPGs did not consult with patients during guideline development, or it was not clear from the information provided whether this process had taken place. This is a significant limitation for pain assessment within this context because if one of the tasks of the assessment is for clinicians and patients to identify a suitable, shared language for pain, who better than to ask the patients themselves?

Interestingly, the two CPGs that did consult with patients were developed by the same guideline development group. The ICSI 1 CPG (Hooten et al., 2013) conducted focus groups with chronic pain patients. These involved group discussions about the impact of living with chronic pain on patients' lives; what patients did to manage their pain; what patients expected the role of their treating clinician to involve; and patients' perspectives and understanding of available treatment options. The content from the discussions were then fed back and incorporated into the guideline development process. The ICSI 2 CPG (McCusker et al., 2013) included a patient representative as part of the guideline development group, therefore the patient perspective was embedded throughout all stages of the guideline development process.

These two examples clearly illustrate that incorporating patient perspectives within guideline development is possible to do, and therefore should be taken into consideration by guideline development groups when preparing future CPGs.

#### *Guideline objectives and methods used to gather evidence*

All CPGs clearly outlined their *Scope* and *Purpose* within their opening paragraphs. A benefit of this for clinicians working in busy clinical environments is that the most relevant CPGs can be promptly identified for use without unnecessary delays (Lee, Yamada, Kyololo, Shorkey & Stevens, 2014).

Despite this, the quality of the CPGs was mixed with regards to *Rigour of Development*, with over half of the CPGs not including details of, or not clearly explaining, the methodological process involved in gathering their evidence. This includes documenting whether systematic methods were used to develop supporting evidence; outlining how the quality of the evidence was determined; and whether the included evidence for each CPG was externally reviewed prior to publication. Therefore, even if a CPG is easily identifiable, if the validity of the information it provides is limited, its usefulness is questionable.

#### *Implementation of guidelines within clinical practice*

The overall quality of CPGs in relation to *Applicability* in clinical settings was relatively poor. However, a particular area of neglect was that the majority of CPGs failed to consider the potential resource implications involved with guideline implementation. The one CPG (RNAO, 2013) that did address this highlighted the necessary resources for appropriate implementation of their pain assessment recommendations (e.g. having appropriate staffing levels, having a range of pain assessment and educational tools and providing ongoing training in pain assessment and management for clinicians) and outlined their cost implications.



Considerations about guideline implementation are particularly important because CPGs are more likely to be adopted when the implementation strategies are practical and clearly defined (Glasziou & Haynes, 2005). However, ensuring that adequate guideline implementation occurs is not as simple as it may appear and failure to provide sufficient implementation recommendations is not unique to the CPGs in this review. In a systematic review (Alonso-Coello et al., 2010) that evaluated the quality of 626 CPGs (using the AGREE II in its original form) over the past 20 years across multiple health disciplines (e.g. oncology, psychiatry paediatrics), guideline *Applicability* has remained consistently poor. This suggests that ensuring adequate guideline implementation is a complex endeavour and is likely to be beyond the scope of the expertise of the guideline development group (Alonso-Coello et al., 2010).

#### *Accessibility of the guidelines for patients where language differences exist*

Surprisingly, none of the CPGs made any reference to how people without the language of the CPG could use them, or considered what, if any, are the adaptations that would need to be made for this to be possible. Therefore, even though the CPGs made recommendations on pain assessment among patients where language differences exist, if the guidelines themselves are inaccessible to patient groups from ethnic minority language communities, their usefulness is questionable. Given the focus of this review, this is a further limitation in the quality of the included CPGs.

#### **Summary of guideline recommendations**

Overall, in comparison to the depth and breadth of each CPG, rather few recommendations for pain assessment were made. They were often based on low quality evidence or expert consensus rather than evidence, which of course may be lacking. The gap, however, also reinforces the negative discourses during times of

austerity that the healthcare needs of people from ethnic minorities is an area of less importance (Napier et al., 2014).

#### *Pain assessment considerations*

Despite covering acute pain (ANZCA & FPM, 2010) chronic pain (ICSI 1, Hooten et al., 2013) and pain overall (RNAO, 2013), these three CPGs all recommended that comprehensive pain assessment should address the impact of the patient's ethnicity on their experience of pain. This recommendation is consistent with current evidence that suggests that a biopsychosocial approach to pain assessment, which considers factors beyond the patient's pain itself, should be adopted (Dansie & Turk, 2013). However, of these, the recommendation by the ICSI 1 (Hooten et al., 2013) CPG should be deemed as superior because it was rated as low risk of bias on all items in relation to *Scope and Purpose, Rigour of Development and Stakeholder Involvement* (including consultation with patients during guideline development).

Similarly, of the three CPGs that recommended using interpreters for pain assessment of patients (or family members or carers) that do not speak the same language as the clinician, again the recommendation from the ICSI 1 (Hooten et al., 2013) CPG would be deemed the best for the reasons outlined above. Despite this, the ICSI 2 (McCusker et al., 2013) CPG provides a better description of how clinicians should use interpreters within this context. However, caution must be exercised if using these recommendations because this CPG was rated as having unclear risk of bias for the extent to which systematic methods were used to gather its evidence.

Differences in the recommendations given across the CPGs were also noted. One CPG (ANZCA & FPA, 2010) recommended that clinicians should be mindful of the underreporting of pain among patients from ethnic minorities, and should refrain from negatively stereotyping these patients on the basis of their ethnicity. This is consistent with studies documented in existing literature reviews (e.g. Anderson. et

al., 2000) on patient and clinician factors contributing to ethnic minority disparities in pain assessment and treatment.

#### *Pain assessment scales*

Of the two CPGs that highlighted the importance of selecting culturally and developmentally appropriate pain assessment scales, the ANZCA and FPM (2010) CPG should be considered as superior because systematic methods were used to gather its evidence and there was an attempt to consult with patients (the other did not) during guideline development, although it was not clear how the feedback was incorporated.

The ICSI 1 (Hooten et al., 2013) CPG (which was rated superior to other CPGs in terms of low risk of bias) recommended using the Faces Pain Scale - Revised (Hicks et al., 2001) and the Brief Pain Inventory (Cleeland, 1989). These were also the most commonly recommended by all CPGs. Translated versions of the Numerical Rating Scale were the third most commonly recommended scale, all of which have been used to assess pain among patients from ethnic minorities with limited or no English, with documented success (e.g. Kim & Buschmann., 2006; Stuppy, 1998; Taylor & Herr, 2003). For instance, In a study in Kenya, Swahili-speaking patients demonstrated good comprehension for Swahili translated versions of the Numerical Rating Scale and the Faces Pain Scale - Revised (forwards and backwards translation only) and both scales were deemed as acceptable by patients for assessing pain (Huang, et al., 2012). However, the sample size (15) was small. The Brief Pain Inventory (which uses Numerical Rating Scales, but has more questions) has been used to assess pain severity and the impact of pain on daily functioning among patients from ethnic minorities with chronic health conditions such as cancer and AIDS (Breitbart et al., 1998), and it is available in many languages, free, from its website.

## **Limitations of recommendations**

The recommendations given had several limitations that need to be taken into consideration. Firstly, the majority of recommendations were vague. Some outlined what clinicians should not do rather than what they should do, and those that did explain what clinicians could do to assess pain failed to give specific details about what these actions would look like in practice. An example of this is the recommendation of using carefully chosen anchor terms if using the Visual Analogue Scale to assess pain (ANZCA & FPA, 2010). It is unclear from this information how a clinician should go about doing this and inadvisable for reliability that clinicians should choose rather than using standard forms. Similarly, anchor terms deemed appropriate by the clinician may not make sense to the patient – hence the importance of user consultation or involvement in writing the guidelines.

Vague recommendations are problematic because they increase the likelihood of CPG non-compliance (Michie & Johnston, 2004); can lead to inconsistent patient care (Pope, 2003); and may be used but interpreted with existing negative biases (Hirsh et al., 2010). Therefore, to improve the clarity of CPG recommendations, which in turn may improve implementation, recommendations need to be provided ready to use (like the British Pain Society's recommended pain scales in various languages – they are ready to download and print) and made more behaviourally specific: this includes providing explicit step-by-step details of what actions need to be carried out; details of who needs to do it or who else needs to be involved; and where and when certain actions will take place (Michie & Johnston, 2004).

Although the majority of CPGs recommended using the Faces Pain Scale - Revised (Hicks et al., 2001) and there is evidence to suggest its utility in this context, since it was developed for use with children, some adult patients with pain may find the scale patronising. The scale has also been criticised for measuring constructs other than pain intensity, such as pain affect (McGrath, Seifert, Speechley, & Booth,

1996) or mood more generally (Herr, Mobily, Kohout & Wagenaar, 1998), since the faces show emotional expressions from happy to very distressed.

In a study that examined the reliability and validity of the Faces Pain Scale – Revised, the Iowa Pain Thermometer, the Verbal Descriptor Scale and the Numerical Rating Scale, for assessing pain intensity among older adults from ethnic minorities, low correlations were found between the Faces Pain Scale – Revised and all other scales (Ware, Epps, Herr & Packard, 2006), suggesting that it is measuring other variables as well as pain. There are other problems with this scale and with pain assessment scales that use faces generally. For instance, patients are not always able to place the faces in the correct order of pain intensity when asked to rank them (Herr et al., 1998). Similarly, patients often misunderstand the scale as a request to select the face they prefer (e.g. the smiling face that represents no pain) or the face they would like theirs to be (Chambers, Giesbrecht, Craig, Bennett & Huntsman, 1999), and this is difficult to check across a language gap. However, this is likely to be more problematic among patients from countries where there are stronger social norms about whether, how, and to whom it is acceptable to express emotions. For instance, in Thailand there is an increased social pressure to attenuate one's negative emotions, appear happy and not cause distress to others (this is known *Kreng jai*, which means 'awe heart'), particularly to those of senior status (McCarty, Weisz, Wanitromanee, Eastman, Suwanlert, Chaiyasit & Brotman, 1999) such as clinicians.

Irrespective of the pain assessment scale chosen, the scales need to be developed in collaboration with and then further tested on the target population to select the best version and to develop data on reliability and validity. The Brief Pain Inventory (which can be accessed online), for instance, is a good example of thorough work to produce useable, reliable, and valid versions of a pain assessment scale in different languages.

### **Limitations of review**

The current review has several limitations that should be taken into consideration when drawing conclusions from the results. Firstly, the review was limited to CPGs that were published in English or had been translated into English. Given the focus of this review and the limited number of CPGs that met the inclusion criteria, there may be non-English language CPGs with useful information on pain assessment practices for patients who do not share language with the clinician. Despite this, English is a common language that is spoken in many countries worldwide, so it is likely that relevant CPGs from other countries would have been published in English. Another limitation is that the majority of CPGs could only be obtained by searching guideline databases and association websites, and these are not as complete as the electronic databases are for academic literature. Therefore, relevant CPGs on professional association websites not searched may have been missed. Similarly, this review relied on information on CPGs being made publically available (Nuckols et al., 2014), thereby missing two CPGs from association websites that required membership in order to gain access.

Although the non-standard approach used to rate the quality of the CPGs avoided some of the problems with using quality rating scales that provide an overall assessment score, a limitation of this approach is that it cannot be compared to other systematic reviews of CPGs that have used different rating scales to assess quality, such as the AGREE II in its original form. Despite this, neither method of quality rating is perfect and the approach adopted was chosen to balance the cost and benefits of each method.

### **Clinical implications and future research**

The findings from this review suggest that pain assessment among people from ethnic minorities where language differences exist is seriously neglected for such an important concern. Despite over a decade's worth of research demonstrating that

ethnic minority disparities in pain assessment and treatment exist, recommendations from CPGs do not adequately address what can be done to tackle this. Where recommendations are vague or not behaviourally specific (Michie & Johnston, 2004) they are less likely to be implemented by clinicians. The implication of this is that clinicians will be left to improvise, which not only makes patient care inconsistent but increases the likelihood of negative biases operating, such as the tendency to underestimate pain of others (De Ruddere, Goubert, Stevens, Williams, & Crombez, 2013; Kappesser, Williams, & Prkachin, 2006) particularly in patients from ethnic minorities (Drwecki, Moore, Ward, & Prkachin, 2011; Staton et al., 2007) that already disadvantage them.

Similarly, the implications of not having clear guidance on pain assessment in this context can be detrimental to patient wellbeing, particularly within emergency settings where the patient is more likely to be unaccompanied by friends or family who can interpret. For instance, in a study conducted in the USA, patients with limited English proficiency in emergency settings were more likely to experience adverse events (e.g. which ranged from temporary physical harm to death) than English-speaking patients, and this was attributable to communication barriers (Divi, Koss, Schmaltz & Loeb, 2007). Therefore, without clear recommendations to follow, the health needs of this group are at a further disadvantage.

This review also highlights the need for improvements to be made in the presentation of CPGs. For instance, some of the included CPGs were very lengthy (e.g. ANZA & FPA., 2010), and this has been cited as a reason for CPG non-compliance (Carthey, et al., 2011). As a result, CPGs need to be made shorter and more accessible. Examples of how to do this includes using visual, treatment option grids (Elwyn et al., 2013) and easy-read summaries of CPGs like those produced by the NICE (Greenhalgh, et al., 2014). Irrespective of the approach chosen, translated versions for people that speak a language different to that of the CPG should be created.

As the majority of CPG recommendations were based on expert consensus and a small number of studies that were low quality, more research on pain assessment practices and the use of pain scales in different minority groups is needed. Psychometric and linguistic translation (as recommended by Sousa & Rojjanasrirat, 2011) of pain assessment scales with these target groups is optimal. However, this is not always possible due to the financial requirements for translation. To ensure that people being treated for pain (where language differences exist) use the scales in the way clinicians intended, researchers have examined the use of well-established pain scales among particular ethnic groups. For instance, in a study conducted in Refugee camps in Sierra Leone that examined the quality of the Numerical and Verbal Rating Scales for assessing pain (scales were translated into Krio for non-English-speaking patients where necessary) among patients in a post-conflict setting, the majority of patients used the scales consistently as they were intended to be used (Williams, Rajput-Ray, Lassalle, Crombie & Lacoux, 2011). This research demonstrated that patients found it manageable to quantify their pain intensity in this way. Therefore, more research of this kind could be a good starting point.

## **Conclusion**

This current review examined the quality of, and the recommendations provided by, eight CPGs on pain assessment among patients from ethnic minorities who do not share the language of clinical staff. The results were very disappointing. Several of the CPGs were of low quality, and the majority provided limited recommendations that were vague and not behaviourally specific.

Although it is the responsibility of all clinicians to offer comprehensive pain assessment across language and cultural differences, CPGs are written to try to move the field forward to ensure that clinicians are using the best evidenced-based practices available. All of the included CPGs recognised the importance of this and



attempted to address pain assessment in this context. However, none of them concluded that it was absolutely essential as a highest priority to tackle this issue. If they had, this may have influenced funders or government bodies which commission such exercises. Therefore, this is a political issue as much as a research and moral one. Updating the CPGs with the involvement from relevant patient groups or ethnic minority advocacy groups who are concerned with health may be a good place to begin tackling this significant issue.

## References

- Alonso-Coello, P., Irfan, A., Solà, I., Gich, I., Delgado-Noguera, M., Rigau, D., ... Schunemann. (2010). The quality of clinical practice guidelines over the last two decades: A systematic review of guideline appraisal studies. *Quality & Safety in Health Care, 19*, e58. doi:10.1136/qshc.2010.042077
- Anderson, K. O., Green, C. R., & Payne, R. (2009). Racial and ethnic disparities in pain: causes and consequences of unequal care. *Journal of Pain, 10*(12), 1187–1204. doi:10.1016/j.jpain.2009.10.002
- Anderson, K. O., Mendoza, T. R., Valero, V., Richman, S. P., Russell, C., Hurley, J., ... Cleeland. (2000). Minority cancer patients and their providers: Pain management attitudes and practice. *Cancer, 88*, 1929–1938.
- Anderson, K. O., Richman, S. P., Hurley, J., Palos, G., Valero, V., Mendoza, T. R., ... Cleeland. (2002). Cancer pain management among underserved minority outpatients: Perceived needs and barriers to optimal control. *Cancer, 94*, 2295–2304.
- Apkarian, A. V., Hashmi, J. A., & Baliki, M. N. (2011). Pain and the brain: Specificity and plasticity of the brain in clinical chronic pain. *Pain, 152*(Suppl 3), S49–S64. doi:doi:10.1016/j.pain.2010.11.010
- Australian and New Zealand College of Anaesthetists & Faculty of Pain Medicine. (2010). *Acute Pain Management: Scientific evidence*. (P. E. Macintyre, S. A. Schug, D. A. Scott, E. J. Visser, & S. M. Walker, Eds.) (3rd ed.). Melbourne: Australian and New Zealand College of Anaesthetists & Faculty of Pain Medicine. Retrieved from <http://www.fpm.anzca.edu.au/resources/books-and-publications/publications-1/Acute Pain - final version.pdf>
- Björklund, K., & Bergström, S. (2000). Is pelvic pain in pregnancy a welfare complaint? *Acta Obstetricia et Gynecologica Scandinavica, 79*(1), 24–30. doi:10.1034/j.1600-0412.2000.079001024.x

- Booker, S. S., Pasero, C., & Herr, K. A. (2015). Practice recommendations for pain assessment by self-report with African American older adults. *Geriatric Nursing*, 36(1), 67–74. Retrieved from <http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=prem&NEWS=N&AN=25595395>
- Bourke, J. (2014). This won't hurt a bit: The cultural history of pain is a story of ignorance and prejudice. *New Statesman*, 143(5214), 42–45.
- Breitbart, W., Passik, S., McDonald, M. V., Rosenfeld, B., Smith, M., Kaim, M., & Funesti-Esch, J. (1998). Patient-related barriers to pain management in ambulatory AIDS patients. *Pain*, 76, 9–16. doi:10.1016/S0304-3959(98)00018-9
- British Pain Society. (2006). *Pain scales in multiple languages*. Retrieved February 07, 2015, from <https://www.britishpainsociety.org/british-pain-society-publications/pain-scales-in-multiple-languages/>
- British Pain Society. (2010). *Cancer pain management*. London: British Pain Society.
- Brouwers, M. C., Kho, M. E., Browman, G. P., Burgers, J. S., Cluzeau, F., Feder, G., ... Zitzelsberger. (2010). AGREE II: Advancing guideline development, reporting and evaluation in health care. *Canadian Medical Association Journal*, 182(18), E839–E842. doi:10.1016/j.cjlinepi.2010.07.001
- Burgess, D. J., Gravely, A. A., Nelson, D. B., van Ryn, M., Bair, M. J., Kerns, R. D., ... Partin. (2013). A national study of racial differences in pain screening rates in the VA health care system. *Clinical Journal of Pain*, 29(2), 118–123. doi:10.1097/Ajp.0b013e31826a86ae
- Burgess, D. J., van Ryn, M., Crowley-Matoka, M., & Malat, J. (2006). Understanding the provider contribution to race/ethnicity disparities in pain treatment: Insights from dual process models of stereotyping. *Pain Medicine*, 7(2), 119–134. doi:10.1111/j.1526-4637.2006.00105.x
- Campbell, C. M., & Edwards, R. R. (2012). Ethnic differences in pain and pain management. *Pain Management*, 2(2012), 219–230. doi:10.2217/pmt.12.7

- Carr, E. C. J. (1997). Evaluating the use of a pain assessment tool and care plan: A pilot study. *Journal of Advanced Nursing*, 26, 1073–1079.
- Carthey, J., Walker, S., Deelchand, V., Vincent, C., & Griffiths, W. H. (2011). Breaking the rules : Understanding non-compliance with policies and guidelines. *British Medical Journal*, 343, 1–5. doi:10.1136/bmj.d5283
- Chambers, C., Giesbrecht, K., Craig, K., Bennett, S., & Huntsman, E. (1999). A comparison of faces scales for the measurement of pediatric pain: Children's and parents' ratings. *Pain*, 83, 25–35.
- Chen, I., Kurz, J., Pasanen, M., Faselis, C., Panda, M., Staton, L. S., ... Cykert. (2005). Racial differences in opioid use for chronic non-malignant pain. *Journal of General Internal Medicine*, 20, 593–598.
- Cleeland, C. S. (1989). Measurement of pain by subjective report. In C. R. Chapman & J. D. Loeser (Eds.), *Issues in pain measurement: Advances in pain research and therapy* (Eds., pp. 391–403). New York, NY: Raven Press.
- Cleeland, C. S., Gonin, R., Baez, L., Loehrer, P., & Pandya, K. J. (1997). Pain and treatment of pain in minority patients with cancer: The eastern cooperative oncology group minority outpatient pain study. *Annals of Internal Medicine*, 127, 813–816.
- Cleeland, C. S., & Ryan, K. M. (1994). Pain assessment: Global use of the Brief Pain Inventory. *Annals of Academy of Medicine*, 23, 129–138.
- Collins, D. A. (1811). *Practical rules for management and medical treatment of negro slaves, in the sugar colonies*. London: J. Barfield.
- Contreras-Huerta, L. S., Baker, K. S., Reynolds, K. J., Batalha, L., & Cunnington, R. (2013). Racial bias in neural empathic responses to pain. *PLoS ONE*, 8(12). doi:10.1371/journal.pone.0084001
- Crombez, G., Beirens, K., Van Damme, S., Eccleston, C., & Fontaine, J. (2009). The unbearable lightness of somatisation: A systematic review of the concept of

- somatisation in empirical studies of pain. *Pain*, 145(1-2), 31–35.  
doi:10.1016/j.pain.2009.04.006
- Dansie, E. J., & Turk, D. C. (2013). Assessment of patients with chronic pain. *British Journal of Anaesthesia*, 111(1), 19–25. doi:10.1093/bja/aet124
- De Ruddere, L., Goubert, L., Stevens, M. A. L., Deveugele, M., Craig, K. D., & Crombez, G. (2014). Health care professionals' reactions to patient pain: Impact of knowledge about medical evidence and psychosocial influences. *Journal of Pain*, 15(3), 262–270. doi:10.1016/j.jpain.2013.11.002
- De Ruddere, L., Goubert, L., Stevens, M., Williams, C. de C. A., & Crombez, G. (2013). Discounting pain in the absence of medical evidence is explained by negative evaluation of the patient. *Pain*, 154(5), 669–676. doi:10.1016/j.pain.2012.12.018
- Department of Health. (2004). *Guidance on developing local communication support services and strategies*. London: Department of Health.
- Divi, C., Koss, R. G., Schmaltz, S. P., & Loeb, J. M. (2007). Language proficiency and adverse events in US hospitals: A pilot study. *International Journal for Quality in Health Care*, 19(2), 60–67. doi:10.1093/intqhc/mzl069
- Drwecki, B. B., Moore, C. F., Ward, S. E., & Prkachin, K. M. (2011). Reducing racial disparities in pain treatment: The role of empathy and perspective-taking. *Pain*, 152(5), 1001–1006. doi:10.1016/j.pain.2010.12.005
- Edwards, C. L., Fillingim, R. B., & Keefe, F. (2001). Race, ethnicity and pain. *Pain*, 94, 133–137. doi:10.1016/S0304-3959(01)00408-0
- Elwyn, G., Lloyd, A., Joseph-Williams, N., Cording, E., Thomson, R., Durand, M. A., & Edwards, A. (2013). Option Grids: Shared decision making made easier. *Patient Education and Counseling*, 90(2), 207–212.
- Gatchel, R. J., McGeary, D. D., McGeary, C. A., & Lippe, B. (2014). Interdisciplinary chronic pain management: past, present, and future. *The American Psychologist*, 69(2), 119–130. doi:10.1037/a0035514

- Gatchel, R. J., Peng, Y. B., Peters, M. L., Fuchs, P. N., & Turk, D. C. (2010). The biopsychosocial approach to chronic pain: Scientific advances and future directions. *Psychological Bulletin*, 133(4), 581–624. doi:10.1037/0033-2909.133.4.581
- Glasziou, P., & Haynes, B. (2005). The paths from research to improved health outcomes. *ACP Journal Club*, 142(2), A8-A10.
- Goldberg, D. S., & McGee, S. J. (2011). Pain as a global public health priority. *BMC Public Health*, 11(1), 770. doi:10.1186/1471-2458-11-770
- Graham, R. M., Mancher, M., Miller-Wolman, D., Greenfield, S., & Steinberg, E. (2011). *Clinical practice guidelines we can trust*. Washington DC: National Academies Press.
- Green, C. R., Anderson, K. O., Baker, T. A., Campbell, L. C., Decker, S., Fillingim, R. B., ... Vallerand, A. H. (2003). The unequal burden of pain: Confronting racial and ethnic disparities in pain. *Pain Medicine*, 4(3), 277–294.
- Green, C. R., Baker, T. A., Sato, Y., Washington, T. L., & Smith, E. M. (2003). A comparative study of young black and white Americans presenting for management. *The Journal of Pain*, 4(4), 176–183.
- Green, C. R., Baker, T. A., Smith, E. M., & Sato, Y. (2003). The effect of race in older adults presenting for chronic pain management: A comparative study of black and white Americans. *The Journal of Pain*, 4(2), 82–90,.
- Greenhalgh, T., Howick, J., & Maskrey, N. (2014). Evidence based medicine : A movement in crisis? *British Medical Journal*, 348, 1–7. doi:10.1136/bmj.g3725
- Hanson, R., & Gerber, K. (1990). *Coping with chronic pain: a guide to patient self-management*. New York: Guildford Press.
- Heatherley, F. (1883). *Physiological cruelty, or, fact v. fancy: An Inquiry into the vivisection question*. New York: Wiley.
- Herr, K. A., & Garand, L. (2011). Assessment and measurement of pain in older adults. *Clinics in Geriatric Medicine*, 17(3), 1–18.

- Herr, K. A., Mobily, P. R., Kohout, F. J., & Wagenaar, D. (1998). Evaluation of the Faces Pain Scale for use with the elderly. *The Clinical Journal of Pain*, *14*(1), 29–38.
- Hicks, C. L., von Baeyer, C. L., Spafford, P. A., van Korlaar, I., & Goodenough, B. (2001). The Faces Pain Scale - Revised: Toward a common metric in pediatric pain measurement. *Pain*, *93*, 173–183.
- Higgins, J. P. T., Altman, D. G., & Sterne, J. A. C. (2011). Assessing risk of bias in included studies. In Higgins, J. P. T. & S. Green (Eds.), *Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0*. The Cochrane Collaboration. Retrieved from <http://handbook.cochrane.org/>
- Hirsh, A. T., Jensen, M. P., & Robinson, M. E. (2010). Evaluation of nurses' self-insight into their pain assessment and treatment decisions. *Journal of Pain*, *11*(5), 454–461. doi:10.1016/j.jpain.2009.09.004
- Hooten, W. M., Timming, R., Belgrade, M., Gaul, J., Goertz, M., Haake, B., ... Walker, N. (2013). *Assessment and management of chronic pain* (6th ed.). Bloomington, MN: Institute of Clinical Systems Improvement.
- Huang, K. T., Owino, C., Vreeman, R. C., Hagembe, M., Njuguna, F., Strother, R., & Gramelspacher, G. P. (2012). Assessment of the face validity of two pain scales in Kenya: A validation study using cognitive interviewing. *BMC Palliative Care*, *11*(5), 1–9. doi:10.1186/1472-684X-11-5
- Im, E. O. (2008). African-American cancer patients' pain experience. *Cancer Nursing*, *31*(1), 38–46.
- Ingham, J. M., & Folley, K. M. (1998). Pain and the barriers to its relief at the end of life: A lesson for improving end of life health care. *The Hospice Journal*, *13*, 89–100.
- International Association for the Study of Pain. (2012). *Unrelieved pain is a major global healthcare problem*. Retrieved February 21, 2015, from [http://www.efic.org/userfiles/Pain Global Healthcare Problem.pdf](http://www.efic.org/userfiles/Pain%20Global%20Healthcare%20Problem.pdf)

- Jensen, M. P., & Karoly, P. (2011). Self-report scales and procedures for assessing pain in adults. In D. C. Turk & R. Melzack (Eds.), *Handbook of pain assessment* (3rd Ed., pp. 19–41). New York, NY: Guildford Press.
- Kalyadina, S. A., Ionova, T. I., Ivanova, M. O., Uspenskaya, O.S., Kishtovich, A. V., Mendoza, T. R., Guo, H., Novik, A., ... Wang. (2008). Russian Brief Pain Inventory: validation and application in cancer pain. *Journal of Pain Symptom Management*, 35(1), 95–102.
- Kappesser, J., Williams, A. C. de C., & Prkachin, K. M. (2006). Testing two accounts of pain underestimation. *Pain*, 124(1), 109–116.
- Keefe, F. J., Lumley, M. A., Buffington, A. L., Carson, J. W., Studts, J. L., Edwards, C. L., ... (2002). (2002). Changing face of pain: Evolution of pain research in psychosomatic medicine. *Psychosomatic Medicine*, 64(6), 921–938.
- Kim, E. J., & Buschmann, M.T. (2006). Reliability and validity of the Faces Pain Scale with older adults. *International Journal of Nursing Studies*, 43, 447–456. doi:10.1016/j.ijnurstu.2006.01.001
- Kirmayer, L. J., & Young, A. (1998). Culture and somatization: Clinical, epidemiological, and ethnographic perspectives. *Psychosomatic Medicine*, 60, 420–430.
- Klepstad, P., Loge, J.H., Borchgrevink, P. C., Mendoza, T. R., Cleeland C. S., & Kaasa, S. (2002). The Norwegian Brief Pain Inventory questionnaire: Translation and validation in cancer pain patients. *Journal of Pain Symptom Management*, 24(5), 517–525.
- Lasch, K. E. (2000). Culture, pain, and culturally sensitive pain care. *Pain Management Nursing: Official Journal of the American Society of Pain Management Nurses*, 1(3), 16–22. doi:10.1053/jpmn.2000.9761
- Lee, G. Y., Yamada, J., Kyololo, O., Shorkey, A., & Stevens, B. (2014). Pediatric clinical practice guidelines for acute procedural pain: A systematic review. *Pediatrics*, 133, 500–515. doi:10.1542/peds.2013-2744



- Lumley, M. A., Cohen, J. L., Borszcz, G. S., Cano, A., Radcliffe, A. M., Porter, L. S., ... Keefe, F. J. (2011). Pain and emotion: A biopsychosocial review of recent research. *Journal of Clinical Psychology, 67*(9), 942–968. doi:10.1002/jclp.20816
- McCarty, C. A., Weisz, J. R., Wanitromanee, K., Eastman, K. L., Suwanlert, S., Chaiyasit, W., & Brotman, B. E. (1999). Culture, coping, and context: Primary and secondary control among Thai and American youth. *Journal of Child Psychology and Psychiatry, 40*(5), 809–818.
- McCusker, M., Ceronsky, L., Crone, C., Epstein, H., Greene, B., Halvorson, J., ... Setterlun, L. (2013). *Palliative care for adults*. Bloomington, MN: Institute for Clinical Systems Improvement.
- McGrath, P. A., Seifert, C. E., Speechley, K. N., & Booth, J. C. (1996). A new analogue scale for assessing children's pain: An initial validation study. *Pain, 64*, 435–443.
- Meghani, S. H., Byun, E., & Gallagher, R. M. (2012). Time to take stock: A meta-analysis and systematic review of analgesic treatment disparities for pain in the United States. *Pain Medicine, 13*, 150–174. doi:10.1111/j.1526-4637.2011.01310.x
- Merskey, H., & Bogduk, N. (1994). Part III: Pain terms, a current list with definitions and notes on usage. In *Classification of chronic pain: Descriptions of chronic pain syndromes and definitions of pain terms* (2nd ed., pp. 209–214). Seattle: IASP Press. Retrieved from <http://www.iasp-pain.org>.
- Michie, S., & Johnston, M. (2004). Changing clinical behaviour by making guidelines specific. *British Medical Journal, 328*, 343–345. doi:10.1136/qhc.13.5.355
- Monaghan, F. (2015). *Theresa May's hidden British value - monolingualism*. *The Conversation*. Retrieved April 30, 2015, from [http://theconversation.com/theresa-mays-hidden-british-value-monolingualism-39258?utm\\_medium=email&utm\\_campaign=Latest+from+The+Conversation+for+25+March+2015+-](http://theconversation.com/theresa-mays-hidden-british-value-monolingualism-39258?utm_medium=email&utm_campaign=Latest+from+The+Conversation+for+25+March+2015+-)

+2573&utm\_content=Latest+from+The+Conversation+for+25+March+2015+-  
+2573+CID\_986c7bebf5cc7e3558b

Napier, A. D., Ancarno, C., Butler, B., Calabrese, J., Chater, A., Chatterjee, H., ...  
Woolf. (2014). Culture and health. *Lancet*, 384, 1607–39. doi:10.1016/S0140-  
6736(14)61603-2

National Comprehensive Cancer Network. (2014). *Adult cancer pain*. Retrieved  
October 13, 2014, from  
[http://www.nccn.org/professionals/physician\\_gls/pdf/pain.pdf](http://www.nccn.org/professionals/physician_gls/pdf/pain.pdf)

National Health Care for the Homeless Council. (2011). *Adapting your practice:  
Recommendations for the care of homeless adults with chronic non-malignant  
pain*. (P. Wismer, B., Amann, T., Diaz, R., Eisen, D., Elder, N., Ho, C., Hwang,  
S., Johnston, M., Joslyn, M., Kertesz, S., Kushel, M., Preston, C., Solotoroff, R.,  
Thompson, L., Silva, F., Smith, S., Zevin, B., Meinbresse, M., Post, Ed.).  
Nashville, TN: Health Care for the Homeless Clinicians' Network, National Health  
Care for the Homeless Council.

National Institute of Clinical Studies. (2011). *Emergency care acute pain management  
manual*. Canberra: National Health and Medical Research Council.

Nguyen, M., Ugarte, C., Fuller, I., Haas, G., & Portenoy, R. K. (2005). Access to care  
for chronic pain: Racial and ethnic differences. *Journal of Pain*, 6, 301–314.  
doi:doi:10.1016/j.jpain.2004.12.008

Nuckols, T. K., Anderson, L., Popescu, I., Diamant, A. L., Doyle, B., Di Capua, P., &  
Chou, R. (2014). Opioid prescribing: a systematic review and critical appraisal of  
guidelines for chronic pain. *Annals of Internal Medicine*, 160(1), 38–47. Retrieved  
from  
[http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=medi&NEWS=  
N&AN=24217469](http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=medi&NEWS=N&AN=24217469)

Office for National Statistics. (2011). *Census ethnic groups by measure*. Retrieved  
October 16, 2013, from

<http://www.nomisweb.co.uk/census/2011/KS201EW/view/2092957703?cols=measures>

- Patel, S., Peacock, S. M., McKinley, R. K., Carter, D. C., & Watson, P. J. (2008). GPs' experience of managing chronic pain in a south Asian community: A qualitative study of the consultation process. *Family Practice, 25*(2), 71–77.
- Pernick, M. S. (1985). *A calculus of suffering: Pain, professionalism, and anesthesia in nineteenth century America*. New York: Columbia University Press.
- Pope, C. (2003). Resisting evidence: The study of evidence-based medicine as a contemporary social movement. *Health, 7*, 267–282.
- Registered Nurses' Association of Ontario. (2013). *Assessment and management of pain* (3rd ed.). Toronto, ON: Registered Nurses' Association of Ontario. Retrieved from <http://rnao.ca/sites/rnao-ca/files/AssessAndManagementOfPain2014.pdf>
- Roberts, G., Kent, B., Prys, D., & Lewis, R. (2003). Describing chronic pain: Towards bilingual practice. *International Journal of Nursing Studies, 40*, 889–902. doi:10.1016/S0020-7489(03)00055-5
- Saxena, A., Mendoza, T., & Cleeland, C. S. (1999). The assessment of cancer pain in north India: The validation of the Hindi brief pain inventory—BPI-H. *Journal of Pain and Symptom Management, 17*(1), 27–41.
- Sharpe, M., & Williams, A. C. de C. (2002). Treating patients with somatoform pain disorder and hypochondriasis. In D. C. Turk & R. J. Gatchel (Eds.), *Psychological approaches to pain management: A practitioner's handbook* (2nd ed., pp. 515–533). New York: The Guilford Press.
- Siering, U., Eikermann, M., Hausner, E., Hoffmann-Eßer, W., & Neugebauer, E. A. (2013). Appraisal tools for clinical practice guidelines: A systematic review. *PLoS ONE, 8*(12), 1–15. doi:10.1371/journal.pone.0082915
- Sousa, V. D., & Rojjanasrirat, W. (2011). Translation, adaptation and validation of instruments or scales for use in cross-cultural health care research: A clear and

- user-friendly guideline. *Journal of Evaluation in Clinical Practice*, 17, 268–274.  
doi:10.1111/j.1365-2753.2010.01434.x
- Staton, L. J. S., Panda, M., Chen, I., Genao, I., Kurz, J., Pasanen, M., ... Cykert, S. (2007). When race matters: Disagreement in pain perception between patients and their physicians in primary care. *Journal of the National Medical Association*, 99(5), 532–538.
- Stuppy, D. J. (1998). The faces pain scale: Reliability and validity with mature adults. *Applied Nursing Research*, 11(2), 84–89.
- Tait, R. C., & Chibnall, J. T. (2014). Racial/ethnic disparities in the assessment and treatment of pain: psychosocial perspectives. *The American Psychologist*, 69, 131–41. doi:10.1037/a0035204
- Taylor, L. J., & Herr, K. (2003). Pain intensity assessment: A comparison of selected pain intensity scales for use in cognitively intact and cognitively impaired African American older adults. *Pain Management Nursing*, 4(2), 87–95.
- Turk, D. C., & Melzack, R. (2011). The measurement of pain and the assessment of people experiencing pain. In D. C. Turk & R. Melzack (Eds.), *Handbook of pain assessment* (3rd ed., pp. 3–16). New York: Guilford Press.
- Vallerand, A. H., Hasenau, S., Templin, T., & Collins-Bohler, D. (2005). Disparities between black and white patients with cancer pain: the effect of perception of control over pain. *Pain Medicine*, 6, 242–250.
- Ware, L. J., Epps, C. D., Herr, K., & Packard, A. (2006). Evaluation of the revised faces pain scale, verbal descriptor scale, numeric rating scale, and Iowa pain thermometer in older minority adults. *Pain Management Nursing*, 7(3), 117–125.
- Williams, A. C de C., Peña, C. R., & Rice, A. S. C. (2010). Persistent pain in survivors of torture: A cohort study. *Journal of Pain and Symptom Management*, 40(5), 715–722. doi:10.1016/j.jpainsymman.2010.02.018
- Williams, A. C de C., Rajput-Ray, M., Lassalle, X., Crombie, I., & Lacoux, P. (2011). Assessing pain and mood in a poorly resourced country in a post-conflict setting.

*Journal of Pain and Symptom Management*, 42(2), 301–307.

doi:10.1016/j.jpainsymman.2010.11.012

Winnipeg Regional Health Authority. (2012). *Pain assessment and management: Clinical practice guidelines* (2nd ed.). Winnipeg, Manitoba: Winnipeg Regional Health Authority.

Wright, C. (1983). Language and communication problems in an Asian community. *The Journal of the Royal College of General Practitioners*, 33, 101–104.

Yun, Y. H., Mendoza, T. R., Heo, D. S., Yoo, T., Heo, B. Y., Park, H. A., ... Cleeland. (2004). Development of a cancer pain assessment tool in Korea: A validation study of a Korean version of the brief pain inventory. *Oncology*, 66, 439–444. doi:10.1159/000079497

## **Part 2: Empirical paper**

Do pain images used in pain consultations affect clinicians' and patients' nonverbal communication, and patient emotional disclosure?

## Abstract

**Background:** Patients with chronic pain find it hard to convey their experience of pain in medical consultations. Visual images may communicate experience in a way which language cannot. **Aim:** To examine the impact of using images of pain on patients' and clinicians' nonverbal communication and how personal patients' emotional disclosures were during pain consultations. **Method:** Thirty-five video-taped chronic pain consultations were used (17 patients had consultations with images and 18 did not). Ten clinicians conducted consultations in both groups. Using fixed-interval sampling, coders rated perceptions of patients' and clinicians' affiliation and dominance behaviours using the Interpersonal Grid (Moskowitz & Zuroff, 2005); how personal patients' emotional disclosures were; and whether or not the images were actively used in consultations. **Results:** In consultations with images, behavioural correspondence (mirroring behaviour) between patients' and clinicians' positive affiliation behaviours was observed, and patients made more personal emotional disclosures when the images were used compared to when they were not used in the consultation. Behavioural reciprocity (mismatching behaviour indicative of status differences) between patients' and clinicians' dominance behaviours was not observed in either consultation. No differences were found between consultations with and without images for rates of patients' or clinicians' affiliation and dominance behaviours, and patients' emotional disclosures over the course of the consultations. **Conclusions:** Using images in pain consultations largely failed to demonstrate a beneficial impact on the nonverbal communication of patients and clinicians. However, some benefit was found: pain images facilitated patient-clinician behavioural correspondence and patient emotional disclosure. The findings will be used to inform further research on verbal and nonverbal communication in pain consultations and the use of visual images.

## **Introduction**

According to the International Association for Pain (IASP), pain can be described as “an unpleasant sensory and emotional experience, associated with actual or potential tissue damage, or described in terms of such damage” (Merskey & Bogduk, 1994). This definition suggests that a person’s pain should be acknowledged and attended to, irrespective of whether there is physical evidence to determine its presence. Despite this, the invisibility of pain can make it difficult for patients to put their pain experiences into words (Main, 2014). This can cause patients to experience anger and resentment, due to feeling disbelieved and dismissed by clinicians (Pither, 2002).

Chronic pain is a common health problem in the UK that is associated with disability, psychological distress (Williams, Eccleston & Morley, 2012), and increased use of healthcare services (Breivik, Collett, Ventafridda, Cohen & Gallacher, 2006). In terms of conceptualising pain, the gate control model (Melzack & Wall, 1965) highlighted the importance of emotional, sensory and motivational factors within pain experience. This led to the development of the biopsychosocial model of pain, which describes pain as occurring as a result of a dynamic interaction between physiological, psychological and social factors (Gatchel, McGeary, McGeary, & Lippe, 2014). Therefore, appropriate treatment for chronic pain relies heavily on a comprehensive assessment of biological, behavioural and psychosocial aspects of the pain (Dansie & Turk, 2013). This includes assessing the impact of pain on emotional state (e.g. anxiety, depression), as well as how the patient makes sense of his or her pain (Dansie & Turk, 2013). Therefore, communicating pain is pertinent to pain assessment and subsequent treatment.

### **Using visual imagery to communicate pain**

Due to the difficulties in using language to communicate pain (Padfield, 2002; Pither, 2002), alternative media, such as visual imagery, have been explored. For instance, visual images (e.g. paintings) have been shown to aid clinicians’ understanding of



their patients' pain (Wikström, 2003). Similar findings have been observed by Padfield, Janmohamed, Zakrzewska, Pither and Hurwitz (2010), who conducted a study that investigated the use of photographic images (depicting different pain qualities including sensation, temperature etc.) within pain consultations. In this study, the majority of clinicians (including doctors) felt that the images had a positive impact on their communication with patients, as well as leading them to report a greater understanding of patients' experiences of pain (Padfield et al., 2010). Likewise, the majority of patients reported that using pain images within consultations facilitated helpful dialogue with clinicians (Padfield et al., 2010).

The use of images is identified with ideas based in narrative medicine. Narrative medicine highlights the importance of the clinician working alongside the patient, in order to hear their story about the impact of the illness on their lives, as well as attending to their expectations and fears (Charon, 2001). Therefore, images of pain may act as a useful communication tool for eliciting patients' narratives about their pain experiences (Padfield, 2011), which in turn may facilitate discussions with clinicians about the emotional impact of the pain experience (Padfield, 2002, 2003; Padfield et al., 2010; Pither, 2002).

The majority of research in this area has focused on the written narratives of patients. However, despite the proposed benefits, the evidence for narrative medicine is contradictory. In a meta-analysis examining the effectiveness of patient written narratives on health outcomes, although improved physical health outcomes were found, the magnitude of the effects were small (Frisina, Borod & Lepore, 2004). Similarly, in a randomised controlled trial that examined the effects of written narratives for patients with chronic pelvic pain, a small benefit for pain intensity was found, but none were found for pain interference with daily functioning or the affective and sensory components of pain (Norman, Lumley, Dooley & Diamond, 2004). More recent systematic reviews (e.g. Paudyal et al., 2014; Meads & Nouwen, 2005) have found no benefits at all. These findings suggest that for some patients, sharing their

story by discussing the socio-emotional impact of their illness may not be helpful, or patients may be reluctant to fully disclose their experiences (Norman, et al., 2004). In light of these findings, further research in this area is needed.

### **Discussing emotional concerns in medical consultations**

Despite the need for good communication between clinicians and patients, research has consistently shown that acknowledging the emotional experiences of patients in relation to illness is often not achieved, or is given very little attention within current medical practice (e.g. Levinson, Hudak & Tricco, 2013). For instance, among patients with chronic pain, a common recommendation for improving communication in pain consultations is for clinicians to pay greater attention to psychosocial and emotional aspects of the patient's care (Laerum et al., 2006). This is particularly important because chronic pain negatively affects a person's overall quality of life (Laerum et al., 2006). In a systematic review (Levinson et al., 2013) of the strengths and weaknesses of surgeon-patient communication, several of the included studies found that surgeons spent minimal amounts of time discussing patient concerns (e.g. emotional experiences, social factors) that were unrelated to medical issues (Kain et al., 2009; Levinson & Chaumeton, 1999; Roter, Geller, Bernhardt, Larson, & Doksum, 1999; van Dulmen & Bensing, 2000). Similarly, in a study that investigated opportunities for empathic interactions (within audio-recorded consultations) between oncology surgeons and patients with lung cancer, although patients presented surgeons with 384 empathic opportunities (patient statements that require an empathic response), surgeons responded empathically only 10% of the time (Morse, Edwardsen & Gordon, 2008). This was usually towards the end of the consultation, even though the patients had expressed concerns throughout (Morse, et al., 2008).

Patients' concerns about the nature of their health may cause them to experience a range of negative emotions (e.g. sadness, anger, worry etc.) that can have significant impact on their psychological wellbeing (Salmon, 2006). Although

disclosing emotions may lead to a temporary state of increased distress, many patients report that this dissipates after disclosure (Main, Buchbinder, Porcheret, & Foster, 2010). Therefore, discussing a patient's emotional experience within medical consultations can help patients to find ways to regulate difficult emotions (Street, Makoul, Arora, & Epstein, 2009), which in turn may reduce distress (Duric, et al., 2003).

In a study examining GP responses to emotions among women with severe menstrual pain (Verheul, Sanders & Bensing, 2010), GPs were either 1) warm and empathic or cold and formal in their communication style; and either 2) raised positive expectations (e.g. GPs told patients that non-steroidal anti-inflammatory drugs (NSAIDs) reduced menstrual pain), or raised uncertain expectations of pain relief (e.g. GPs expressed their uncertainty of the effectiveness of using NSAIDs for menstrual pain). When GPs were warm and empathic, and gave positive expectations of NSAIDs, there was a significant decrease in state anxiety among patients and an overall reduction in menstrual pain (Verheul et al., 2010). Similarly, Adams, Cimino, Arnold and Anderson (2012) examined how clinicians responded to patients' expressions of negative emotions within a hospital (emergency department) admission encounter, and what impact this had on subsequent communication. Clinicians' responses were put into three categories: 'away' responses (e.g. changing the subject) focused the conversation away from the patients' emotion; 'neutral' responses (e.g. restating what the patient had said) focused the conversation neither towards nor away from discussions of emotions; and 'toward' responses (e.g. showing empathy) focused the conversation towards discussions about patients' emotions (Adams et al., 2012). Neutral and toward responses from clinicians encouraged patients to continue to discuss their emotional experiences (e.g. worries) within the medical encounter; led patients to disclose information they had not been prompted to discuss (e.g. spiritual and social issues); led to greater clinician-patient alignment, and shared treatment goals; and led clinicians to be more supportive and empathic

towards patients (Adams et al., 2012). Clinician responses that moved 'away' from patients' discussions of emotions negatively affected the clinician-patient relationship, by creating more distance between both parties, as well as an exchange of antagonistic remarks (Adams et al., 2012; Finset, 2012).

In relation to chronic pain, patients often feel dissatisfied and deterred from making emotional disclosures when they feel communication is poor, or that their pain has not been understood (Padfield et al., 2010; Pither, 2002). This highlights the importance of discussing and acknowledging a patient's emotional experience within pain consultations. Doing so may help facilitate rapport and enhance a patient's faith in the clinician treating them and the wider healthcare system (Adams et al., 2012).

### **Communication between clinicians and patients**

Communication between clinicians and patients is an area that has received attention within the literature, particularly doctor-patient communication in primary care. Some studies have reported that the quality of the communication is positively associated with health outcomes, patient satisfaction and treatment adherence (Hall, Roter & Katz, 1988; Roter, Hall & Katz, 1988; Stewart, 1995). Good communication between clinicians and patients leads to better identification of a patient's needs; provides a means of offering patients the comprehensive medical information they require (Ha, Anat & Longnecker, 2010); and ensures that patients can appropriately act on any treatment recommendations they receive (Weinman, 2007). This supports some of the ideas proposed by De Haes and Bensing's (2009) model of medical communication, which identifies six key features of good doctor-patient communication: 1) fostering the doctor-patient relationship; 2) gaining information from the patient; 3) providing the patient with relevant information about their presenting symptoms; 4) facilitating shared decision making, (5) enabling health behaviours (e.g. that coincide with the treatment plan); and 6) responding to patients' expressions of affect. The above features have an impact on proximal (e.g. patient

satisfaction, improved doctor-patient communication), immediate (e.g. patient adherence with treatment recommendations) and distal factors (e.g. improved patient health outcomes) (De Haes & Bensing, 2009). Good communication should also involve patients taking more of an active role in the consultation process (Harrington, Noble & Newton, 2004). In a systematic review of interventions aimed at improving doctor-patient communication by increasing patient participation, interventions that encouraged patients to ask doctors questions when necessary and clarify any information given to ensure understanding, were helpful in improving communication (Harrington et al., 2004)

The most pertinent feature of good communication in pain consultations desired by patients is that their pain is acknowledged and taken seriously by doctors (Laerum, Indahl & Skouen, 2006). Patients favoured patient-centred communication, whereby doctors would continually seek out their perspectives or preferences within the consultation (Laerum et al., 2006). Patients also wanted to be given jargon-free explanations for the causes of their pain, and given reassurance from doctors as and when necessary (Laerum et al., 2006). Therefore, for chronic pain, although patient participation and patient-centred communication is important, the extent to which patients feel that their pain has been believed by the treating clinician outweighs this (Padfield, 2002; Pither, 2002).

### **Nonverbal communication within a medical context**

Nonverbal communication is defined as any behaviour, whether intentional or unintentional (Finset & Del Piccolo, 2011) with no linguistic content (Knapp & Hall, 2002). Within medical consultations, analysis of nonverbal communication can provide insight into how the clinician's behaviour influences the patient and how the patient's behaviour influences the clinician. Nonverbal communication has also been found to play an important role in conveying the affective components of communication in medical consultations (Finset & Del Piccolo, 2011), such as

expressions of empathy (Roter, Frankel, Hall & Sluyter, 2006). Despite the importance of nonverbal communication in interactions, the literature has focused mainly on verbal communication (Mast, 2007). One possible reason for this is that measuring nonverbal communication relies on directly observing (e.g. via video or audio recordings) clinical interactions (Henry, Fuhrel-Forbis, Rogers & Eggly, 2012), which can be time consuming and intrusive (Albrecht, Penner, Cline, Eggly & Ruckdeschel, 2009). Similarly, many nonverbal behaviours are subtle and are often displayed without the participant's conscious awareness (Cappella & Schreiber, 2006), making it difficult to reliably measure.

Nonverbal communication can be assessed on two interpersonal dimensions, affiliation and dominance (Moskowitz & Zuroff, 2005). Affiliation refers to how individuals behave towards one another during an interaction (Kiesler, 1996) on a dimension from friendly to hostile; dominance refers to how individuals behave towards each other on a dimension from dominant to submissive, and is also used to describe an individual's position within a social hierarchy (Burgoon & Dunbar, 2000). Nonverbal behaviours that signal high affiliation include close interpersonal distance between interactional partners, forward lean, open posture of arms and legs, direct gaze towards the partner's face, smiling, head nodding, speaking in a soft tone and pleasant facial expressions (Kiesler & Auerbach, 2003). Behaviours signalling high affiliation are likely to be mirrored (e.g. both partners in the interaction simultaneously nodding their heads) if there is a desire for interpersonal closeness and interaction (Lakin & Chartrand, 2003). Nonverbal behaviours signalling low affiliation include positioning the body away from one's interactional partner (Schermyly & Scholl, 2012), showing impatience (e.g. ignoring or not responding to emotional expression, talking quickly, huffing) and raising one's voice (Moskowitz, 1994). High dominance behaviours include asymmetrical arms and legs, interrupting the other (Kiesler & Auerbach, 2003), postural expansion (taking up a large amount of space), backwards lean (Mehrabian, 1969) and speaking in a clear firm voice (Moskowitz, 1994). Low

dominance behaviours include postural constriction (shrinking body posture), speech errors (stuttering, repeating words), and speaking quietly (Tiedens & Fragale 2003). A detailed description of the different behaviours signalling high and low affiliation and dominance behaviours and the references from independent investigations (where a number of these behaviours have been validated) is provided in Schermuly and Scholl (2012).

The extent to which the behaviour of two individuals in a dyad fit with one another is known as interpersonal complementarity (Tracey, Ryan & Jaschik-Herman, 2001). The interpersonal circumplex model offers an empirically supported framework for analysing interpersonal complementarity within clinician-patient interactions (Kiesler & Auerbach, 2003). The model postulates that complementarity occurs via behavioural correspondence on the affiliation axis (i.e. high affiliation behaviours invites high affiliation behaviours from the other, and low affiliation behaviours invites low affiliation behaviours from the other), and behavioural reciprocity via the dominance axis (i.e. high dominance behaviours elicits low dominance behaviours from the other) (Kiesler & Auerbach 2003).

Behavioural correspondence facilitates rapport and suggests increased liking for the other (Cialdini, 2001). Behavioural reciprocity is indicative of status differences, and within clinician-patient communication high dominance behaviours are generally displayed by the clinician and low dominance behaviours are generally displayed by the patient (Street & Buller, 1987). For instance, in a study that investigated nonverbal communication of clinicians and patients during medical consultations (Street & Buller, 1987), patients mirrored (behavioural correspondence) clinician behaviours signalling high affiliation (e.g. the more the clinician gazed the more the patient gazed), and did not mirror (behavioural reciprocity) clinician behaviours signalling high dominance (e.g. when clinicians took longer speaking turns, patients spoke less).

The majority of research in this area has investigated patient and clinician affiliation and dominance behaviours in relation to patient satisfaction: which has

demonstrated that high clinician affiliation behaviours (Bensing, 1991); mutual levels of clinician and patient affiliation behaviours (Bertakis, Roter & Putnam, 1991); and less clinician dominance (Bertakis et al., 1991), are all positively associated with greater patient satisfaction with medical care. Nonverbal clinician behaviours signalling high affiliation are also positively associated with treatment adherence (Guéguen, Meineri & Charles-Sire, 2010; Aruguete & Roberts, 2002).

### **Rationale for the study**

One of the key barriers of optimal pain management is asserted by patients to be ineffective communication about pain with clinicians (Dobkin, Sita, & Sewitch, 2006; Sale, Gignac, & Hawker, 2006). In relation to patients with chronic pain, research suggests that a breakdown in communication can occur, due to patients feeling stigmatised by their condition and clinicians feeling powerless to intervene (Kenny, 2004). Using visual imagery to depict qualities of a patient's pain is one method researchers (e.g. Padfield, 2011; Padfield et al., 2010) have found that patients believe could help in improving communication with clinicians.

The current study builds on work by Padfield et al. (2010) and Padfield, Zakrzewska and Williams (2015). Using questionnaire methods, Padfield et al. (2010) examined the experiences of patients and clinicians, half of whom used photographic images that depicted qualities of and metaphors for pain as part of the consultation process, and conducted a qualitative analysis of their responses. Patients' and clinicians' responses fell into four main themes: 1) a broadening of verbal dialogue, predominantly a deepened discussion about the emotional impact of the patient's pain experience; 2) a sense of there being an improvement in the clinician-patient relationship; 3) the limitations of using the pain images (e.g. the images failed to cover all qualities of pain that patients experienced); and 4) the practical benefits of using pain images in consultations in the future.



The follow-up study by Padfield et al. (2015) compared the ratings given by chronic pain patients and clinicians of their consultation experiences with and without photographic pain images, to determine whether images led to greater satisfaction within pain consultations, particularly with communication. Although both patients and clinicians reported that the use of images enhanced the consultation, no significant differences in ratings were found between the ratings of patients who had consultations with images compared to those without for satisfaction with the consultation; rapport with clinician; clinician understanding of pain; how well they felt able to communicate their pain; and success at arriving at a treatment plan. Similarly, clinician ratings (overall satisfaction; rapport with patient; how well they understood the patient's pain; how well the patient felt understood; success at arriving at a treatment plan; and confidence in the plan) did not differ for consultations conducted with images when compared to those without images. However, ratings were generally high in both sets of consultations, producing little variance, and this may have obscured small differences. Similarly, the authors suggested that the images may have had an impact on clinician-patient nonverbal communication, which was beyond the scope of their study and therefore required further exploration.

As nonverbal communication is pertinent during displays of affect, and using images of pain within pain consultations has been found to facilitate communication about the emotional impact of patients' pain experiences (Padfield et al., 2010), the current study will explore the effects of using photographic pain images on the nonverbal communication of patients and clinicians, and on patient emotional disclosures (about pain and non-pain-related issues). The study will address the following research questions:

*Questions 1 - 2:*

Is there a difference between consultations with and without images in behavioural correspondence (between patients' and clinicians' affiliation behaviours) and

behavioural reciprocity (between patients' and clinicians' dominance behaviours) over the course of the consultations?

*Questions 3 – 5:*

Is there a difference between consultations with and without images (between-subjects comparison) in patients' affiliation and dominance behaviours, and how personal patients' emotional disclosures are over the course of the consultations?

*Questions 6 – 7:*

Is there a difference between consultations with and without images (within-subjects comparison) in clinicians' affiliation and dominance behaviours over the course of the consultations?

*Question 8:*

In consultations with images, do patients make more personal emotional disclosures when the images are present and used compared to when they are present but not used (within-subjects comparison)?

## **Method**

### **Overview**

The current study used existing data from an ongoing larger study that has been registered (NIHR CRN Clinical Research Portfolio ID no 7451). Similarly, the current data set of video-taped consultations has been used in previous research by Padfield et al. (2010, 2015). Therefore, no new data was collected for this study.

### **Participants**

Participants were included in the study if they were English-speaking, aged 18 and above, experiencing chronic pain and had the capacity to consent to participate in the

research. Participants who did not consent to having their consultation video recorded were excluded.

The participants recruited for the study were 38 chronic pain patients, awaiting an initial assessment (of their pain) within a specialist pain clinic at an inner London teaching hospital. Eleven clinicians who worked in the pain clinic were also recruited. As the production of the images was still in progress at the start of recruitment, patients in the first round conducted their consultations (with clinicians) without pain images (control group) and patients in the second round conducted their consultations with the pain images (image group) once they were ready. Three control consultations were not included in this study. Two consultations were dropped because the clinician did not conduct any consultations with images. This was because she left the clinic before round two had begun. The third consultation was dropped because its recording was unavailable. Thirty-five clinician-patient dyads in total were therefore included in this study. Eighteen patients had consultations without images and 17 patients had consultations with images. Ten clinicians (6 pain specialists; 1 surgeon; 1 neurologist; 1 psychologist; and 1 pain physiotherapist) conducted all consultations and did at least one consultation with and without images.

### **Power analysis**

A power analysis was conducted using G\*Power 3 (Faul, Erdfelder, Lang & Buchner, 2007) to determine the sample size needed to detect differences in patients' affiliation and dominance behaviours between the image and control groups over the course of the consultations. Cohen's  $f$  values of .03 (small effect) for affiliation and 1.81 (large effect) for dominance were obtained from a study by Moskowitz and Zuroff (2005). The power calculation at alpha of .05 and desired power of 0.8, yielded a sample size of 780 to detect an effect of consultation type on affiliation behaviours, and a sample size of four to detect an effect of consultation type on dominance behaviours. Obtaining a sample size of 780 was not feasible for this DClinPsy project. Similarly,

as the effect size was particularly small it may not be clinically meaningful within the current study's patient and clinician population.

## **Apparatus and materials**

### *Pain images*

Fifty-four images (measuring 142 x 105mm) that were designed to metaphorically depict qualities of patients' pain (Padfield, 2003) were used for the image group. The photographic images predominantly featured objects that were representative of pain experience. For instance, sparks between electrical wires (see figure 1), or a knife piercing through a strawberry (see figure 2) with red juice pouring out. However, some of the images were more symbolic, abstract and ambiguous, which allowed for the projection of different emotions on to the image, which were not necessarily the same for any two viewers (Padfield et al., 2015). Despite this, some of the images could be deemed by the viewer as both representative of pain experience and symbolic. For instance, even apparently literal images such as barbed wire can have associations such as torture (Amnesty International logo [www.amnesty.org.uk/](http://www.amnesty.org.uk/)) that may be conveyed intentionally or unintentionally as part of the pain experience (Padfield et al., 2015).

The photographic images were co-created by a trained artist Deborah Padfield (DP, Research Associate) and five patients with chronic facial pain (not included in this study). The images were laminated and presented as separate cards.

### *Recorded consultations*

Ceiling mounted cameras (operated by the 'SMOTS camera system') within the consultation rooms were used to record all consultations. These cameras were controlled from a central AV room.



*Figure 1. Photograph by DP, from the series Perceptions of Pain, 2001-2006.*



*Figure 2. Photograph by DP, from the series Perceptions of Pain, 2001-2006.*

### *Interpersonal grid*

The interpersonal grid (IG) was used to assess the perceptions of patients' and clinicians' affiliation and dominance behaviours across the consultations, and has good reliability and validity (Moskowitz & Zuroff, 2005). Using multilevel modelling (maximum likelihood estimation), validity was investigated in Moskowitz and Zuroff's (2005) study by assessing the effect of perceived affiliation and dominance behaviours (as measured by the IG) on portrayed affiliation and dominance behaviours (displayed by actors in vignettes of supervisors giving feedback to employees). The results demonstrated that IG ratings of perceived affiliation were higher when higher levels of affiliation were portrayed by actors ( $F(1, 2545) = 1,696.98, p = .001$ ). Similarly, IG ratings of perceived dominance behaviours were

higher when higher levels of dominance behaviours were portrayed by actors ( $F(1, 2545) = 4,397.84, p = .001$ ).

Using the intraclass correlation coefficient (ICC), Moskowitz and Zuroff (2005) also assessed the correlation between perceiver's affiliation and dominance scores across three different time points. Low correlations ( $<0.75$ ) for affiliation (ICC = .40) and dominance (ICC = .45) were found, which demonstrates the IG's sensitivity to changes in affiliation and dominance behaviours of the person being perceived over time.

The coders in the current study rated the behaviours outlined in Figures 3 and 4. The IG (Appendix 1) is an 11x11 square grid, which represents affiliation on the horizontal axis and dominance on the vertical axis. The original labels used to define the affiliation axis were warm-agreeable and cold-quarrelsome. However, for simplicity the terms positive affiliation and negative affiliation were used. Similarly, the original labels used to define the dominance axis (assured-dominant and unassured-submissive) were changed to positive dominance and negative dominance.

Rating behaviours signalling affiliation and dominance involved four steps. First, coders observed the nonverbal behaviours displayed by patients and clinicians; second, they determined the observed behaviours' level of affiliation (positive vs. negative) and dominance (positive vs. negative); third, they decided whether the descriptive word in the corner of the grid best described the behaviour they had rated; and finally, they placed an X in the appropriate box on the grid to confirm their rating. Patient and clinician behaviours that signalled positive affiliation and positive dominance were classed as 'engaging' (upper-right of grid); behaviours that signalled positive affiliation and negative dominance were classed as 'deferring' (lower-right of grid); behaviours that signalled negative affiliation and negative dominance were classed as 'withdrawn' (lower-left of grid); and behaviours that signalled negative affiliation and positive dominance were classed as 'critical' (upper-left of grid).

*Scoring.* Each participant in the dyad received an affiliation score and a dominance score, which ranged from -5 to 5. For affiliation, scores above 0 were interpreted as positive affiliation behaviours and scores below 0 were interpreted as negative affiliation behaviours. Similarly, for dominance, scores above 0 were interpreted as positive dominance behaviours and scores below 0 were interpreted as negative dominance behaviours. For positive affiliation, scores of 0 were interpreted as neutral (whereby behaviours were not positive or negative on affiliation); scores at the lower end of the positive scale were interpreted as low, positive affiliation; scores within the mid-range of the positive scale were interpreted as moderate, positive affiliation; and scores at the higher end of the positive scale were interpreted as high, positive affiliation. The same scale was used to interpret negative affiliation, positive dominance, and negative dominance scores. Higher scores indicated greater positive affiliation or dominance behaviours.

<b>BEHAVIOURS SIGNALLING AFFILIATION</b>	
<b><u>Positive affiliation behaviours</u></b>	
<i>Facial expression or glance</i>	
<ul style="list-style-type: none"> <li>• Smiling</li> <li>• Eye gaze</li> </ul>	
<i>Body posture</i>	
<ul style="list-style-type: none"> <li>• Forward lean (does the patient/clinician lean towards the other)</li> <li>• Small interpersonal distance between other (vs. clinician and patient sitting far away from each other)</li> </ul>	
<i>Paralanguage</i>	
<ul style="list-style-type: none"> <li>• Laughing with the other</li> <li>• To speak tenderly</li> </ul>	
<i>Whole body acts</i>	
<ul style="list-style-type: none"> <li>• standing up for patient</li> <li>• To offer someone something to drink/ tissues etc.</li> <li>• Head nodding</li> </ul>	
<b><u>Negative affiliation behaviours</u></b>	
<i>Facial expression</i>	
<ul style="list-style-type: none"> <li>• Frowning</li> </ul>	
<i>Body posture</i>	
<ul style="list-style-type: none"> <li>• To turn away from someone (e.g. having your back faced to someone)</li> <li>• To show impatience (not responding to expressions of emotion, ignoring huffing, sighing, tapping of hands, thigh).</li> </ul>	

Figure 3. Behaviours coders rated that signalled affiliation

## BEHAVIOURS SIGNALLING DOMINANCE

### Positive dominance behaviours

#### *Body posture*

- Asymmetrical arms/legs
- Postural expansion (does the patient/clinician take up a large amount of space in the room?)
- Backwards lean (does the patient/clinician lean away from the other?)
- Sideways lean of torso
- Big gestures
- Eye gaze when speaking to the other, but avoiding gaze and speaking when doing a task

#### *Paralanguage*

- Speaking in a clear firm voice
- Interrupting (speaking over the person)
- To speak loudly

### Negative dominance behaviours

#### *Facial expression or glance*

- Object or self-manipulation (e.g. fidgeting with a pen or scraping at the face while talking)
- To avoid the others' gaze

#### *Body posture*

- Postural constriction - does the patient/clinician take up small amount of space in the room

#### *Paralanguage*

- Speaking in a quiet voice
- Speak with errors (stuttering, repeating words)
- To heighten voice

Figure 4. Behaviours coders rated that signalled dominance

### *Patient emotional disclosure*

Coders rated how personal the patients' emotional disclosures were (about pain or non-pain issues) on a 5-point scale (0 = no disclosure, 1 = not personal; 2 = somewhat personal; 3 = moderately personal; and 4 = extremely personal). Higher scores indicated greater intimacy of the disclosure. Ratings of emotional disclosure were based on what the patient said (e.g. the actual disclosure); the patient's use of emotional descriptors (e.g. angry, sad); and the patient's nonverbal behaviour at the time of disclosure (e.g. avoiding eye contact with clinician, crying).

### *Image status*

In the image group, coders rated the status of the images within the consultations. This was coded as 'images present and used' or 'images present and not used'.



## **Design and procedure**

A quasi-experimental, repeated-measures design was adopted. The video-taped consultations were of clinicians conducting assessments of patients' chronic pain. Each consultation was the first at that pain clinic for that patient. Patients in the image group were each shown all 54 pain images 20 minutes before their consultation start time. They were instructed to look through all of the images and select those (as many or as few as they wanted) that they felt related to their pain and/or resonated with their experience of pain to take into the consultation. Patients were instructed to use the images in the consultation if and when they chose to.

The cameras in the consultation rooms were positioned at an overall distance (i.e. horizontal and vertical) of approximately 12ft away from the patients and clinicians. The camera was positioned so that in each consultation the patient's face and body, as well as the space between the patient and the clinician (i.e. the clinician's desk) were always visible. As the taping never stopped, DP provided the technicians in the central AV room with the start and end times of each consultation. From this, the consultations were exported onto an encrypted external hard drive.

### *Sampling method*

In order to analyse the impact of the pain images on the nonverbal communication of patients and clinicians and their impact on how personal patients' emotional disclosures were, segments of the consultation were sampled using fixed-interval sampling. The first minute of every 5 minutes, of all 35 consultations, was selected for coding (patients' affiliation and dominance behaviours, clinicians' affiliation and dominance behaviours, patients' emotional disclosures, and image status). Each consultation had a maximum of 12 segments in total. Some consultations were shorter and therefore had fewer than 12 segments. There were two reasons for this: first, some clinicians conducted shorter consultations and second, the coders stopped

rating during patient medical examinations when the clinicians and patients were out of view of the camera.

#### *The coders and Inter-rater reliability*

The coders were the author, Judy Addai-Davis (Trainee Clinical Psychologist) and Tom Chadwick (Research Assistant), an MSc student who was familiar with the study and had been working as part of the research team for over a year. The coders each rated two-thirds of the consultations, so that one third of the consultations (13 in total) had two codes for checking inter-rater reliability. Before rating the consultations the coders engaged in a practice period (across 3 days) whereby they rated the three consultations that were excluded from the study. This was to allow the coders to familiarise themselves with rating behaviour using the interpersonal grid. Differences were discussed (and occasionally segments of the recordings were watched again) until consensus was reached: six differences were resolved for level of patient affiliation; eight differences were resolved for patient dominance; three differences were resolved for level of clinician affiliation; and nine differences were resolved for level of clinician dominance.

The inter-rater reliability between the coders' ratings was assessed using a two-way mixed, consistency, average-measures, ICC. The ICC interprets the agreement between coders ratings as high ( $>0.90$ ), moderate (0.75 to 0.90) or low ( $<0.75$ ). The results from the ICC analysis demonstrated high consistency between the coders' ratings for patient affiliation behaviours, ICC = .97, 95% CI [0.96, 0.98]; patient dominance behaviours, ICC = .96, 95% CI [0.95, 0.97]; clinician affiliation behaviours, ICC = .95, 95% CI [0.93, 0.97]; clinician dominance behaviours, ICC = .98, 95% CI [0.97, 0.98]; and how personal the patients' emotional disclosures were, ICC = .96, 95% CI [0.95, 0.97].

### *Ethical considerations*

Ethical approval has already been obtained for this study (see Appendix 2 for favourable opinion ethical approval letter) permitting viewing of the videos by members of the research team.

## **Data analysis**

### **Demographic analysis**

For demographic comparisons between patients in the image and control groups, chi-squared tests (Fisher's exact test was employed if the cell count >5) and Mann-Whitney U tests (for data not normally distributed) were used.

### **Consultation analysis**

For comparisons between the characteristics of the image and control consultations (e.g. consultation length) t - tests were used. In the image group, Spearman's rank correlations were used to calculate associations between the number of images used and the time spent on them, and the number of images used and the length of the consultation because the data was not normally distributed.

### **Behavioural correspondence and reciprocity analysis**

Graphs were used to visually illustrate the distribution of patients and clinicians mean scores for affiliation and dominance behaviours in the image and control groups, over the course of the consultations (Figures 5 - 8). Graphs display the positive scale only, as all patients' and clinicians' mean scores were within the positive affiliation and dominance ranges over the course of the consultations.

This was tested statistically by examining the level of behavioural correspondence between patients' and clinicians' mean scores for affiliation behaviours and behavioural reciprocity between patients' and clinicians' mean scores for dominance behaviours (in both groups). This involved two steps. First, the

differences in mean affiliation scores for each patient and clinician at each time segment were calculated (e.g. mean patient affiliation score at time 2 – mean patient affiliation score at time 1). The same procedure was followed for patients' and clinicians' dominance scores. These were the 'change scores'. Second, to determine behavioural correspondence, Pearson correlations were conducted to calculate associations between the patients' and clinicians' 'change scores' for affiliation. To determine behavioural reciprocity, Pearson correlations were conducted to calculate associations between patients' and clinicians' 'change scores' for dominance. Pearson correlations were used because patients' and clinicians' 'change' scores were normally distributed.

### **Between-subjects comparisons over the course of consultations**

Graphs were used to visually illustrate the distribution of mean scores at each segment for patients' affiliation and dominance behaviours and how personal patients' emotional disclosures were for the image group against the control group (see Figures 9-11). Graphs display the positive scale only, as all patients' and clinicians' mean scores were within the positive affiliation and dominance ranges over the course of the consultations.

Multilevel modelling was used to statistically analyse these comparisons over the course of the consultations. This was because the current study adopted a repeated-measures design and had missing data (e.g. some consultations had fewer segments), due to differences in consultation durations. Using the maximum likelihood estimation, six multilevel models were computed in SPSS (version 22). An autoregressive covariance structure, which suggests that there is greater correlation between observations that are closer together in time compared to observations that are further away from one another, was used to model the within-subjects residuals (Roche, Pincus, Hyde, Conroy & Ram, 2013). Between-subjects residuals were modelled using the variance components structure.

The overall fit of the multilevel model is assessed using the chi-square likelihood ratio test, whereby the smaller the value of the -2 log-likelihood (-2LL) the better the fit of the model. To compare the fit of different models, the author started with a basic model where all the effects were fixed, and then included random parameters of interest in the study (Field, 2013). For this study, the basic model included fixed effects of patient and consultation type; and the parameters which were varied to build different models were fixed effects of segment (1-12), the interaction between consultation type and segment, and the random parameters of patient and segment.

The change in the -2LL was calculated (with the change in degrees of freedom), and was assessed against the critical values for the chi square statistic to assess which model provided the best fit. If this is significant, it suggests that the new model is significantly improved, indicating a better fit by incorporating the additional parameters. The -2LL is the most reliable statistic to use to indicate whether the changes in models are significant (Field, 2013). This statistical procedure provides parameter estimates where the direction of the coefficients (i.e. positive or negative) indicates the direction of the relationship. There are no provided cut off points for assessing the coefficients, but if models provide similar sizes and direction of effects, the simpler model is assumed to be a better fit (Field, 2013).

### **Within-subjects comparisons over the course of the consultations**

Graphs were used to visually illustrate the distribution of mean scores at each segment for clinicians' affiliation and dominance behaviours in the image group against the control group (Figures 12-13). Graphs display the positive scale only, as all patients' and clinicians' mean scores were within the positive affiliation and dominance ranges over the course of the consultations. Multilevel modelling was used to statistically test this. Similarly, multilevel modelling was used to assess

whether there was a significant effect of image status on how personal patients' emotional disclosures were (image group only).

## Results

### Patient and clinician demographics

A description of patient characteristics across the two groups can be found in Table 1. The duration of patients' chronic pain was a median of 9 years (the interquartile range was 3-15 years). This data was missing for two patients. Details of ethnicity were not collected consistently and therefore have not been included.

Of the 10 included clinicians six were male and four were female. Clinicians had been practicing for a mean duration of 20 years ( $SD = 10$ , ranging between 3 and 36 years). Clinicians completed two, three, or four consultations. Three clinicians did one consultation with images and seven did two. Two clinicians did one consultation without images, seven did two, and one did three. No biases were found in allocation to consultations with and without images for patient gender, patient age (see Table 1) and patients' pain duration in years ( $U = 115.00$ ,  $p = .465$ , n.s.).

Table 1

#### *Patient demographics*

	Image group (n = 17)	Control group (n = 18)	$X^2$	df	$p$
	n (%)	n (%)			
Gender					
Male	7 (41.20)	7 (38.90)	.02	1	.890
Female	10 (58.80)	11 (61.10)			
Age					
25-40	6 (35.30)	5 (27.80)	2.67 <sup>a</sup>	2	.291
41-60	5 (29.40)	10 (55.60)			
Over 60	6 (35.30)	3 (16.70)			

df = Degrees of Freedom

<sup>a</sup> Indicates Fishers Exact test, other value is  $X^2$

## **Consultations**

The mean duration of recorded consultations was 63 minutes ( $SD = 15$ ): the shortest was 17 minutes and the longest was 95 minutes. The mean consultation time was 62 minutes ( $SD = 12$ ) for the image group and 65 minutes ( $SD = 17$ ) for the control group: no significant difference ( $t(359) = -1.83, p = .069, n.s.$ ) was found.

### *Image use in consultations*

In the image group, patients each selected a minimum of two and a maximum of 14 images for use in the consultations (median of 6). The number of instances the images were used throughout each of the consultations ranged from 1 to 3. The mean time spent on the images was 4 minutes 45 seconds ( $SD = 2$  minutes 28 seconds) and this ranged from 1 minute 16 seconds to 10 minute 22 seconds. No relationships were found between the number of images used in the consultation and the time spent on them ( $r = -.02, p = .936, n.s.$ ), and between the number of images used and the length of the consultations ( $r = .15, p = .579, n.s.$ ).

## **Behavioural correspondence of affiliation behaviours**

In the image group, a significant positive correlation was found between patients' and clinicians' 'change scores' on affiliation ( $r = .759, p = .007$ ). This means that over the course of the image consultations positive affiliation behaviours displayed by patient were associated with positive affiliation behaviours displayed by the clinician, which is indicative of mirroring behaviour. In the control group, no correlation was found between patients' and clinicians' 'change scores' for affiliation ( $r = .005, p = .988, n.s.$ ), which suggests a lack of mirroring behaviour between patients' and clinicians' positive affiliation behaviours. Therefore, behavioural correspondence between patients' and clinicians' positive affiliation behaviours was observed in the image group only.

Mean patient and clinician rating scores for affiliation behaviours

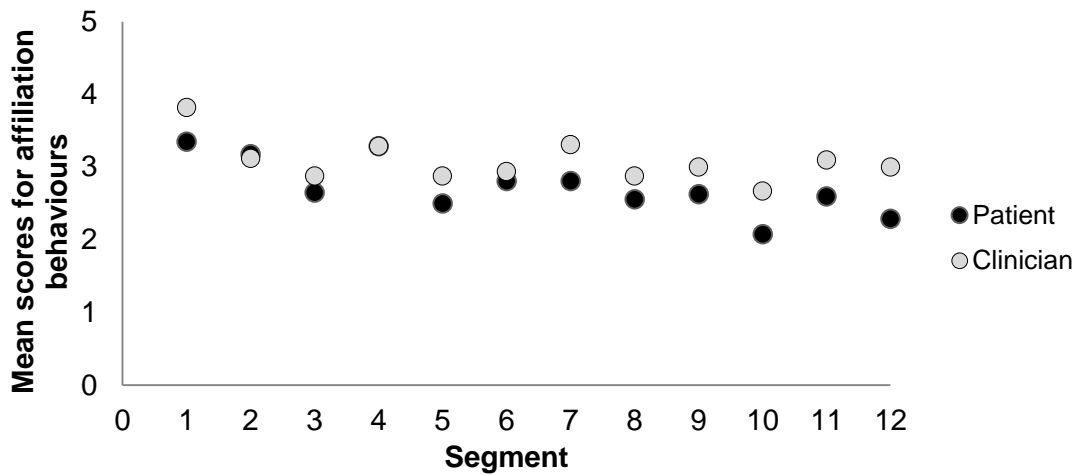


Figure 5. Mean scores for clinician-patient affiliation behaviours in image consultations  
Note. Positive scale only

Figure 5 demonstrates that over the course of the image consultations, patients' and clinicians' mean rating scores signalled low to moderate, positive affiliation behaviours.

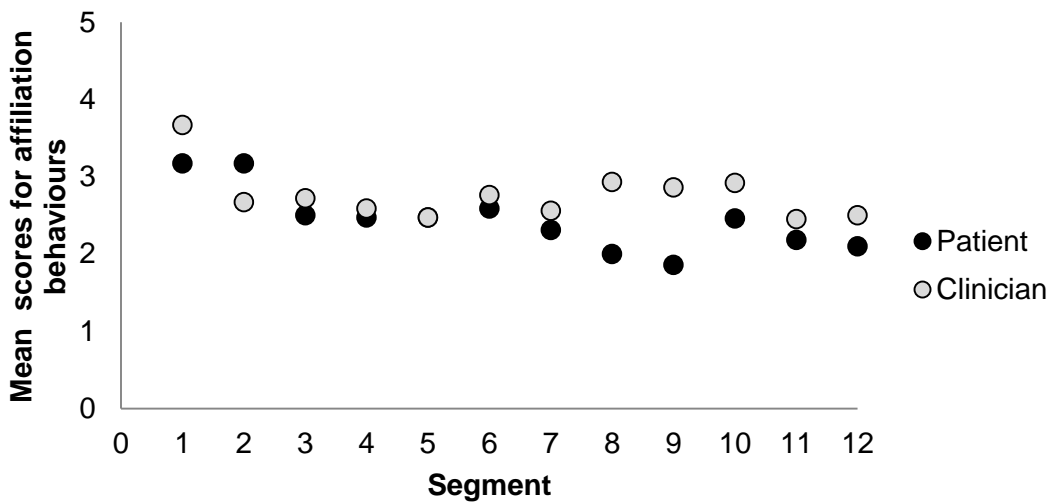


Figure 6. Mean scores for clinician-patient affiliation behaviours in control consultations  
Note. Positive scale only

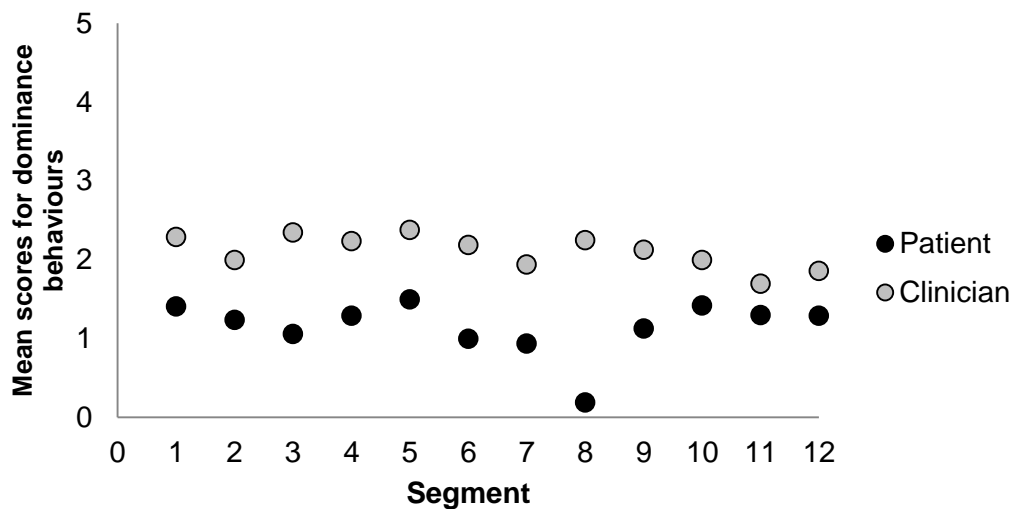
Figure 6 demonstrates that over the course of the control consultations, patients' and clinicians' mean rating scores also displayed behaviours signalling low to moderate positive affiliation. Patients and clinicians appeared to have similar mean rating scores for affiliation behaviours for the first half of the consultation only.



### Behavioural reciprocity of dominance behaviours

No correlation was found between patients' and clinicians' 'change scores' on dominance in the image group ( $r = -.241, p = .475, n.s$ ) and in the control group ( $r = .353, p = .287, n.s$ ). This means that over the course of both consultation types positive dominance behaviours displayed by the clinician were not negatively associated with positive dominance behaviours displayed by the patient (and vice versa), which would be indicative of demonstration of status differences. Therefore, behavioural reciprocity between patients' and clinicians' dominance behaviours was not observed in the image or control groups.

*Mean patient and clinician rating scores for dominance behaviours*



*Figure 7. Mean scores for clinician-patient dominance behaviours in image consultations*  
Note. Positive scale only

Figure 7 demonstrates that over the course of the image consultations patients' mean rating scores signalled low positive dominance behaviours. However, there appeared to be a downward trend towards the end of the consultations, whereby the mean ratings scores for patients' dominance behaviours were just above 0 (neutral behaviour). Clinicians' mean rating scores signalled moderate positive dominance behaviours.

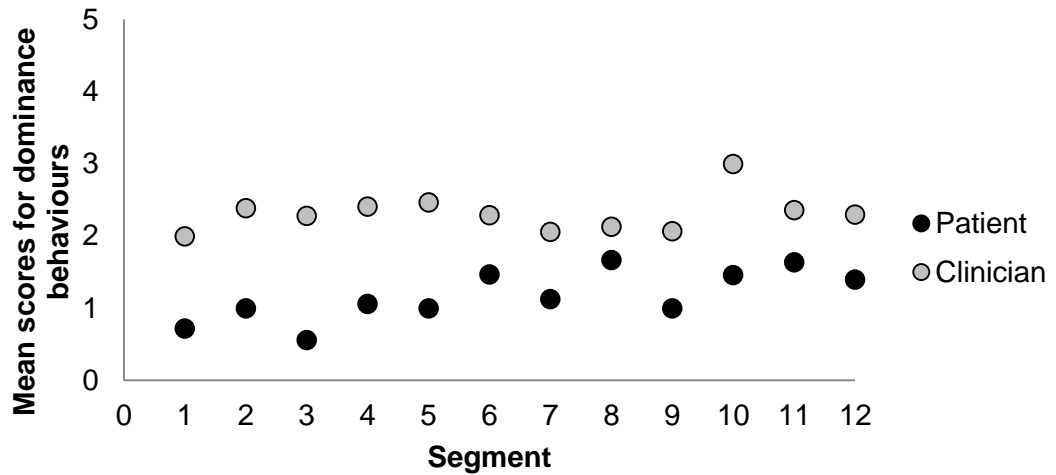


Figure 8. Mean scores for clinician-patient dominance behaviours in control consultations  
 Note. Positive scale only

Figure 8 demonstrates that over the course of the control consultations, patients' mean rating scores signalled low, positive dominance behaviours. Clinicians' mean rating scores signalled moderate, positive dominance behaviours. Therefore, despite patients and clinicians both displaying positive dominance behaviours clinicians appeared to be more dominant.

## Between-subjects comparisons over the course of the consultations

### *Patient affiliation behaviours*

Table 2

*Fixed effects estimates and variance-covariance estimates for models predicting patient affiliation over the course of the consultation*

Parameter	Model 1 (SE)	Model 2 (SE)	Model 3 (SE)	Model 4 (SE)	Model 5 (SE)
Fixed Effects					
Patient (Intercept)	2.78 (.11)***	2.81 (.22)***	3.26 (.24)***	3.24 (.26)***	3.23 (.24)***
Consultation type	-.30 (.15)	-.30 (.30)	-.30 (.30)	-.20 (.37)	-.18 (.33)
Segment			-.08 (.02)***	-.07 (.03)**	-.07 (.03)*
Consultation type x Segment				-.02 (.04)	-.02 (.04)
Random Parameters					
Patient (Intercept)		.65 (.19)	.63 (.18)**	.63 (.18)**	.46 (.18)**
Segment					.004 (.003)
-2 LL	1274.88	1194.41	1175.10	1174.88	1171.15
$X^2$ (df = 1)		80.47***	19.31***	0.21	3.73

*Note:* SE = Standard Error; x = Interaction; -2LL = -2 Log Likelihood.  
 $p < .001$ \*\*\*,  $p < .01$ \*\* ,  $p < .05$ \*

Table 2 demonstrates that an effect of consultation type (image vs. control) was not found for patient affiliation scores over the course of the consultations. Model 3 provided the best fit for predicting patient affiliation scores in both groups because the model was significantly improved by adding the fixed effect of segment. The best predictors of patient affiliation scores were the fixed and random intercepts, which represented individual variability of patients (i.e. the patients' level of affiliation at the

beginning of the consultation) and the segment. In both groups, as the consultations progressed patients' affiliation scores decreased.

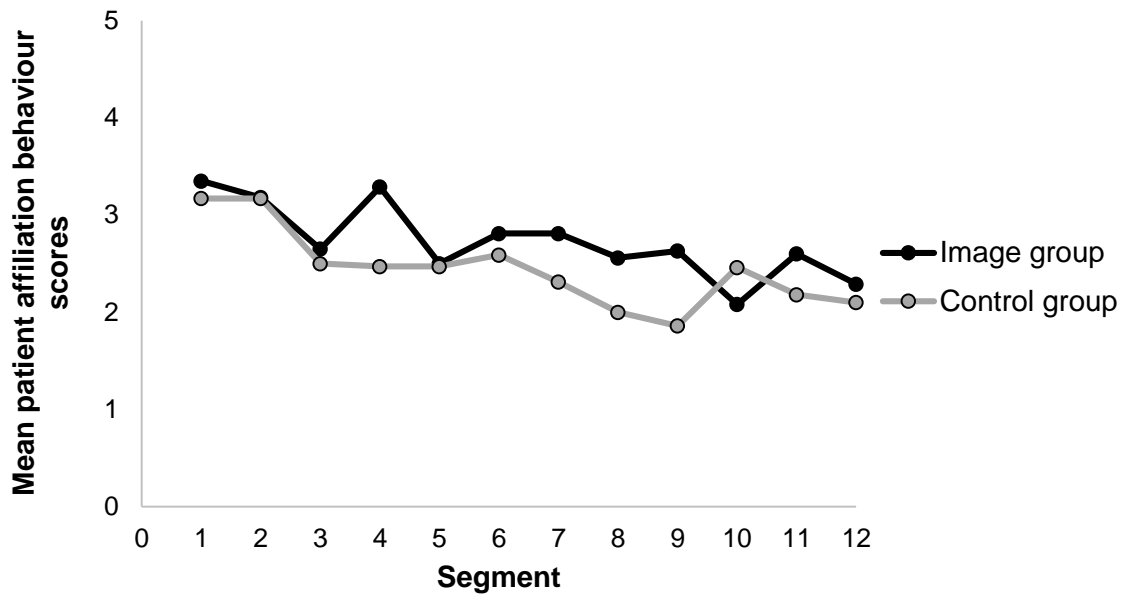


Figure 9: Mean scores for patient affiliation behaviours across the consultations  
Note. Positive scale only

Figure 9 demonstrates that patients' mean rating scores for positive affiliation behaviours appeared higher over the course of the image consultations compared to the control consultations. However, the multilevel modelling analysis in Table 2 demonstrated that this difference was not significant. There was a downward trend for both groups whereby the mean ratings for positive affiliation scores decreased over the course of the consultations. This was consistent with the multilevel modelling analysis because segment was a significant predictor of patient positive affiliation scores.

*Patient dominance behaviours*

Table 3

*Fixed effects estimates and variance-covariance estimates for models predicting patient dominance over the course of the consultation*

Parameter	Model 1 (SE)	Model 2 (SE)	Model 3 (SE)	Model 4 (SE)	Model 5 (SE)
Fixed Effects					
Patient (Intercept)	1.13 (.11)***	1.14 (.18)***	0.99 (.22)***	1.29 (.25)***	1.29 (.25)***
Consultation type	-.01 (.15)*	-.03 (.25)	-.03 (.25)	-.62 (.35)	-.62 (.35)
Segment			-.03 (.02)	-.03 (.03)	-.03 (.03)
Consultation type x Segment				.10 (.04)*	-.10 (.04)
Random Parameters					
Patient (Intercept)		.38 (.13)**	.33 (.13)*	.34 (.12)**	.34 (.13)**
Segment					a
-2 LL	1269.47	1236.94	1232.83	1227.63	1227.63
$\chi^2$ (df = 1)		32.53***	4.12***	5.20	b

*Note:* SE = Standard Error; x = Interaction; -2LL = -2 Log Likelihood; <sup>a</sup> = value could not be computed as random parameter of segment made no change to the previous model, <sup>b</sup> = no change in chi-square statistic  
 $p < .001$ \*\*\*,  $p < .01$ \*\* ,  $p < .05$ \*

Table 3 demonstrates that an effect of consultation type was not found for patient dominance scores over the course of the consultations. Model 4 provided the best fit for predicting patient dominance scores in both groups because the model was significantly improved by adding the interaction between consultation type and segment as a fixed effect. The best predictors of patient dominance scores were the

fixed and random intercepts, which were the individual variability of patients (i.e. patients' level of dominance at the beginning of the consultation) and the interaction between consultation type and segment. In the control group, as the consultation progressed patient dominance scores increased

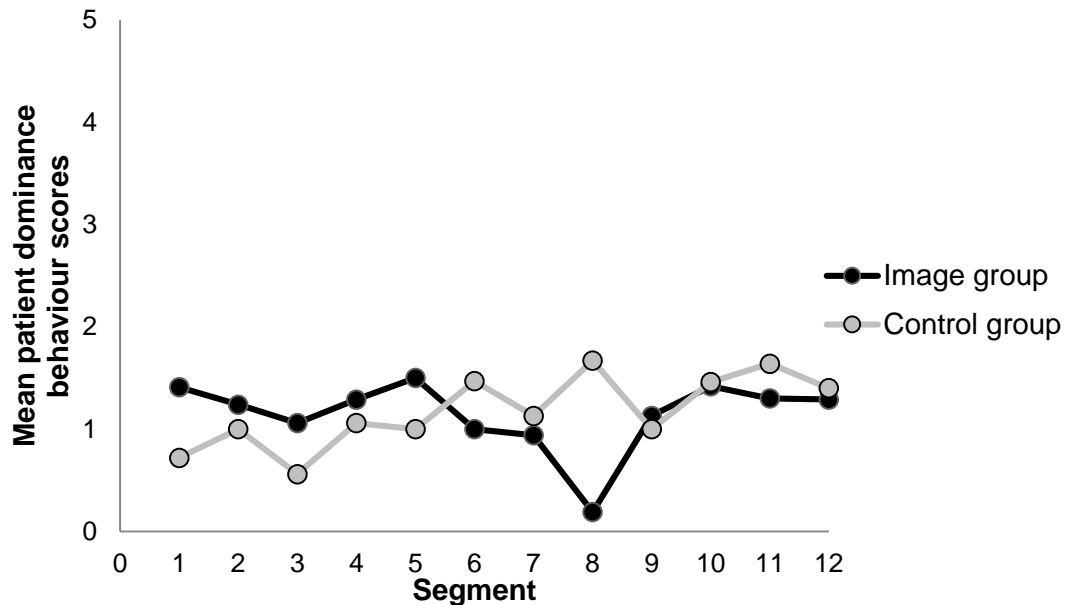


Figure 10: Mean patient dominance behaviours scores across the consultations  
 Note. Positive scale only

Figure 10 demonstrates that there was an upward trend for patients in the control group, whereby their mean ratings for positive dominance behaviours appeared to increase as the consultations progressed. This was confirmed by the consultation type and segment interaction in the multilevel modelling analysis in Table 3. Apart from what appeared to be a downwards trend towards the end of the image consultations the mean rating scores for patients' dominance behaviours appeared to remain relatively stable over the course of the consultations.

*Patient emotional disclosure*

Table 4

*Fixed effects estimates and variance-covariance estimates for models predicting patient emotional disclosure over the course of the consultation*

Parameter	Model 1 (SE)	Model 2 (SE)	Model 3 (SE)	Model 4 (SE)	Model 5 (SE)
Fixed Effects					
Patient (Intercept)	1.06 (.12)***	1.05 (.16)***	.85 (.21)***	.86 (.26)**	.89 (.24)***
Consultation type	-.08 (.16)	-.08 (.22)	-.07 (.22)	-.11 (.36)	-.11 (.33)
Segment			-.04 (.03)	-.03 (.04)	-.03 (.04)
Consultation type x Segment				-.01 (.05)	-.01 (.06)
Random Parameters					
Patient (Intercept)		.21 (.10)*	.21 (.11)	.21 (.11)	.04 (.13)
Segment					.004 (.003)
-2 LL	1348.65	1338.47	1336.41	1336.40	1333.77
X <sup>2</sup> (df = 1)		10.18**	2.06	.01	2.63

*Note:* SE = Standard Error; x = Interaction; -2LL = -2 Log Likelihood.  
*p*<.001\*\*\*, *p*<.01\*\*, *p*<.05\*

Table 4 demonstrates that an effect of consultation type was not found for the level of how person patient's emotional disclosures were over the course of the consultations. Model 2 provided the best fit for the predicting how personal patients' emotional disclosures were in both groups because the model was significantly improved by adding the random parameter of patient. The best predictors of patients' emotional disclosure scores were the fixed and random intercepts, which were the individual

variability of patients (i.e. how personal the patients' emotional disclosures were at the beginning of the consultations).

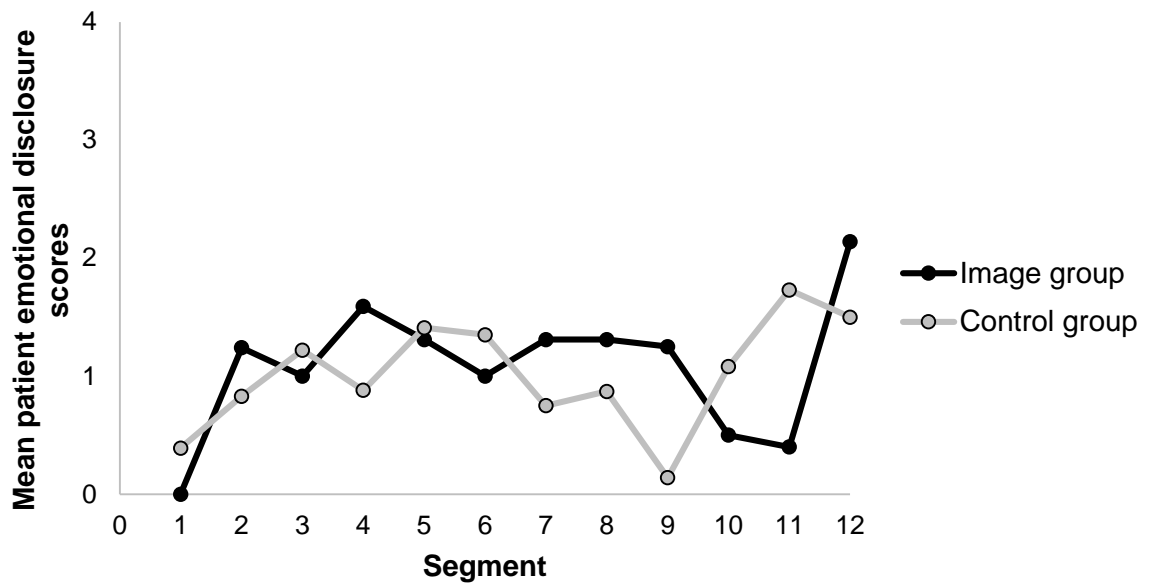


Figure 11: Mean patient emotional disclosure scores across the consultations  
Note. Positive scale only

Figure 11 demonstrates that in both groups the mean rating score for how personal patients' emotional disclosures were appeared to increase towards the end of the consultations. Overall, patients appeared to make more personal disclosures in the image group. However, this was not confirmed by the multilevel modelling analysis in Table 4.

The mean rating scores for how personal patient's emotional disclosures were over the course of the image consultations ranged from 'no disclosure' (0) to somewhere between 'somewhat personal' (2) and 'moderately personal' (3). The mean rating scores over the course of control consultations ranged from 'no disclosure' to somewhere between 'not personal' (1) and 'somewhat personal'.



## Within-subjects comparisons over the course of the consultations

### *Clinician affiliation behaviours*

Table 5

*Fixed effects estimates and variance-covariance estimates for models predicting  
clinician affiliation over the course of the consultation*

Parameter	Model 1 (SE)	Model 2 (SE)	Model 3 (SE)	Model 4 (SE)	Model 5 (SE)
Fixed Effects					
Patient (Intercept)	3.09 (.09)***	3.11 (.16)***	3.40 (.20)***	3.38 (.23)***	3.36 (.21)***
Consultation type	-.31 (.13)*	-.35 (.23)	-.35 (.23)	-.30 (.32)	-.30 (.30)
Segment			-.05 (.02)*	-.04 (.03)	-.04 (.02)
Consultation type x Segment				-.01 (.04)	-.01 (.04)
Random Parameters					
Patient (Intercept)		.34 (.12)**	.31 (.11)**	.31 (.11)**	.23 (.12)
Segment					.002 (.002)
-2 LL	1168.79	1119.96	1109.73	1109.67	1108.20
$\chi^2$ (df = 1)		48.82***	10.22**	.06	1.46

*Note:* SE = Standard Error; x = Interaction; -2LL = -2 Log Likelihood.  
 $p < .001$ \*\*\*,  $p < .01$ \*\* ,  $p < .05$ \*

Table 5 demonstrates that an effect of consultation type was not found for clinician affiliation scores over the course of the consultations. Model 3 provided the best fit for the predicting clinician affiliation scores in both groups because this model was significantly improved by adding the fixed effect of segment. The best predictors of

clinician affiliation scores were the individual variability of patients (fixed and random intercepts). However, an effect of segment (fixed) was found for the image group. This means that as consultations in the image group progressed, clinicians' affiliation scores decreased.

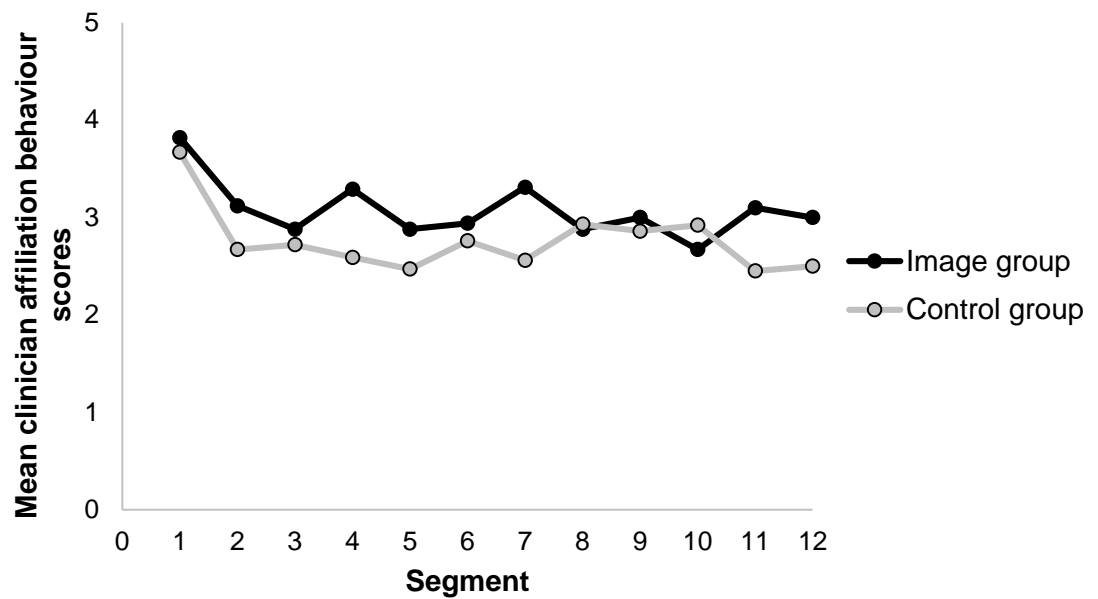


Figure 12: Mean clinician scores for affiliation behaviours across the consultations  
Note. Positive scale only

Figure 12 demonstrates that overall, the mean rating scores for clinicians' positive affiliation behaviours appeared higher in the image group than in the control group. However, this was not confirmed by the multilevel modelling analysis (Table 5).

*Clinician dominance behaviours*

Table 6

*Fixed effects estimates and variance-covariance estimates for models predicting clinician dominance over the course of the consultation*

Parameter	Model 1 (SE)	Model 2 (SE)	Model 3 (SE)	Model 4 (SE)	Model 5 (SE)
Fixed Effects					
Patient (Intercept)	2.14 (.10)***	2.18 (.21)***	2.18 (.24)***	2.32 (.27)***	2.30 (.26)***
Consultation type	-.16 (.14)	-.13 (.30)	-.13 (.30)	-.14 (.38)	-.16 (.36)
Segment			-.0006 (.02)	-.03 (.03)	-.02 (.03)
Consultation type x Segment				-.05 (.04)	-.04 (.05)
Random Parameters					
Patient (Intercept)		.66 (.19)***	.60 (.18)**	.60 (.19)**	.53 (.19)**
Segment					.01 (.003)
-2 LL	1251.16	1155.38	1148.09	1146.81	1142.99
$\chi^2$ (df = 1)		95.79***	7.29**	1.27	3.82*

*Note:* SE = Standard Error; x = Interaction; -2LL = -2 Log Likelihood.  
 $p < .001$ \*\*\*,  $p < .01$ \*\* ,  $p < .05$ \*

Table 6 demonstrates that an effect of consultation type was not found for clinician dominance scores over the course of the consultations. Model 3 provided the best fit for the predicting clinician dominance scores in both groups because the model was significantly improved by adding the fixed effect of segment. The best predictors of clinician dominance scores however were the fixed and random intercepts, which were the individual variability of patients.

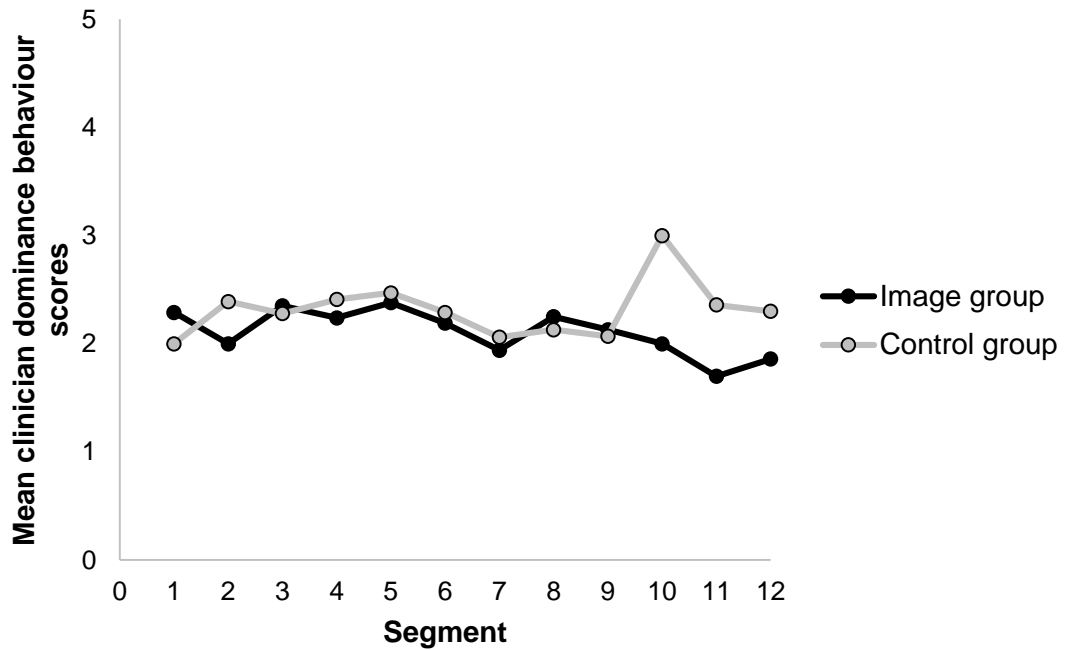


Figure 13: Mean clinician dominance behaviour scores across the consultations  
 Note. Positive scale only

Figure 13 demonstrates that in both groups there was relatively no change in the mean rating scores for clinicians' positive dominance behaviours over the course of the consultations. This was confirmed by the multilevel modelling analysis (Table 6).

*Patient emotional disclosures and the status of the images in consultations*

Within-subjects comparisons demonstrated that image status significantly predicted how personal patients' emotional disclosure scores were over the course of the image consultations:  $b = 1.67, t(177) = 4.59, p < .001$ ). Therefore, patients in the image group made more personal disclosures about pain and non-pain-related issues when the images were used compared to when they were present but not used in the consultations.

## **Discussion**

This study examined the impact of using photographic images depicting qualities of and metaphors for pain and pain-related experience in chronic pain consultations, on patient and clinician nonverbal communication and patient emotional disclosure.

### **Summary of findings**

Behavioural correspondence was observed between patients' and clinicians' affiliation behaviours over the course of the consultations in the image group. Therefore, positive affiliation behaviours displayed by the patient were associated with positive affiliation behaviours from the clinician. With regards to patient emotional disclosure in the image group, within-subjects comparisons demonstrated that patients made more personal emotional disclosures about pain and non-pain-related topics when the images were used compared to when they were not used in the consultation.

The remainder of the findings were not significant. Behavioural correspondence between patients' and clinicians' affiliation behaviours was not observed in the control group. Similarly, behavioural reciprocity was not observed between patients' and clinicians' dominance behaviours in the image or control groups. Between-subjects comparisons between the image and control groups failed to find effects of consultation type for patients' affiliation and dominance behaviours and how personal patients' emotional disclosures were over the course of the consultations when taking into account patient variability. Similarly, when taking into account patient variability, no effects of consultation type were found for clinicians' affiliation and dominance behaviours over the course of the consultations (within-subjects comparisons). For both groups effects of segment were found for patients affiliation and dominance behaviours: patients' low to moderate, positive affiliation behaviours decreased (image group), and patients' low, positive dominance behaviours increased (control group) as the consultations progressed. An effect of

segment was also found for clinicians' affiliation behaviours in the image consultations, whereby clinicians' moderate, positive affiliation behaviours decreased over the course of these consultations.

## **Interpretations of findings**

### *Patients' and clinicians' nonverbal communication*

The observed behavioural correspondence between patients' and clinicians' positive affiliation behaviours in the image group is of interest because the mirroring of such behaviours within an interaction is associated with better rapport (Cialdini, 2001), trust and the desire for interpersonal closeness (Lakin & Chartrand, 2003). These qualities strengthen the clinician-patient relationship by fostering good communication (De Haes & Bensing, 2009). Therefore, these results provide support for previous qualitative research findings, which suggest that pain images can be used to facilitate communication between patients and clinicians (e.g. Padfield et al., 2010). However, it should be noted that in the quantitative analysis of patients and clinicians verbal communication (Padfield et al., 2015), patients and clinicians did not rate communication as better in consultations with images compared to consultations without images.

The finding that patients' positive affiliation behaviours significantly decreased over the course of both types of consultations is a normal pattern, since these behaviours are used to facilitate engagement and build connections with the other in the early stages of the therapeutic encounter (Kiesler & Auerbach, 2003), and each patient's consultation was their first with that clinician. Therefore, it may be that once patients felt that clinicians were engaged in the consultation, their need to affiliate reduced as the consultation progressed. As behaviours signalling positive affiliation are more likely to be mirrored by the other in the interaction (Kiesler & Auerbach, 2003), the finding that clinicians' positive affiliation behaviours significantly decreased over the course of the image consultations suggests that clinicians may have been

responding to the needs of the patient. Similarly, like the patients, the clinicians are likely to have displayed more engagement-inviting affiliation behaviours at the start of the consultation rather than later. Given the small sample size, the current study is cautious about providing an explanation that is likely to be speculative for the interaction demonstrating a significant increase in patient dominance as the control consultations progressed.

Previous research suggests that using images of pain within chronic pain consultations validated the patients' experiences by making them feel that their pain was more visible to others and was associated with patients' sense of achieving greater equality between the roles of speaker and listener for the patient and the clinician (Padfield et al., 2010). This suggests that the images may help patients to feel confident that their pain is taken seriously by clinicians (Laerum, et al., 2006).

The finding that behavioural reciprocity was not observed between patients' and clinicians' dominance behaviours in the image and control groups is also of interest. The inherent power imbalance between patients and clinicians within medical consultations means that clinicians are positioned as dominant and patients as non-dominant or even submissive (Laine & Davidoff, 1996). Although clinicians displayed more pronounced dominance behaviours overall than patients over the course of consultations with and without images, both patients and clinicians displayed varying degrees of positive dominance behaviours (overall patients displayed low, positive dominance behaviours while clinicians displayed moderate, positive dominance behaviours). Dominance behaviours demonstrate assertiveness, which can be a useful quality for patients to have to ensure they are able to take an active role in negotiating the healthcare they receive (Harrington et al., 2004). Therefore, not observing the usual pattern of dominant clinician behaviour and submissive patient behaviour may be explained by particular characteristics of the pain consultations. For instance, it may have been because the clinicians in this study were able to offer the patients longer appointments (up to an hour and a half) than they would usually

be offered in NHS GP or specialist medical consultations. Therefore, longer consultations may have provided patients with more time to play an active role in the consultation process (Oxtoby, 2010). Another possible explanation for this pattern of behaviour in the image consultations may have been due to the images themselves. However, this would need further exploration. Similarly, this pattern of behaviour may also be attributable to gender differences in clinicians' nonverbal communication. For instance, research suggests that male clinicians are more likely to display more dominant behaviours and female clinicians are more likely to display more affiliative behaviours, and patients may have a preference for either (Mast, Hall, Klöckner & Choi, 2008). However, because of the small numbers in this study, such effects cannot be segregated statistically.

Failure to find significant differences between the image and control groups for patients' and clinicians' affiliation and dominance behaviours is consistent with the lack of group differences found by Padfield et al. (2015) for the impact of pain images on patients' and clinicians' ratings of consultations. Therefore, the lack of differences found in the current study may be due to the same reasons Padfield et al. (2015) cited. For instance, in their study, irrespective of group, patients' and clinicians' ratings of consultations were high. Therefore, there was not a huge amount of variance, so the methods used may not have been sensitive enough to detect small differences if they did exist. Another possible explanation for the lack of differences between the groups is that the images might not have made that much difference to the consultations, or they might have made a difference to patients' feelings about the consultations, but might not have conveyed much to clinicians. For instance, there is no evidence to suggest that if patients use the images to provide clinicians with a clear description of their pain this will guarantee more acceptable discussion of treatment options. This explanation assumes that the methods used in the current study have provided reliable results.



Further to this, the lack of group differences may have been because patients in the image and control groups differed at baseline in some way that was not captured by the few data shown. The statistical analysis demonstrated that patient variability rather than the consultation type was the best predictor of patients' and clinicians' affiliation and dominance behaviours and how personal patients' emotional disclosures were. Therefore, different approaches to pain consultations (e.g. using vs. not using images) may affect the nonverbal behaviour of patients and clinicians differently. As a result, the current study may have required a larger sample size to detect small differences because when variance is high large between-group differences are needed. Similarly, the lack of statistical power to detect an effect of consultation type for patient affiliation behaviours (but not for patient dominance behaviours) may have also contributed to the findings.

#### *The impact of pain images on patient emotional disclosure*

Within image consultations, the fact that patients made more personal emotional disclosures when the pain images were used compared to when they were not used in the consultations (within-subjects comparison) is consistent with findings by Padfield et al. (2010). As discussions about patients' emotional experiences are often given less attention within medical consultations compared to discussions about physical symptoms (Levinson et al., 2013), an explanation for these findings is that the pain images may have made it more acceptable for clinicians and patients to engage in a dialogue about the emotional impact of pain. For instance, as the pain images were an additional resource to the traditional approach of conducting pain consultations, they may have created opportunity for conversations of this kind to emerge. This is particularly important within the context of chronic pain, as patients consistently emphasise the importance of clinicians attending to the socio-emotional concerns as a way of improving communication within pain consultations (Farin,

Gramm & Schmidt, 2012; Farin, Gramm & Schmidt, 2013; Laerum et al., 2006; Smith & Osborn, 2007).

The nature of chronic pain can make it difficult for patients to communicate their experiences using language (Pither, 2002). Therefore, a final explanation for this finding is that the pain images may have empowered patients by providing them with a way of putting the emotional impact of their pain experiences into words (Main, 2014). Due to the abstract nature of some of the photographic images of pain, interpretation was required to ensure shared understanding between patients and clinicians (Padfield et al., 2015). Therefore, information such as personal emotional disclosures about the impact of pain might not have been elicited had the images not prompted patients to do so (Padfield, et al., 2015).

### **Limitations**

The current study has several limitations. First, patients in the image group used the pain images at different time points throughout the consultations, which did not always correspond with the segments of the consultation that were selected for coding (1 minute of every 5 minutes of the consultation). Therefore, many of the coded segments did not capture the instances in the consultations where the pain images were being used. This sampling method could therefore be improved by reducing the coding intervals (e.g. coding 1 minute of every 3 minutes) or by coding sections when the images were used, and comparing with sections of equal length at a similar point over the course of the consultation for the control group, or comparing with sections immediately before and after use of images within subjects in the image group.

Second, patients were instructed to use the images as little or as much as they wanted in the consultations. However, in some consultations the clinician initiated image use, which could have been mistimed for the patient's disclosures. Similarly, by clinicians introducing the images, this raises questions about making patients speak about the images at a time that may not have fitted their needs at that point in

the consultation. Therefore, this could be improved in the future by instructing clinicians at the start of consultations to let patients introduce the images when and how they wish to.

Third, allocation to the image and control groups did not involve randomisation. This may be particularly pertinent for this study because patient variability rather than consultation type was the best predictor of all between-group comparisons. Therefore, randomisation could control for some of the unknown confounding variables (Barker, Pistrang & Elliott, 2002) that may exist. Alternatively, as this assumes that images have an effect across the board (or at least a normal distribution, as it were, of effect), it could be that some people find them very helpful and others not at all (i.e. bimodal distribution) and that it would also be useful to try this study letting people choose whether to use images or not. In addition to this, the study could be improved by measuring variables that are likely to have an impact on the variables under investigation. For instance, a patient's mood or having a history of mental health difficulties is likely to have an impact on how personal patients' emotional disclosures were during the consultations. Research has shown that high levels of emotional distress among chronic pain patients can inhibit (Main, et al., 2010) or lead to excessive disclosure (Haskard-Zolnierok, 2012), both of which may negatively impact the clinician's ability to thoroughly assess the patient's pain within the consultation. Therefore, after making sensible hypotheses about likely confounding variables, researchers should be prepared to make statistical adjustments for any differences between the groups that are found.

Fourth, another significant limitation was the underpowered nature of the study to detect an effect of consultation type for patient affiliation behaviours. Therefore, a larger sample size that is big enough to detect group differences in affiliation should be considered for future research.

A final methodological limitation of the study is that as the coders could not be blinded to when and whether the images were used. Therefore, the coders' ratings of how personal patients' emotional disclosures were could have been affected by this.

### **Clinical implications**

The findings outlined above have several implications. As behavioural correspondence between patients' and clinicians' positive affiliation behaviours occurred in consultations with images, and behavioural correspondence is associated with better rapport and trust, the findings have implications for improving communication within the clinician-patient relationship. Similarly, as positive affiliation behaviours are associated with patient satisfaction with healthcare (Bertakis et al., 1991), increased patient involvement in treatment decision-making (Frantsve, 2002) and treatment adherence (Aruguete & Roberts, 2002), this highlights the importance of patients and clinicians engaging in these behaviours within pain consultations. .

As using the pain images (compared to when the images were present in the consultation but not used) facilitated and prompted patients to speak more openly about the emotional impact of pain, this has an implication for how pain consultations are conducted. For instance, patients that find using images useful as a means of communicating their pain should have the option of incorporating this into their consultations. One of the benefits of doing so is that it does not necessarily have to increase the length of the consultation because the study found no mean difference between the length of consultations with and without images.

Despite this, the extent of facilitating emotional disclosure within pain consultations also has implications for clinicians. There are competing demands on patients and clinicians in consultations (Frantsve. & Kerns, 2007) that need to be taken into consideration when thinking about consultation content. For instance, although chronic pain patients frequently report that discussions about socio-emotional concerns are not sufficiently attended to by clinicians in consultations

(Farin et al., 2012), solely focussing on this may not be the most effective use of consultation time, particularly because the evidence for its proposed benefits in improving health outcomes in patients with chronic pain is inconsistent (e.g. Lumley, Sklar & Carty, 2012). However, this is not to suggest that discussions about socio-emotional concerns are not important or do not have a place in the consultation.

Clinicians have several clinical tasks to complete within a consultation. They are required to establish a good enough relationship with the patient, so that a thorough assessment of the patient and their pain can be conducted. Following this, the clinician has to make a decision about suitable treatment options (including what the patient can do themselves to manage pain and what treatments they have had already) and discuss and agree this with the patient. Clinicians also need to factor in time to make amendments to the treatment plan and answer the patient's questions where necessary and often to explain what the pain means, and what it does not mean (ongoing damage or disease). This is a lot of information to fit into a single consultation. Therefore, the danger of the clinician solely engaging in empathic listening while patients make emotional disclosures about their pain is that the patient will leave the consultation without a clear understanding of pain and without a clear treatment plan or appreciation of beneficial behaviours under their own control. The increased demands NHS clinicians face to see more patients means they are more likely to conduct shorter, less comprehensive consultations to meet targets (Oxtoby, 2010). Therefore, clinicians need to be mindful that what the patient wants from the consultation or prefers is not always feasible within those constraints. Clinicians should be transparent about the competing demands with patients and engage in such conversations at the start of the consultation, as this may help manage patients' expectations and ensure that they are aware of what the consultation will involve.

Despite this, chronic pain is often associated with increased psychological distress (Williams et al., 2012). Therefore, the findings may have implications for the use of images during routine screening of mood within pain consultations. For

instance, as the images facilitate emotional disclosure about pain this can help clinicians better identify and meet the patient's psychological needs. Depending on the severity or nature of the patient's disclosure this could lead to a referral to an appropriate psychological service for further assessment. However, it must not be assumed that all chronic pain patients will experience psychological distress.

### **Future research**

The exploratory nature of the current study suggests that the results can be used to generate hypotheses about the impact of using pain images within pain consultations on patient and clinician nonverbal communication (particularly behavioural correspondence) and patient emotional disclosure. Similarly, the current findings will be used to inform a future study examining linguistic differences (Deignan, Littlemore & Semino, 2013) between patients and clinicians dialogues in consultations with and without pain images.

Future research should consider making improvements to the study's methodological design. One option is to consider randomisation to allocate patients to the image and control groups. Another option is to use event-contingent sampling in addition to fixed-interval sampling to capture image use. This would involve coders rating patients' and clinicians' affiliation and dominance behaviours every time the pain images are used throughout the consultations. This would provide richer data, which might deepen our understanding of patient and clinician nonverbal communication during image use. However, using this method would mean that only within rather than between-subjects comparisons (e.g. with the control group) can be made.

Future research could also examine whether behavioural correspondence of positive affiliation behaviours in the context of the image consultations are directly associated with patient emotional disclosure, particularly because nonverbal behaviour plays a crucial role in displays of affect within medical consultations (Finset

& Del Piccolo, 2011). Including a longer follow-up period in future research may also be beneficial. For instance, by examining the impact of the pain images on immediate and distal patient factors, such as treatment adherence and health outcomes (De Haes & Bensing, 2009) may provide further evidence for their clinical utility within pain consultations.

## **Conclusion**

Although an effect of consultation type was not found for patients' and clinicians' affiliation and dominance behaviours or for patients' emotional disclosures over the course of the consultations, the current study demonstrated some benefit from using photographic images of pain as a communication tool in chronic pain consultations. Behavioural correspondence between patients' and clinicians' positive affiliation behaviours was observed in the image consultations, and actually using the images (compared to their being available but not used) encouraged patients to make personal disclosures about the emotional impact of pain and how pain had affected their lives. Findings are tentative given the low power of the analysis, and methodological limitations of this exploratory study should also be taken into consideration when interpreting and drawing implications from this study.

## References

- Adams, K., Cimino, J. E. W., Arnold, R. M., & Anderson, W. G. (2012). Why should I talk about emotion? Communication patterns associated with physician discussion of patient expressions of negative emotion in hospital admission encounters. *Patient Education and Counseling*, *89*(1), 44–50. doi:10.1016/j.pec.2012.04.005
- Albrecht, T. L., Penner, L. A., Cline, R. J., Eggly, S. S., & Ruckdeschel, J. C. (2009). Studying the process of clinical communication: Issues of context, concepts, and research directions. *Journal of Health Communication*, *14*(Supplement 1), 47–56. doi:dx.doi.org/10.1080/10810730902806794
- Aruguete, S. M., & Roberts, C. A. (2002). Participants' ratings of male physicians who vary in race and communication style. *Psychological Reports*, *91*(3), 793–806.
- Barker, C., Pistrang, N., & Elliott, R. (2002). *Research methods in clinical psychology*. London: Wiley.
- Bensing, J. M. (1991). Doctor–patient communication and the quality of care. *Social Science and Medicine*, *32*, 1301–1313.
- Bertakis, K. D., Roter, D. L., & Putnam, S. M. (1991). The relationship of physician medical interview style to patient satisfaction. *Journal of Family Practice*, *32*, 175–181.
- Breivik, H., Collett, B., Ventafridda, V., Cohen, R., & Gallacher, D. (2006). Survey of chronic pain in Europe: Prevalence, impact on daily life, and treatment. *European Journal of Pain*, *10*(4), 287–333. doi:10.1016/j.ejpain.2005.06.009
- Burgoon, J. K., & Dunbar, N. E. (2000). An interactionist perspective on dominance–submission: Interpersonal dominance as a dynamic, situationally contingent social skill. *Communication Monographs*, *67*, 96–121. doi:10.1080/03637750009376497
- Cappella, J. N., & Schreiber, D. M. (2006). The interaction management function of nonverbal cues. In V. Manusov & M. L. Patterson (Eds.), *The SAGE handbook*



*of nonverbal communication* (pp. 361–379). Thousand Oaks: SAGE Publications.

Charon, R. (2001). Narrative medicine: A model for empathy, reflection, profession and trust. *The Journal of the American Medical Association*, *286*(15), 1897–1902.

Cialdini, R. B. (2001). *Influence: Science and practice*. Boston: Allyn & Bacon.

Dansie, E. J., & Turk, D. C. (2013). Assessment of patients with chronic pain. *British Journal of Anaesthesia*, *111*(1), 19–25. doi:10.1093/bja/aet124

De Haes, H., & Bensing, J. (2009). Endpoints in medical communication research, proposing a framework of functions and outcomes. *Patient Education and Counseling*, *74*, 287–294.

Deignan, A., Littlemore, J., & Semino, E. (2013). *Figurative language, genre and register*. Cambridge: Cambridge University Press.

Dobkin, P. L., Sita, A., & Sewitch, M. J. (2006). Predictors of adherence to treatment in women with fibromyalgia. *Clinical Journal of Pain*, *22*, 286–294.

Duric, V., Butow, P., Sharpe, L., Lobb, E., Meiser, B., Barratt, A., & Tucker, K. (2003). Reducing psychological distress in a genetic counseling consultation for breast cancer. *Journal of Genetic Counseling*, *12*(3), 243–264.

Farin, E., Gramm, L., & Schmidt, E. (2012). Taking into account patients' communication preferences: Instrument development and results in chronic back pain patients. *Patient Education and Counseling*, *86*(1), 41–48. doi:10.1016/j.pec.2011.04.012

Farin, E., Gramm, L., & Schmidt, E. (2013). Predictors of communication preferences in patients with chronic low back pain. *Patient Preference and Adherence*, *7*, 1117–1127. doi:10.2147/PPA.S50695

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G\*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*, 175–191.

- Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). London: Sage
- Finset, A. (2012). "I am worried, Doctor!" Emotions in the doctor-patient relationship. *Patient Education and Counseling*, 88(3), 359–63. doi:10.1016/j.pec.2012.06.022
- Finset, A., & Del Piccolo, L. (2011). Nonverbal communication in clinical contexts. In M. Rimondin (Ed.), *Communication in cognitive behavioral therapy* (pp. pp. 107–128). New York: Springer.
- Frantsve L. M. E. (2002). *Effects of enhanced decisional control on patients' adjustment to and recovery from oral surgery*. Richmond, VA: Virginia Commonwealth University.
- Frantsve, L. M. E., & Kerns, R. D. (2007). Patient – provider interactions in the management of chronic pain: Current findings within the context of shared medical decision making. *Pain*, 8(1), 25–35.
- Frisina, P. G., Borod, J. C., & Lepore, S. J. (2004). A meta-analysis of the effects of written emotional disclosure on the health outcomes of clinical populations. *Journal of Nervous and Mental Disease*, 192(9), 629–634.
- Gatchel, R. J., McGeary, D. D., McGeary, C. A., & Lippe, B. (2014). Interdisciplinary chronic pain management: past, present, and future. *The American Psychologist*, 69(2), 119–130. doi:10.1037/a0035514
- Guéguen, N., Meineri, S., & Charles-Sire, V. (2010). Improving medication adherence by using practitioner nonverbal techniques: a field experiment on the effect of touch. *Journal of Behavioral Medicine*, 33(6), 466–473.
- Ha, J. F., Anat, D. S., & Longnecker, N. (2010). Doctor-patient communication: A review. *The Ochsner Journal*, 10, 38–43.
- Hall, J. A., Roter, D. L., & Katz, B. A. (1988). Meta-analysis of correlates of provider behavior in medical encounters. *Medical Care*, 26, 657–675.

- Harrington, J., Noble, L. M., & Newton, S. P. (2004). Improving patients' communication with doctors: A systematic review of intervention studies. *Patient Education and Counseling*, *52*(1), 7–16. doi:10.1016/S0738-3991(03)00017-X
- Haskard-Zolnierok, K. B. (2012). Communication about patient pain in primary care: Development of the Physician-Patient Communication about Pain scale (PCAP). *Patient Education and Counseling*, *86*(1), 33–40. doi:10.1016/j.pec.2011.03.020
- Henry, S. G., Fuhrel-Forbis, A., Rogers, M. A. M., & Eggly, S. (2012). Association between nonverbal communication during clinical interactions and outcomes: a systematic review and meta-analysis. *Patient Education and Counseling*, *86*(3), 297–315. doi:10.1016/j.pec.2011.07.006
- Kain, Z. N., MacLaren, J. E., Hammell, C., Novoa, C., Fortier, M. A., Huszti, H., Mayes, L. (2009). Healthcare provider–child–parent communication in the preoperative surgical setting. *Pediatric Anesthesia*, *19*(4), 376–384. doi:10.1111/j.1460-9592.2008.02921.x
- Kenny, D. T. (2004). Constructions of chronic pain in doctor-patient relationships: bridging the communication chasm. *Patient Education and Counseling*, *52*(3), 297–305. doi:10.1016/S0738-3991(03)00105-8
- Kiesler, D. J. (1996). *Contemporary interpersonal theory and research: Personality, psychopathology, and psychotherapy*. New York: Wiley.
- Kiesler, D.J., & Auerbach, S. M. (2003). Integrating measurement of control and affiliation in studies of physician-patient interaction: The interpersonal circumplex. *Social Science and Medicine*, *57*, 1707–1722. doi:10.1016/S0277-9536(02)00558-0
- Knapp, M. L., & Hall, J. A. (2002). *Nonverbal communication in human interaction* (5th ed.). Fort Worth: Harcourt Brace.
- Laerum, E., Indahl, A., & Skouen, J. S. (2006). What is “the good back-consultation”? A combined qualitative and quantitative study of chronic low back pain patients'

- interaction with and perceptions of consultations with specialists. *Journal of Rehabilitation Medicine*, 38(4), 255–262. doi:10.1080/16501970600613461
- Laine, C., & Davidoff, F. (1996). Patient-centered medicine: A professional evolution. *Journal of the American Medical Association*, 275(2), 152–156. doi:10.1001/jama.1996.03530260066035
- Lakin, J. L., & Chartrand, T. L. (2003). Using nonconscious behavioral mimicry to create affiliation and rapport. *Psychological Medicine*, 14, 334–339.
- Levinson, W., & Chaumeton, N. (1999). Original communications Communication between surgeons and patients in routine office visits. *Surgery*, 125(2), 127–134. doi:10.1016/S0039-6060(99)70255-2
- Levinson, W., Hudak, P., & Tricco, A. C. (2013). A systematic review of surgeon-patient communication: Strengths and opportunities for improvement. *Patient Education and Counseling*, 93(1), 3–17. doi:10.1016/j.pec.2013.03.023
- Lumley, M. A. L., Sklar, E. R., & Carty, J. N. (2012). Emotional disclosure interventions for chronic pain: From the laboratory to the clinic. *Translational Behavioral Medicine*, 2, 73–81. doi:10.1007/s13142-011-0085-4
- Main, S. (2014). Picturing pain: using creative methods to communicate the experience of chronic pain. *Pain News*, 12(1), 33–25. Retrieved from [http://www.britishpainsociety.org/bps\\_nl\\_vol12\\_issue1.pdf](http://www.britishpainsociety.org/bps_nl_vol12_issue1.pdf)
- Main, C. J., Buchbinder, R., Porcheret, M., & Foster, N. (2010). Addressing patient beliefs and expectations in the consultation. *Best Practice & Research Clinical Rheumatology*, 24(2), 219–225. doi:10.1016/j.berh.2009.12.013
- Mast, M. S. (2007). On the importance of nonverbal communication in the physician-patient interaction. *Patient Education and Counseling*, 67(3), 315–318. doi:10.1016/j.pec.2007.03.005
- Mast, M. S., Hall, J. A., Klöckner, C., & Choi, E. (2008). Physician gender affects how physician nonverbal behavior is related to patient satisfaction. *Medical Care*, 46(12), 1212–1218.

- Mehrabian, A. (1969). Some referents and measures of nonverbal behavior. *Behavior Research Methods and Instrumentation*, 1, 201–207. doi:10.3758/BF03208096
- Melzack, R., & Wall, P. (1965). Pain mechanisms: A new theory. *Science*, 150, 971–979.
- Merskey, H., & Bogduk, N. (1994). Part III: Pain terms, a current list with definitions and notes on usage. In *Classification of chronic pain: Descriptions of chronic pain syndromes and definitions of pain terms* (2nd ed., pp. 209–214). Seattle: IASP Press. Retrieved from <http://www.iasp-pain.org>.
- Morse, D. S., Edwardsen, E. A., & Gordon, H. S. (2008). Missed opportunities for interval empathy in lung cancer communication. *Archives of Internal Medicine*, 168(17), 1853–1858. doi:10.1001/archinte.168.17.1853.
- Moskowitz, D. S. (1994). Cross-situational generality and the interpersonal circumplex. *Journal of Personality and Social Psychology*, 66, 921–933.
- Moskowitz, D. S., & Zuroff, D. C. (2005). Assessing interpersonal perceptions using the interpersonal grid. *Psychological Assessment*, 17(2), 218–230. doi:<http://dx.doi.org/10.1037/1040-3590.17.2.218>
- Norman, S. A., Lumley, M. A., Dooley, J. A., & Diamond, M. P. (2004). For whom does it work? Moderators of the effects of written emotional disclosure in a randomized trial among women with chronic pelvic pain. *Psychosomatic Medicine*, 66, 174–183. doi:10.1097/01.psy.0000116979.77753.74
- Oxtoby, K. (2010). *Consultation times*. Retrieved July 27, 2015, from <http://careers.bmj.com/careers/advice/view-article.html?id=20001044>
- Padfield, D. (2002). Believing is seeing. *Clinical Medicine*, 2(6), 571–573. doi:10.7861/clinmedicine.2-6-571
- Padfield, D. (2003). *Perceptions of Pain* (1st ed.). Stockport: Dewi Lewis.
- Padfield, D. (2011). “Representing” the pain of others. *Health*, 15(3), 241–257. doi:10.1177/1363459310397974

- Padfield, D., Janmohamed, F., Zakrzewska, J. M., Pither, C., & Hurwitz, B. (2010). A slippery surface... can photographic images of pain improve communication in pain consultations? *International Journal of Surgery*, 8(2), 144–150. doi:10.1016/j.ijssu.2009.11.014
- Padfield, D., Zakrzewska, J., & C de C Williams, A. (2015). Do photographic images of pain improve communication in the pain consultation? *Pain Research & Management*, 20(3), 123–128.
- Paudyal, P., Hine, P., Theadom, A., Apfelbacher, C. J., Jones, C. J., Yorke, J., ... Smith, H. E. (2014). Written emotional disclosure for asthma. *The Cochrane Database of Systematic Reviews*, 5, CD007676. doi:10.1002/14651858.CD007676.pub2
- Pither, C. (2002). Finding a visual language for pain. *Clinical Medicine*, 2(6), 570–571. doi:10.7861/clinmedicine.2-6-570
- Roche, M. J., Pincus, A. L., Hyde, A. L., Conroy, D. E., & Ram, N. (2013). Within-person covariation of agentic and communal perceptions: Implications for interpersonal theory and assessment. *Journal of Research in Personality*, 47(4), 445–452. doi:10.1055/s-0029-1237430.Imprinting
- Roter, D. L., Frankel, R. M., Hall, J. A., & Sluyter, D. (2006). The expression of emotion through nonverbal behavior in medical visits. Mechanisms and outcomes. *Journal of General Internal Medicine*, 21(Supplement 1), S28–S34. doi:10.1111/j.1525-1497.2006.00306.x
- Roter, D. L., Geller, G., Bernhardt, B. A., Larson, S. M., & Doksum, T. (1999). Effects of obstetrician gender on communication and patient satisfaction. *Obstetrics & Gynecology*, 93(5), 635–641.
- Roter, D. L., Hall, J. A., Katz, N. R. (1988). Patient-physician communication: a descriptive summary of the literature. *Patient Education and Counseling*, 12(2), 99–119.

- Sale, J. E., Gignac, M., & Hawker, G. (2006). How “bad” does the pain have to be? A qualitative study examining adherence to pain medication in older adults with osteoarthritis. *Arthritis Care & Research*, *55*(2), 272–278. doi:10.1002/art.21853
- Salmon, P. (2006). The potentially somatizing effect of clinical consultation. *CNS Spectrums*, *11*(3), 190–200.
- Schermuly, C. C., & Scholl, W. (2012). The discussion coding system (DCS): A new instrument for analyzing communication processes. *Communication Methods and Measures*, *6*, 12–40. doi:10.1080/19312458.2011.651346
- Smith, J. A., & Osborn, M. (2007). Pain as an assault on the self: An interpretative phenomenological analysis of the psychological impact of chronic benign low back pain. *Psychology & Health*, *22*, 517–534. doi:10.1080/14768320600941756
- Stewart, M. A. (1995). Effective physician-patient communication and health outcomes: A review. *Canadian Medical Association Journal*, *152*(9), 1423–1433.
- Street, R. L., & Buller, D. (1987). Nonverbal reponse patterns in physician-patient interactions: a functional analysis. *Journal of Nonverbal Behavior*, *11*, 234–253.
- Street, R. L., Makoul, G., Arora, N. K., & Epstein, R. M. (2009). How does communication heal? Pathways linking clinician-patient communication to health outcomes. *Patient Education and Counseling*, *74*(3), 295–301. doi:10.1016/j.pec.2008.11.015
- Tracey, T. J. G., Ryan, J. M., & Jaschik-Herman, B. (2001). Complementarity of interpersonal circumplex traits. *Personality and Social Psychology Bulletin*, *27*(1997), 786–797. doi:10.1177/0146167201277002
- Van Dulmen, A. M., & Bensing, J. M. (2000). Gender differences in gynecologist communication gender differences in gynecologist communication. *Women Health*, *90*, 49–61. doi:10.1300/J013v30n03
- Verheul, W., Sanders, A., & Bensing, J. (2010). The effects of physicians’ affect-oriented communication style and raising expectations on analogue patients’

anxiety, affect and expectancies. *Patient Education and Counseling*, 80, 300–306.

Weinman, J. (2007). Healthcare professional-patient communication. In S. Ayers, A. Baum, I. C. McManus, S. Newman, K. Wallston, J. Weinman, & R. West (Eds.), *Cambridge Handbook of Psychology, Health and Medicine* (2nd ed., pp. 435–438). Cambridge: Cambridge University Press.

Wikström, B. (2003). Health professionals' experience of paintings as a conversation instrument: a communication strategy at a nursing home in Sweden. *Applied Nursing Research*, 16(3), 184–188. doi:10.1016/S0897-1897(03)00049-1

Williams, A. C. de C., Eccleston, C., & Morley, S. (2012). Psychological therapies for the management of chronic pain (excluding headache) in adults. *The Cochrane Library*, (11), CD007407. doi:10.1002/14651858.CD007407.pub3



### **Part 3: Critical Appraisal**

## **Introduction**

This critical appraisal will be a personal reflection of my experiences during the process of watching the pain consultations for part 2 of this thesis. I will offer personal reflections on the role of loss in relation to patients' lived experiences of chronic pain, empathy within the clinician-patient relationship, and the emotional impact of witnessing patients talk about the negative impact of pain on the researchers who were rating the consultations. I will also discuss implications for future clinical and research practice.

### **Patients reported experiences of loss as a result of chronic pain**

Living with chronic pain has been described by patients as an immiserating experience (Chapman & Gavin, 1999) and despite available treatment options complete elimination of pain for those affected is uncommon (Dansie & Turk, 2013). The role of loss in patients' lives was commonly described by the majority of patients included in the study, particularly the loss of one's sense of self (Harris, Morley & Barton, 2003). This is consistent with findings from a number of qualitative studies that explore the impact of chronic pain on the patients' lives (e.g. Gustafsson, Ekholm, & Ohman, 2004; Osborn & Smith, 1998).

Patients' conversations with clinicians were often characterised by comparisons between their lives before pain versus their present lives with pain. For instance, one patient reported leading a full life, which involved frequently socialising and remaining active through exercise. However, since having pain he reported no longer recognising these parts of himself. He avoided contact with others by not going to work and noticed himself becoming increasingly irritable with loved ones. Another patient also spoke about the impact of her pain on family life. She reported no longer being able to play with her grandchildren or go out on family trips due to becoming increasingly tired from the smallest amounts of activity.

In some of the consultations, patients also reported being perceived negatively by others as a result of having chronic pain or fearing that they would be, which was consequently experienced as a further loss to how they viewed themselves (Smith, & Osborn, 2007). One patient's story that really struck me was a description of how pain could make a person become invisible. Since having pain, this patient has been unable to walk without the assistance of a walking stick. However, since using this she believed that she was no longer sexually desirable to men because they no longer approached her (even when she got dressed up), which was a previously common experience for her before having pain. This example really highlighted to me some of the social consequences of living with chronic pain (Ojala et al., 2014), which I had not really considered before. All three patients reported that those without pain could not truly understand what their experience of living with pain was like, which they reported led them to experience significant loneliness.

#### *Personal reflections and clinical implications*

While watching the consultations, I began reflecting on my role as a trainee clinical psychologist and how I would make sense of the information patients were bringing in my own clinical work. This helped me to explore some of the clinical implications of my research. I reflected on the possibility that the losses experienced as a result of living with chronic pain may have become the dominant story (Morgan, 2000) that the majority of patients held about themselves. From my clinical experience of working with patients from marginalised groups (e.g. people with intellectual disabilities, and refugees and asylum seekers) dominant stories of this nature are not uncommon. However, they can be disempowering due to their focus on the person's disabilities, inadequacies, and failures (Morgan, 2000), which in turn can prolong distress. Despite this, it made me think that there may have been something validating for patients to have such conversations with clinicians, particularly, because research suggests that

conversations of this kind are given less attention within medical consultations (Farin, Gramm, & Schmidt, 2012; Levinson, Hudak, & Tricco, 2013).

Through clinical psychology training, I have learned the importance of putting the behaviours patients display, or the information they provide, into the context of their lives. After a day of rating three consultations, in all of which patients spoke to clinicians about the losses in their lives, given my clinical background the research assistant asked me why I thought these conversations had happened. He asked this because he reported being struck by how open patients were with clinicians even though the consultations were their first with them. This led me to reflect and discuss with him my thoughts on the possible explanations for this.

First, I thought about the context of the pain consultation itself. Clinicians conducted comprehensive pain assessments, which involved asking patients about the impact of the pain on their mood, daily functioning and overall quality of life (Dansie, & Turk, 2013). Therefore, such conversations may have emerged as patients were prompted to respond to these questions, and access to such information is pertinent for clinicians to develop a biopsychosocial formulation of a patients' pain experiences (Dansie & Turk, 2013; Gatchel, Peng, Peters, Fuchs & Turk, 2010). Another possibility I discussed was that such conversations in consultations may have emerged as a consequence of the negative impact pain can have on one's social role. Many of the patients in the study reported feeling as if they were a burden to others as a result of their pain, which is consistent with qualitative research that suggest that patients with chronic pain have reported a fear of becoming a burden as a result of their difficulties or being useless to family members and friends (Smith & Osborn, 2007). Therefore, it is possible that patients viewed the pain consultation as an opportunity to discuss concerns with clinicians, which they may not have felt able to do with loved ones due to such beliefs.

The final explanation I reflected on was the fact that patients had experienced difficulties with pain for some time. The median pain duration of the patients included

in the study was 9 years, so some patients had experienced pain for longer than this. Despite the duration of chronic pain, it is likely that all patients had a history of numerous medical visits and treatments with varying degrees of success (Eccleston, Morley & Williams, 2013). Pain assessment can be understood as a social transaction (Schiavenato & Craig, 2010; Tait, 2013), and as such people's behaviour is influenced by their previous experiences, particularly in previous consultations. Therefore, patients' highlighting the losses they have experienced as a result of pain may have been their way of conveying the level of chronicity, and the seriousness of their condition (Main, Buchbinder, Porcheret & Foster, 2010; Werner & Malterud, 2003).

The clinical implications of this for clinicians conducting pain consultations is the importance of establishing a balance between listening to concerns in order to respectfully validate patients' lived experiences and obtaining information about patients' strengths, abilities and resources despite pain that can enable development of a more useful formulation, which can inform interventions that provide helpful coping strategies. Such information may also provide a means of challenging negative dominant narratives about chronic pain patients. Also apparent is the importance of avoiding a pathologising approach to patients' reported experiences, which can be achieved through use of normalising and non-blaming language (Eccleston et al., 2013). Clinicians should be mindful of patients' chronic pain trajectories and the multiple losses they may have experienced along the way. Considering this information as part of the formulation and linking this to patients' past experiences of pain consultations may be a helpful way for clinicians to begin to address some of the disabling beliefs that patients with chronic pain hold about themselves (Eccleston et al., 2013).

### **Empathy in the clinician-patient relationship**

Empathy has been defined as "the ability to understand and share the feelings of another" (Oxford University Press, 2015). This involves taking the other person's

perspective to understand what they might be feeling, and having the ability to respond to this in a respectful and compassionate way (Singh, Bianchi-Berthouze & Williams, 2014). Patients with chronic pain often experience a lack of empathy from others, including healthcare professionals. For instance, the nature of chronic pain means that it persists without clear underlying pathology (International Association for the study of Pain (IASP), 1986). Therefore, its invisibility can make others question whether there is actually something 'wrong' (Singh et al., 2014).

When searching the literature on patients' emotional disclosures within medical consultations for the introduction section of the empirical paper, lots of the studies I came across stated that clinicians often miss empathic opportunities (patient statements or disclosures that could elicit an empathic response from a listener) that patients provide (e.g. Morse, Edwardsen & Gordon, 2008). While watching some of the consultations, the research assistant and I noticed a small number of instances like this. For instance, one patient spoke about the significant, negative impact his pain had had on his mood and sleep. However, the clinician did not appear to respond to the patient and continued to make notes. This instance was awkward for the research assistant and me to watch because we could see the impact this had on patient (e.g. he stopped talking).

### *Personal reflections*

When I initially wrote the discussion section for the empirical paper there was a definite bias towards focusing on the experience and needs of the patient and his or her role in the consultation interactions. I believe that this bias may have stemmed from the instances of missed empathic opportunities by clinicians I had seen while watching some of the consultations and reading literature in this area that is predominantly focused on patients' needs. This tendency to focus on patient factors may also have come from my training, and having a keen interest in working with marginalised groups to ensure that their voices are heard. Similarly, I hold the belief

that the patient is the expert in his or her life and experiences, and feel that empathy is pertinent to validating patient's emotions.

I was able to mitigate this bias however through research supervision, as I was encouraged to put myself in the shoes of the clinician. This was important for me to do because only focusing on what patients wanted from the consultations could have resulted in me neglecting to pay sufficient attention to potentially important clinician factors and duties in the consultation. Therefore, supervision allowed me to examine my blind spots and recognise my own prejudices and assumptions and how these may influence the research. There are two people involved within the clinician-patient relationship. Therefore, neglecting the clinician's role in the interaction could lead to researcher bias (i.e. a biased reporting and interpreting of outcomes). Similarly, if I were working as a clinical psychologist in this context, empathising with the needs of the clinician would make me much more potentially helpful in joint working, planning interventions and offering consultation to other clinicians in the multidisciplinary team.

From supervision, I searched the literature again and started to reflect more broadly on other possible explanations for why clinicians may miss empathic opportunities in response to patient emotional disclosures. One explanation was that consultations involve multiple tasks that clinicians and patients have to work through within short space of time, including the assessment of the presenting problem, discussion about diagnosis where appropriate and available treatment options (Main et al., 2010). Additionally, research suggests that empathy can diminish with clinical experience (Baider, 2009), but this could be a product of clinicians needing to down-regulate their own emotions in response to repeatedly observing the pain and distress of others (Decety, Yang & Cheng, 2010), to ensure they are resilient enough to cope with the emotional demands of working with chronic pain patients (Eccleston et al., 2013). There is also a danger of clinicians over-empathising with patients' emotional disclosures because this may cause clinicians to become overwhelmed or distressed themselves (Eccleston et al., 2013). If this happens clinicians may not be able to be

cognitively present (Williams & Gessler, 2010) within the consultation and offer patients the support they require. A final possibility I reflected on of why clinicians may miss empathic opportunities with patients is that clinicians may fear that engaging in such conversations might further perpetuate patients' distress (Williams & Gessler, 2010). This explanation connected with me as this was something I worried about in the early stages of my clinical training.

Irrespective of the reasons outlined above, it is good practice for clinicians to look after their own mental health and recognise any of these signs in their practice. Seeking support from supervisors and colleagues in the multidisciplinary team where possible can be an effective way of ensuring safe practice (Eccleston et al., 2013). I have learned that there are challenges faced by both the patient and clinician in the pain consultation and to ensure that this is appropriately addressed both need equal consideration.

### **The emotional impact of watching the pain consultations**

In some consultations, patients reported experiencing thoughts of suicide and self-harm because their experiences of pain had become unbearable. For instance, one patient described her abdominal pain as so excruciating that she frequently had thoughts of stabbing herself in the stomach with a knife. She spoke about this in relation to one of the pain images used that was of a knife piercing a strawberry, with a pool of juice/blood. She explained her reasons for such thoughts to the clinician, stating that she was fed up with experiencing abdominal pain and that at least pain from a stab wound be a different type of pain. The clinician responded to the patient in an empathic and thoughtful way and acknowledged and validated her distress. The clinician then went on to conduct a risk assessment to determine the frequency of the patient's self-harming thoughts, and whether she had also experienced thoughts of suicide. As a trainee clinical psychologist a part of my training has been learning how to sit with such disclosures in the room and knowing how to respond appropriately



and assess risk. However, despite my training this was still very emotionally challenging to watch.

The research assistant I was working with to rate the videos did not have a clinical background. As a result of unintentionally underestimating the impact on the researchers of some of the emotional disclosures made by patients, the research team organised personal supervision for him with a clinical psychologist who was not connected to the project, but was experienced in working with patients with chronic pain. I too discussed the emotional impact of observing some of the discussions between patients and clinicians with my research supervisor, who is also an experienced clinical psychologist and researcher in the area of chronic pain. In addition to having our own individual supervision sessions, the research assistant and I also found it useful to have short debriefing sessions together at the end of each consultation that we had rated. This involved asking one another what, if anything had come up while watching the consultations that were difficult for either of us. This provided us with a safe space to check in with one another and also acted as a form of peer support if either one of us had experienced any distress. For me, I reflected on the fact that I often took my health for granted and at times felt guilty about this, having heard patients speak about their negative experiences of living with chronic pain.

By reflecting on these experiences during individual research supervision and the debriefing sessions with the research assistant, I learned that there are often benefits and challenges to conducting worthwhile research with clinical populations like patients with chronic pain (Singh et al., 2014). I also learned the importance of being mindful of my own emotions in response to the material I was viewing, and taking regular breaks in between rating the videos.

## **Conclusion**

Overall this critical appraisal has highlighted that a person's experience of chronic pain is not just a physical one. Pain affects a person's sense of self and social relationships. Discussing patients' losses in pain consultations is one way of validating their lived experiences and legitimatising their pain (Smith & Osborn, 2007). Therefore, it is important to consider this in the consultation. However, discussions with patients about socio-emotional concerns need to be balanced with the other demands of the consultation. Clinicians' ability to empathise with patients is pertinent, particularly when emotional disclosures are made. However, expecting a clinician to remain emotionally in tune with the patients at all times throughout the consultation is also unrealistic. The needs and wellbeing of the clinician also merit consideration if they are to provide patients with the best service possible. Going forward I have learned the importance of supervision in research as well as clinical practice.

## References

- Baider, L. (2009). Physicians' hidden distress: Confrontation with their own emotions. *Psycho-Oncology, 18*, S5–S6.
- Chapman, C. R., & Gavin, J. (1999). Suffering: The contributions of persistent pain. *Lancet, 353*, 2233–2237.
- Dansie, E. J., & Turk, D. C. (2013). Assessment of patients with chronic pain. *British Journal of Anaesthesia, 111*(1), 19–25. doi:10.1093/bja/aet124
- Decety, J., Yang, C. Y., & Cheng, Y. (2010). Physicians down-regulate their pain empathy response: An event-related brain potential study. *Neuroimage, 50*(4), 1676–1682.
- Eccleston, C., Morley, S., & Williams, C. de C. A. (2013). Psychological approaches to chronic pain management: Evidence and challenges. *British Journal of Anaesthesia, 111*(1), 59–63.
- Farin, E., Gramm, L., & Schmidt, E. (2012). Taking into account patients' communication preferences: Instrument development and results in chronic back pain patients. *Patient Education and Counseling, 86*(1), 41–48. doi:10.1016/j.pec.2011.04.012
- Gatchel, R. J., Peng, Y. B., Peters, M. L., Fuchs, P. N., & Turk, D. C. (2010). The biopsychosocial approach to chronic pain: Scientific advances and future directions. *Psychological Bulletin, 133*(4), 581–624. doi:10.1037/0033-2909.133.4.581
- Gustafsson, M., Ekholm, J., & Ohman, A. (2004). From shame to respect: Musculoskeletal pain patients' experience of a rehabilitation programme, a qualitative study. *Journal of Rehabilitation Medicine, 36*, 97–103.
- Harris, S., Morley, S., & Barton, B. S. (2003). Role loss and emotional adjustment in chronic pain. *Pain, 105*, 363–370.

- International Association for the study of Pain (IASP). (1986). Classifications of chronic pain: Descriptions of chronic pain syndromes and definitions of pain terms. *Pain*, 27(Suppl. 3), S1–S226.
- Levinson, W., Hudak, P., & Tricco, A. C. (2013). A systematic review of surgeon-patient communication: Strengths and opportunities for improvement. *Patient Education and Counseling*, 93(1), 3–17. doi:10.1016/j.pec.2013.03.023
- Main, C. J., Buchbinder, R., Porcheret, M., & Foster, N. (2010). Addressing patient beliefs and expectations in the consultation. *Best Practice & Research Clinical Rheumatology*, 24(2), 219–225. doi:10.1016/j.berh.2009.12.013
- Morse, D. S., Edwardsen, E. A., & Gordon, H. S. (2008). Missed opportunities for interval empathy in lung cancer communication. *Archives of Internal Medicine*, 168(17), 1853–1858. doi:10.1001/archinte.168.17.1853.
- Ojala, T., Häkkinen, A., Karppinen, J., Sipilä, K., Suutama, T., & Piirainen, A. (2014). Chronic pain affects the whole person: A phenomenological study. *Disability and Rehabilitation*, 37(4), 363–371. doi:10.3109/09638288.2014.923522
- Osborn, M., & Smith, J. A. (1998). The personal experience of chronic benign lower back pain: An interpretative phenomenological analysis. *British Journal of Health Psychology*, 3, 65–83.
- Oxford University Press. (2015). *Empathy*. *Oxford dictionaries: Language matters*. Retrieved August 01, 2015, from <http://www.oxforddictionaries.com/definition/english/empathy>
- Schiavenato, M., & Craig, K. D. (2010). Pain assessment as a social transaction: Beyond the “gold standard.” *The Clinical Journal of Pain*, 26(8), 667–676. doi:10.1097/AJP.0b013e3181e72507
- Singh, A., Bianchi-Berthouze, N., & Williams, C. de C. A. (2014). Walk a mile in my shoes: Reflecting on studies with people with chronic pain. In *Proc. CHI '14*. Toronto: ACM Press.

- Smith, J. A., & Osborn, M. (2007). Pain as an assault on the self: An interpretative phenomenological analysis of the psychological impact of chronic benign low back pain. *Psychology & Health, 22*, 517–534. doi:10.1080/14768320600941756
- Tait, R. C. (2013). Pain assessment-an exercise in social judgment. *Pain, 154*(5), 625–626. doi:doi: 10.1016/j.pain.2013.02.010
- Werner, A., & Malterud, K. (2003). It is hard work behaving as a credible patient: Encounters between women with chronic pain and their doctors. *Social Science and Medicine, 57*, 1409–1419. doi:10.1016/S0277-9536(02)00520-8
- Williams, A. C. de C., & Gessler, S. (2010). Empathy in cancer pain. In Paice, J. A., Rae F Bell, M. D. P. D., Eija A Kalso, M. D., & O. A. Soyannwo (Eds.), *Cancer pain: From molecules to suffering*. International Association for the Study of Pain.

## Appendices

### Appendix 1: Interpersonal grid

Adapted terms used in the study have been underlined.

#### Positive Dominance

#### Negative Affiliation

#### Positive Affiliation

#### Negative Dominance

Moskowitz and Zuroff (2005) ©

## Appendix 2: Confirmation of favourable ethical approval



07 July 2009

Ms Deborah Padfield



Dear Ms Padfield,

**Study Title:** face 2 face an analysis of the effect of photographic intervention on medical dialogue within pain consultations (ie use of photographs) an exploration of portraiture with facial pain patients and clinicians

**REC reference number:** 09/H0801/51

Thank you for your letter of 10 June 2009, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information was considered at the meeting of the Committee held on 18 May 2009. A list of the members who were present at the meeting is attached.

### Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

### Ethical review of research sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

The favourable opinion applies to the following research site(s):

Research Site	Principal Investigator / Local Collaborator	
	Ms Deborah G Padfield	

## Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

For NHS research sites only, management permission for research (“R&D approval”) should be obtained from the relevant care organisation(s) in accordance with NHS research governance arrangements. Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>. *Where the only involvement of the NHS organisation is as a Participant Identification Centre, management permission for research is not required but the R&D office should be notified of the study. Guidance should be sought from the R&D office where necessary.*

*Sponsors are not required to notify the Committee of approvals from host organisations.*

**It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).**

## Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

<i>Document</i>	<i>Version</i>	<i>Date</i>	
Patient Invitation Letter - Consultation Filming	1.0	17 March 2009	
CV - Principal Investigator		15 April 2009	
Questionnaire: Study Group - reference to images	1.0	17 March 2009	
Questionnaire: Baseline Consultation Group	1.0	17 March 2009	
Covering Letter		15 April 2009	
Protocol	1.0	17 March 2009	
Investigator CV			
Application	2.0	15 April 2009	
Clinician Consent Form	1.0	17 March 2009	
Clinician Invitation Letter	1.0	17 March 2009	
Clinician Information Leaflet	1.0	17 March 2009	
GP/Consultant Information Sheets	1.0	17 March 2009	
Questionnaire: Study Group - reference to images	1.0	17 March 2009	
Questionnaire: Baseline Consultation Group	1.0	17 March 2009	
Letter of Funding - ACE		24 September 2008	
Peer Review	AHCR	19 August 2008	
██████ Web Advertisement - Workshops		17 March 2009	
██████ Web Advertisement - Whole Project		17 March 2009	
Patient Invitation Letter - ██████████	2.0	10 June 2009	
Participant Consent Form: Patients	2.0	10 June 2009	



Participant Consent Form: Photographic Release Form	1.0	17 March 2009	
Covering Letter		10 June 2009	
Participant Consent Form: Clinicians	2.0	10 June 2009	
Participant Information Sheet	2.0	10 June 2009	
Participant Information Sheet: Visual Images	2.0	10 June 2009	
Participant Information Sheet: Clinicians	2.0	10 June 2008	
Letter of invitation to participant	2.0	10 June 2009	

### Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

### After ethical review

Now that you have completed the application process please visit the National Research Ethics Service website > After Review

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

The attached document "*After ethical review – guidance for researchers*" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email

[Redacted]

**09/H0801/51**

**Please quote this number on all correspondence**

Yours sincerely

[Redacted Signature]

Email: [Redacted]