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Training primary care providers in opioid deprescribing and chronic pain management based on local guidance: a pre- post study of attitude change

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Abstract

Background. *Local chronic non-cancer pain guidance recommends that general practitioners should consider opioid deprescribing and referral to multidisciplinary healthcare providers for behaviourally based treatments. We designed a training package called AIMM (Assess, Inform, Manage and Monitor) to reinforce this stewardship.*

Aim. *To identify whether participation in AIMM training effectively aligned clinicians' attitudes with local guidance for treating chronic non-cancer pain.*

Design and setting. *In 2014–15, the AIMM training was tested using a pre-post-test non-randomised design at two sites in NSW, Australia. The primary outcome measure was an 11-item, study-specific, pain attitude questionnaire (PAQ).*

Method. *Step one of AIMM training involved online completion of the PAQ and review of a specialist pain website. Step two involved attendance at two face-to-face, two-hour interactive workshops led by pain experts who addressed opioid deprescribing and switching to broader care. A repeat PAQ survey was completed at the conclusion of the second workshop.*

Results. *Nineteen participants attended the workshops, including general practitioners (n = 7), nurses (n = 5), exercise physiologists (n = 2), a dietitian (n = 1), community pharmacists (n = 2) and psychologists (n = 2). Significant shifts in six attitudes occurred, including prescribing less pain medication, greater emphasis on social reconnection, increasing planned activity and adopting anti-inflammatory nutrition (p < .05). Responses to the item regarding expectations of a positive recovery was not aligned with local guidance and no significant attitudinal change was found. Four other attitudes were aligned with local guidance at baseline and did not change during the study.*

Conclusions. *Online information and face-to-face training can achieve a change in healthcare provider attitudes towards non-pharmacological treatment of chronic non-cancer pain. Further work is needed to assess whether attitudinal changes are maintained and translate into behavioural change.*

Key words: attitudes, chronic pain, deprescribing, medical education, opioids, primary healthcare

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INTRODUCTION

Non-cancer pain is currently considered 'chronic' when it has persisted for more than three months and is associated with significant emotional distress and functional disability (Meskey & Bogduk 1994). Recent proposals suggest using the term 'chronic primary pain' when the pain is not better accounted for by another condition (Nicholas et al. 2019). Classification aside, globally, people who experience chronic pain are most frequently managed in primary care (Becker et al. 2018). Australian data from 2013 suggest that of the 20 per cent of patients presenting to primary care with chronic pain, 56 per cent are managed by medication alone with many people being treated with prescription opioid analgesia (POA) (Harrison et al. 2012; Henderson et al. 2013).

In the past, the practice of treating people experiencing chronic non-cancer pain (CNCP) with long-term POAs was considered a viable option in well-selected cases. Careful selection excluded people with a history of substance abuse or addiction (Nielsen et al. 2015; Noble et al. 2010). The view that long-term POAs are clinically viable has been challenged by a recent pragmatic randomised clinical trial that examined the comparative effectiveness of prescription analgesics versus non-opioid medications for people experiencing chronic back, hip or knee pain (Krebs et al. 2018). There was no difference between groups in pain interference, while pain intensity and adverse effects were significantly worse in the opioid group compared to the non-opioid group (Krebs et al. 2018). Another recent pivotal study found that after discontinuation of long-term POAs, pain intensity either did not change or improved slightly (McPherson et al. 2018).

Many studies have noted the substantial harms and poor functional outcomes related to taking opioids over the long term (Ballantyne 2017;

Blanch, Pearson & Haber 2014; Chou et al. 2015; Jamison et al. 2017; Rivat & Ballantyne 2016). Further, for those people who reported a benefit in reducing pain intensity, almost half stated they would like to reduce the dose or cease their POAs completely due to adverse effects (Howe et al. 2012). This accumulation of evidence highlights the need to consider dose reduction or cessation of POAs as a health priority for people with CNCP (Hunter Integrated Pain Service [HIPS] 2014; Von Korff & Franklin 2016; Wyse et al. 2018).

However, there is a lack of information outlining effective strategies for deprescribing opioids. A recent Cochrane systematic review determined that there was insufficient evidence to draw conclusions on the effectiveness of any regimes for opioid withdrawal for people experiencing CNCP (Eccleston et al. 2017). Nonetheless, recent non-randomised clinical trials suggest that a positive outcome may result from offering a broad approach to care, including a combination of support during an opioid taper, psychological elements to target anxiety and functional components (Frank et al. 2017; Gilliam et al. 2018; Huffman et al. 2017; McPherson et al. 2018). The most commonly studied method of applying broader behaviourally based care is via 'interdisciplinary' (or fully integrated) approaches in which disciplines work together in the same location (Gatchel et al. 2014; Gilliam et al. 2018; Sullivan et al. 2017). In an Australian context, this level of service delivery is accessed by referral to tertiary pain clinics but, historically, waiting times for access to these facilities have been prolonged (Hogg et al. 2012).

Therefore, the challenge remains to organise and deliver integrated interventions in primary care through which most ongoing management of complex and chronic conditions occurs. To deliver integrated interventions in primary care, it is necessary to enhance the capacity of general practitioners (GPs) and affiliated teams of multidisciplinary healthcare providers (MHCPs) to deliver regimes similar to specialist units (Foster & Mitchell 2013; Hegney et al. 2013; Seal et al. 2017). To address this gap, we developed a Medicare-funded primary care pilot intervention called Assess, Inform, Manage and Monitor (AIMM). Under Australian Medicare rebates, people with chronic pain can access rebates for a range of allied health services using a GP-written plan called a GP Management Plan. AIMM was based on a theoretical behaviour change framework called COM-B (McKillop et al. 2011; Michie et al. 2011). The COM-B model explains patients' behaviour change from three fundamental aspects: capability, opportunity and motivation. AIMM uses GPs to work closely with a team of MHCPs (i.e., practice nurses, psychologists, dietitians, physiotherapists, exercise physiologists or other geographically available health professionals, such as occupational therapists or social workers) to provide whole-person assessment, consistent information, non-pharmacological management and monitoring. Further, AIMM supports people to enhance their self-management capability while undertaking an individualised opioid tapering regime.

To test AIMM, a real-world pain training package was designed with a particular emphasis on training GPs in deprescribing opioids and influencing MHCPs' attitudes that improved function was possible. Such training prior to pilot interventions has been successfully

implemented elsewhere (Chelimsky et al. 2013; Slater et al. 2012; Sowden et al. 2012). The AIMM training package was developed with the input of an expert panel of clinicians, including GPs, a practice nurse, clinical psychologist, community pharmacist, pain-trained physiotherapist, exercise physiologist, dietitian and a specialist pain medicine physician. AIMM was based on evidence regarding optimising non-pharmacological treatment of CNCP outlined in local health district pain management guidance (HIPS 2014).

The aim of this study was to test the effect of the AIMM training package on GPs and primary care-based MHCPs by assessing whether it resulted in attitudes more closely aligning with local guidance for deprescribing and managing people experiencing CNCP. We hypothesised that the AIMM training would significantly improve the alignment of MCHPs' attitudes to the broader whole-person recommendations provided in the training.

METHODS

ETHICAL CONSIDERATIONS

This study received ethics approval from the Hunter New England Health and University of Newcastle Human Research Ethics Committees (HNEHREC Reference No. 15/10/21/5.01; NSW HREC Reference No. LNR/15/HNE/371; SSA Reference No. LNRSSA/15/HNE/372).

SETTING AND PARTICIPANTS

Two participating AIMM pilot general practices, located in low socio-economic areas in regional NSW, Australia, provided an onsite training space. Each practice estimated they had more than 50 patients experiencing CNCP who were using POAs for more than 90 days and were willing to engage with the AIMM opioid deprescribing intervention.

Nineteen health provider participants agreed and consented to participate in the AIMM pilot. Participants included GPs (n = 7), nurses (n = 5) and MHCPs, including exercise physiologists (n = 2), a dietitian (n = 1), community pharmacists (n = 2) and psychologists (n = 2).

DATA COLLECTION

One week prior to their first face-to-face workshop, participants were invited by email to access an online pain attitude questionnaire (PAQ) (see Figure 1) to obtain their baseline attitudes. At the conclusion of the web-based questionnaire, participants were redirected to the HIPS website (HIPS 2013) on which they were asked to spend 30 minutes familiarising themselves with the available resources. At the conclusion of the second face-to-face workshop, participants completed a paper-based post-test PAQ.

Figure 1: Pain attitude questionnaire

| Questions | Where | | | | |
|-----------|---|---|---|---|----------------------|
| | 1 = Completely disagree | 2 | 3 | 4 | 5 = Completely agree |
| 1 | Opioid therapy should be reserved for people experiencing acute pain, cancer pain, for palliative care and for those with opioid dependency or addiction | | | | |
| 2 | Only after pain is significantly reduced can people address their other life issues | | | | |
| 3 | In managing people who are experiencing chronic pain it is important to understand the social and psychological factors surrounding the onset and persistence of pain | | | | |
| 4 | People experiencing pain need relief before other health providers can be of any assistance | | | | |
| 5 | Focusing on medication to reduce pain has limited benefit on people's quality of life and function over the long term | | | | |
| 6 | Once someone has experienced pain for three months it is likely to be an enduring problem | | | | |
| 7 | Assessing people who are experiencing chronic pain for depression or anxiety is always important | | | | |
| 8 | Helping people with social reconnection may help with pain management | | | | |
| 9 | Planned regular physical activity does not help reduce the pain experience for most people | | | | |
| 10 | Addressing sleep problems helps people cope better with their pain experience | | | | |
| 11 | Helping people adopt a healthy lifestyle to reduce widespread inflammation may help with pain management (Scoring 2,4,6,9 are reverse scored) | | | | |

INTERVENTION

Pre-workshop online training involved clinicians accessing the HIPS website (HIPS 2013) to view various clinical resources. First, clinicians were directed to view the clinical sections of the website, including a local pain stewardship document titled 'Reconsidering Opioid Therapy' (HIPS 2014). This document is based on current international evidence and professional consensus regarding opioid deprescribing for people experiencing CNCP. Clinicians were also directed to view two brief YouTube videos developed by the HIPS that were created to emphasise the key messages in pain treatment (HIPS et al. 2014a, 2014b).

A week after the pre-workshop link was emailed, clinicians met face-to-face at the first of two non-reimbursed workshop sessions. The two workshops were scheduled a week apart and titled 'AIMM to Change the Practice of Pain Medicine in Primary Care'. Each two-hour session used well-accepted training strategies, such as an interactive format, and delivered the content by clinician-trainers who were recognised as competent community opinion leaders (Hecht, Buhse & Meyer 2016). The first session highlighted current evidence relating to CNCP and the importance of behaviour change. A key message was for GPs to initiate a conversation on gradual opioid deprescribing and promote to their patients the potential benefits of switching to effective self-

management strategies, guided by a local team of MHCPs. An interactive discussion was facilitated regarding specific roles for each MHCP to achieve a range of behavioural targets, including increased physical activity levels and increased supportive connections. The second session focused on consolidating pain management skills using role plays such as working with a person who is convinced they require a higher medication dose, as they perceive the opioids are no longer working (Alford 2013; Ballantyne et al. 2012). The clinicians observed the therapeutic communication style used by the trainers and discussed and analysed role plays as time permitted (Jensen et al. 2010; Swinglehurst et al. 2012).

Hard copy AIMM intervention training manuals were provided at the workshops, including role play scripts. Copies of the website resources were also provided on a USB stick at the first face-to-face workshop (Giguère et al. 2012). The manuals provided were not intended as a rigid set of treatment directives, but rather a more flexible guide to the application of the components necessary to enable behaviour change (Michie 2005). The entire training package was accredited continuing education for GPs and nurses. The face-to-face workshops for each of the practices were led by expert pain clinicians (CH & HR) and took place between November 2014 and May 2015.

OUTCOME MEASURES

The primary outcome measure was change in score on the PAQ (see Table 1).

Table 1: AIMM workshop attitudes at baseline and post-test, expressed as mean (standard deviation), n = 19

| Variable | Baseline Mean (SD) | Post-workshop Mean (SD) | z score and p value* |
|---|--------------------|-------------------------|-------------------------|
| Opioid therapy should be reserved for people experiencing acute pain, cancer pain, for palliative care and for those with opioid dependency or addiction | 3.84 (0.83) | 4.05 (1.17) | z = -0.939, p = .3476 |
| Only after pain is significantly reduced can people address their other life issues | 3.79 (1.18) | 1.78 (.97) | z = 3.321, p = .0009** |
| In managing people who are experiencing chronic pain it is important to understand the social and psychological factors surrounding the onset and persistence of pain | 4.84 (0.37) | 4.89 (0.31) | z = -0.577, p = .5637 |
| People experiencing pain need relief before other health providers can be of any assistance | 3.73 (1.28) | 1.68 (0.94) | z = -3.317, p = .0009** |
| Focusing on medication to reduce pain has limited benefit on people's quality of life and function over the long term | 4.36 (0.68) | 4.84 (0.37) | z = -2.714, p = .0067** |

| | | | |
|--|-------------|-------------|------------------------------------|
| Once someone has experienced pain for three months it is likely to be an enduring problem | 2.89 (0.93) | 3.21 (1.35) | $z = 0.804$, $p = .4213$ |
| Assessing people who are experiencing chronic pain for depression or anxiety is always important | 4.68 (0.47) | 4.78 (0.41) | $z = -0.816$, $p = .4142$ |
| Helping people with social reconnection may help with pain management | 4.47 (.61) | 4.89 (.31) | $z = -2.638$, $p = .0083^{**}$ |
| Planned regular physical activity does not help reduce the pain experience for most people | 4.05 (1.07) | 1.36 (0.49) | $z = -3.801$, $p = .0001^{**}$ |
| Addressing sleep problems helps people cope better with their pain experience | 4.42 (0.69) | 4.73 (0.56) | $z = 1.704$, $p = .0885$ |
| Helping people adopt a healthy lifestyle to reduce widespread inflammation may help with pain management | 4.21 (.97) | 4.73 (0.45) | $z = -2.153$, $p = .0313^{**}$ |
| Notes: Levels 1–5 (1 = completely disagree to 5 = completely agree) | | | |
| * p values for differences between pre- and post-workshop scores using Wilcoxon signed ranks test | | | |
| ** Significant | | | |

PAIN ATTITUDE QUESTIONNAIRE

An 11-item, English language, study-specific PAQ (see Figure 1) was developed by the research team using the relevant literature to examine attitudes towards the treatment of people experiencing CNCP in a manner that was applicable to GPs and a range of MHCPs. All items were tested for face validity with clinicians and behavioural researchers and refined accordingly. The PAQ addressed a range of concepts covered in evidence-informed, local opioid stewardship documents (HIPS 2014). Items measured biomedical orientation (e.g., 'People experiencing pain need relief from medications before other health providers can be of any assistance') and broader whole-person orientation (e.g., 'Addressing sleep problems helps people cope better with the pain experience') to managing chronic pain. For each item, participants gave their responses on a 5-point Likert scale (i.e., 1 = completely agree to 5 = completely disagree). Questions were presented in the survey using a balance of positive (pro-evidence) and negative (anti-evidence) framing. The negative questions (i.e., 2, 4, 6 and 9) were re-coded to be unidirectional at analysis.

STATISTICAL ANALYSIS

The quantitative data from the PAQ were analysed using Stata/IC 13.1. Descriptive statistics and subsequent analysis using the Wilcoxon rank sum test were used to test the null hypothesis of no mean difference of responses on each of the PAQ items over the two time periods. The level of significance was set at $p < .05$ for all tests.

RESULTS

Of the 19 invited participants, all attended both workshops and completed both PAQs. As shown in Table 1, participants' attitudes demonstrated statistically significant shifts towards local pain stewardship in the following six items: 'Only after pain is significantly reduced can people address their other life issues', 'People experiencing pain need relief before other health providers can be of any assistance', 'Focusing on medication to reduce pain has limited benefit on people's quality of life and function over the long term', 'Helping people with social reconnection may help with pain management', 'Planned regular physical activity does not help reduce the pain experience for most people' and 'Helping people adopt a healthy lifestyle to reduce widespread inflammation may help with pain management'.

The attitude 'Once someone has experienced pain for three months it is likely to be an enduring problem' was not aligned with local guidance at baseline and failed to demonstrate a statistically shift in attitude. The four remaining attitudes, already aligned with guidance, did not achieve statistically significant attitude shifts.

DISCUSSION

The primary aim of this study was to test whether a training package for GPs and MHCPs in primary care settings aligned perceptions regarding the nature and treatment of people experiencing CNCP with treatment approaches outlined in available local pain stewardship documents (HIPS 2014). While pain is a complex experience, the results of this study suggest that brief, targeted training is useful in influencing clinicians' attitudes towards evidence-informed treatment for CNCP.

The shift away from a focus on medications to reduce pain suggests that clinicians' attitudes can successfully align with the knowledge that long-term opioids likely hinder functional improvement for most patients. Traditionally, intervention effectiveness has been assessed by a reduction in pain scores, but this move towards patient-centred aspects is important if the delivery of behaviourally based care is to proceed, particularly when the restoration of role function is the goal (Loeser & Cahana 2013; Parchman et al. 2017).

A ceiling effect most likely explains why some attitudes failed to change (i.e., 'In managing people who are experiencing chronic pain it is important to understand the social and psychological factors surrounding the onset and persistence of pain' and 'Assessing people who are experiencing chronic pain for depression or anxiety is always important').

The attitude 'Once someone has experienced pain for three months it is likely to be an enduring problem' failed to shift in the workshop despite the workshop content emphasising that improvements in physical and emotional functioning are possible when patients adhere to active treatments, including opioid tapering (Butow & Sharpe 2013). It is possible that this was a deeply engrained attitude or that the participants felt that generic messages about expected recovery may

constitute false reassurance (Hasenbring & Pincus 2015). It is also possible that this item may have been challenging for participants, given the imprecise wording might evoke a wide variety of patient circumstances beyond the intended patient group.

The results of this simple pre-test-post-test study with a small sample need to be interpreted with caution. While it appears that the training program was effective in partly changing clinicians' attitudes, it does not provide robust evidence that actual behaviour will change or that any attitudinal change will be enduring. In Australian settings, other researchers have shown that training provided to early-career GPs regarding deprescribing behaviour has done little to change deprescribing decisions (Holliday et al. 2017). Overseas researchers have found similar positive attitudes reported at guideline training workshops with little actual use reported in actual practice (Chang et al. 2016). This contrasts with experiences in the United States of America (US), where the rise of prescription opioids and related harms may have been exacerbated by an insurance system that severely limits the accessibility of interdisciplinary care programs and more expensive non-opioid analgesic medications (Webster 2016). The epidemic proportion of opioid use in the US has necessitated many risk mitigation strategies (Webster 2016). One US initiative has shown that a multifaceted training intervention can be effective in assisting primary care providers to help patients achieve opioid dose reduction, at least when patients are on higher morphine equivalent doses (Von Korff 2011, 2012).

LIMITATIONS

We used a non-validated outcome measure, the PAQ, in our study. There are few tools available to measure MHCPs' attitudes and beliefs about CNCP (Bishop, Thomas & Foster 2007). One potential option, a validated pain, attitudes and beliefs scale (Ostelo et al. 2003), was not used, as it specifically examines attitudes regarding low back pain. We may also have encountered a ceiling effect with some of the questions in the PAQ. Further, our instructions did not explicitly state that the PAQ related to people experiencing CNCP for whom functional recovery was the therapeutic goal. Along with imprecision around PAQ item wording, this may have influenced MHCPs' responses.

CONCLUSION

Online information and face-to-face training emphasising key messages about the nature of CNCP was partially successful in achieving its aim of attitudinal alignment with local guidance for treating CNCP, including deprescribing. Further refinement of the program may identify strategies for changing the remaining attitudes. Future research needs to determine whether attitudinal changes were maintained or whether they were related to changes in clinician behaviour, particularly prescriber behaviour, which is an area for future research (Johnson & May 2015; Wightman & Nelson 2016). Further work would be required prior to obtaining broader professional endorsement and dissemination of the resources.

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Conflict of Interest

We wish to confirm that there are no known conflicts of interest associated with this publication and there has been no direct or indirect financial support for this work that could have influenced its outcome.

Competing Interests

None declared.

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