

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Knowledge and attitudes of Australian general practitioners towards medicinal cannabis: a cross-sectional survey
AUTHORS	Karanges, Emily; Suraev, Anastasia; Elias, Natalie; Manocha, Ramesh; McGregor, Iain

VERSION 1 – REVIEW

REVIEWER	Ethan Russo, MD International Cannabis and Cannabinoids Institute, Czech Republic
REVIEW RETURNED	18-Feb-2018

GENERAL COMMENTS	This is a very carefully performed survey. It provides an important service by highlighting the considerable educational effort required to educate Australian physicians (and those of every nationality) to the current body of knowledge on the medicinal effects of cannabis.
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REVIEWER	Ran Abuhasira Clinical Research Center, Soroka, Israel
REVIEW RETURNED	21-Feb-2018

GENERAL COMMENTS	<p>This article describes the knowledge and the attitude of a cohort of general practitioners (GPs) in Australia to medical cannabis use. The article provides interesting data for Australian physicians and policy makers. However, the study is mostly descriptive and lacks inferred results.</p> <p>Introduction Minor revision</p> <ul style="list-style-type: none">• Was the recent approval of cannabis in Australia (Page 4, first paragraph) accompanied by education programs for physicians (GPs or specialists)? If so, please elaborate on this in the introduction. <p>Methods Minor revision</p> <ul style="list-style-type: none">• The dependent variable of the logistic regression is not clear (page 7, line 13). Please specify the exact meaning of the dichotomous variable predicted in the methods section. <p>Results Major revision</p> <ul style="list-style-type: none">• I would like to see an analysis of the perceived knowledge and the current evidence we have today on cannabis. That means – a separate analysis of the GPs who perceived their knowledge as good (according to the created score) and those who perceived it as bad (you should choose a cut-off value). Do the GPs who perceived their knowledge as good really answered the questions about
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	<p>cannabis indications and adverse events according to what is currently known in the literature? Is the support of cannabis use for each indication is consistent with evidence published in large recent reviews (such as Whiting PF et al. JAMA. 2015 and the report of the National Academies of Sciences, Engineering, and Medicine of 2017)? For example, do the GPs who perceived their knowledge as good support cannabis treatment for multiple sclerosis associated spasticity (good evidence of efficacy) more than they support the treatment for cancer (anti-tumor; poor evidence of efficacy)?</p> <p>Minor revision</p> <ul style="list-style-type: none"> • Why were the participants from Sydney excluded from the question about access models (page 10, line 40)? • Please add numbers (percentages) to figures 1-4 near each response to a question. <p>Discussion</p> <p>Minor revision</p> <ul style="list-style-type: none"> • Table 1 shows significant differences between the study population and the general population of GPs in Australia. This is in addition to the medium response rate to the survey. These issues are stated in the limitations only about the sex of the respondents, but the limitation might be more general (i.e. the respondents don't represent the population of Australian GPs well enough). • Both surveys cited in references 10 and 11 are from a single state in the United States. These are not international surveys (page 13, line 9). • The following article was not cited, despite almost identical method and a shared co-author: Norberg MM, Gates P, Dillon P, Kavanagh DJ, Manocha R, Copeland J. Screening and managing cannabis use: comparing GP's and nurses' knowledge, beliefs, and behavior. Substance Abuse Treatment, Prevention, and Policy. 2012;7:31. doi:10.1186/1747-597X-7-31. <p>It should be noted in the discussion, when dealing with the rate of Australian GPs that support medical use of cannabis (page 13, lines 11-16).</p>
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REVIEWER	Gemayel Lee California Pain and Anesthesia Consultants, United States of America
REVIEW RETURNED	03-Mar-2018

GENERAL COMMENTS	Very interesting topic pertinent to current medical and societal discussion. Well-designed study with clearly defined objectives and outcomes. Results and discussion were thorough and presented clearly. Overall, this paper provides an intriguing look into Australian GP perspectives about medical cannabis.
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VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Reviewer Name: Ethan Russo, MD

This is a very carefully performed survey. It provides an important service by highlighting the considerable educational effort required to educate Australian physicians (and those of every nationality) to the current body of knowledge on the medicinal effects of cannabis.

Thank you for your comment. We appreciate you taking the time to review our manuscript.

Reviewer: 2

Reviewer Name: Ran Abuhasira

This article describes the knowledge and the attitude of a cohort of general practitioners (GPs) in Australia to medical cannabis use. The article provides interesting data for Australian physicians and policy makers. However, the study is mostly descriptive and lacks inferred results.

1. Was the recent approval of cannabis in Australia (Page 4, first paragraph) accompanied by education programs for physicians (GPs or specialists)? If so, please elaborate on this in the introduction.

The recent legislative changes to medicinal cannabis prescription in Australia were not accompanied by any formal educational seminars or programs for any type of health practitioner (GPs or specialists). We have now referred to this on Page 4, Line 13-15.

2. The dependent variable of the logistic regression is not clear (page 7, line 13). Please specify the exact meaning of the dichotomous variable predicted in the methods section.

The dependent variable has been clarified. Please see Page 7, Line 12 – 15.

3. I would like to see an analysis of the perceived knowledge and the current evidence we have today on cannabis. That means – a separate analysis of the GPs who perceived their knowledge as good (according to the created score) and those who perceived it as bad (you should choose a cut-off value). Do the GPs who perceived their knowledge as “good” really answered the questions about cannabis indications and adverse events according to what is currently known in the literature? Is the support of cannabis use for each indication is consistent with evidence published in large recent reviews (such as Whiting PF et al. JAMA. 2015 and the report of the National Academies of Sciences, Engineering, and Medicine of 2017)? Do the GPs who perceived their knowledge as good support cannabis treatment for multiple sclerosis associated spasticity (good evidence of efficacy) more than they support the treatment for cancer (anti-tumor; poor evidence of efficacy)?

Thank you for your suggestion. This is an important consideration.

We were ambivalent about creating a dichotomous score out of the perceived knowledge question as few GPs reported having ‘good knowledge’. Indeed, using a cut-off score of 15 (the minimum possible score was 5 and the maximum 25) on the perceived knowledge composite score, 88 (14%) GPs perceived themselves as having “good knowledge” while 543 (86%) were categorised as having “poor knowledge”. The cut-off score was chosen as the mid-point between the lowest (=5) and highest (=25) possible scores for the 5 questions relating to self-knowledge.

We used the two recent authoritative reviews of the evidence for the use of medicinal

cannabis^{1,2} as suggested to categorise indications as having either “Good Evidence for Efficacy” (spasticity in MS, intractable epilepsy, chronic cancer pain, chronic non-cancer pain, neuropathic pain, CINV, and insomnia) or “Poor Evidence for Efficacy” (anxiety, depression, PTSD, cachexia, cancer/ anti-tumour effects, agitation in dementia). The evidence for ‘palliative care’ was not assessed in either review and was thus excluded for the purposes of this analysis.

The analysis showed that GPs with Good Perceived Knowledge showed significantly greater support for the use of medicinal cannabis in neuropathic pain relative to GPs with Poor Perceived Knowledge (52.9% versus 35.6%, respectively) and chronic non-cancer pain (54% versus 36.4%, respectively) (Figure 1). No other significant differences were identified between GPs perceived knowledge level and their support for specific medical conditions.

What this highlights is that GPs who perceive their knowledge as good are more or less consistent with the current literature for certain medical conditions when considering their support for the use of medicinal cannabis. For other conditions, their own perception of their knowledge on the topic does not seem to affect their support for its use.

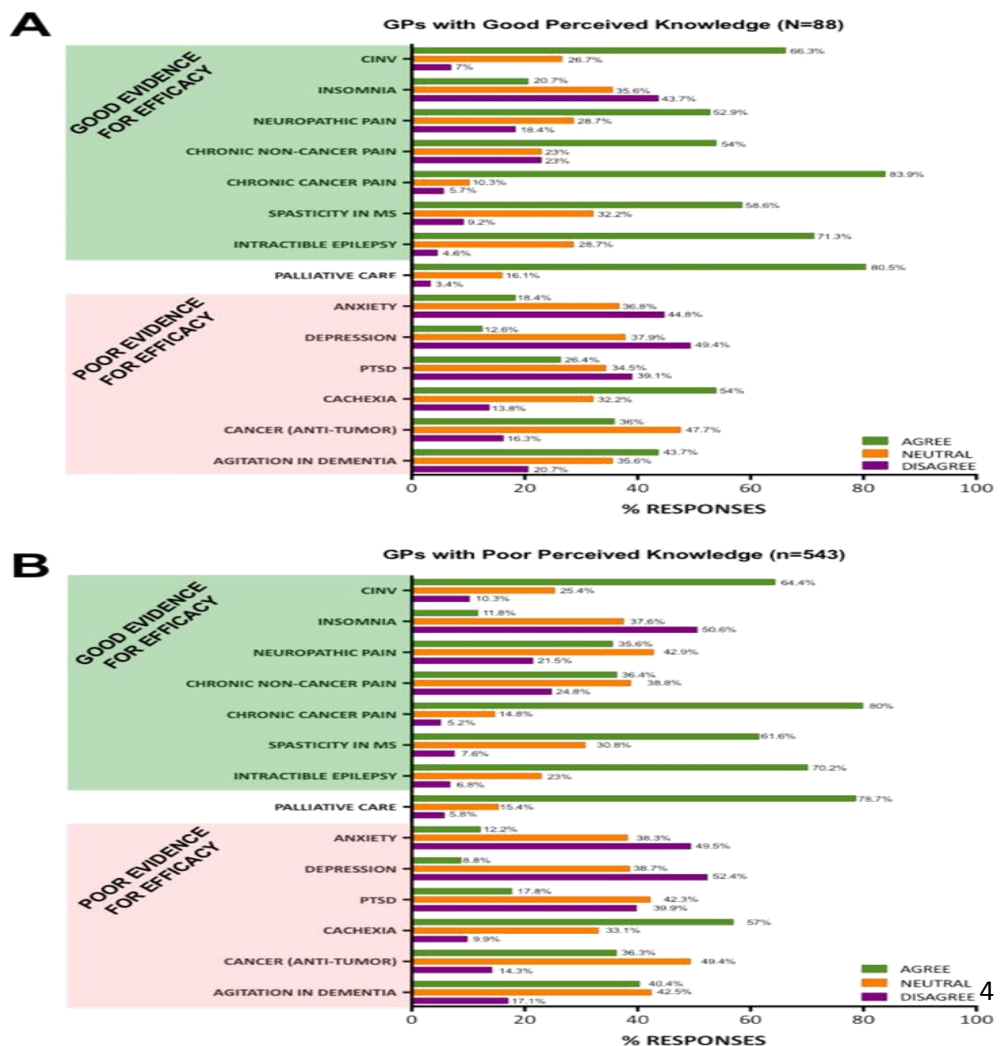


Figure 1. Support for use of medicinal cannabis for different indications of GPs who perceived themselves as having A) Good Perceived Knowledge (n=88) and B) Poor Perceived Knowledge (n=543) separated by level of evidence for efficacy. CINV=Chemo-induced nausea and vomiting; MS=Multiple sclerosis; PTSD=Post-traumatic stress disorder. Note: The indication 'palliative care' was not assessed in recent reviews evidence for efficacy of medicinal cannabis^{1,2}.

However, a doctor's decision to prescribe isn't based solely on evidence for efficacy, it's a decision based on risk-benefit. The evidence for use in chronic non-cancer pain may be "good" (based on the National Academies of Sciences, Engineering, and Medicine Review, 2017), but the potential for harm on an individual or population level could be high due to number or characteristics of patients. In some cases, doctors with Good Perceived Knowledge may even be more inclined to disagree with support for its use.

Thank you for posing this question. We have included this analysis into the Methods section (Page 7, Line 17 – 22, and continuing on Page 8 Line 1 - 9) and Results section (Page 11, Line 10 – 12, & Page 12, Line 12 – 17). The above graphs were not incorporated into the main paper as we feel that the original graph (Figure 4) adequately summarises the most pertinent information.

4. Why were the participants from Sydney excluded from the question about access models (page 10, line 40)?

The Sydney respondents did not complete this question as it was added to the survey after the first seminar. We have clarified our mention of this in the Methods section (see Page 7, Line 3 - 5). We have also made this clearer in the Results section (see Page 11, Line 16 - 17).

5. Please add numbers (percentages) to figures 1-4 near each response to a question.

Valid percentage numbers have now been added to Figures 1 – 4 for each response to a question. We have also adjusted the colour scheme of all graphs for better visibility and vibrancy. Please see the attached graphs.

"Valid percentage" was included into the figure captions at the end of the manuscript - see Page 23, Line 3 - 7, 10.

6. Table 1 shows significant differences between the study population and the general population of GPs in Australia. This is in addition to the medium response rate to the survey. These issues are stated in the limitations only about the sex of the respondents, but the limitation might be more general (i.e. the respondents don't represent the population of Australian GPs well enough).

We have now included a more general statement on the possible non-representativeness of our study respondents relative to the general population of Australian GPs. Please see Page 17, Line 6 – 8.

7. Both surveys cited in references 10 and 11 are from a single state in the United States. These are not international surveys (page 13, line 9).

Thank you for picking up on this error. We have amended this to "...clinician surveys in the USA,"

– see Page 14, Line 11.

8. The following article was not cited, despite almost identical method and a shared co-author: Norberg MM, Gates P, Dillon P, Kavanagh DJ, Manocha R, Copeland J. Screening and managing cannabis use: comparing GP's and nurses' knowledge, beliefs, and behavior.

Substance Abuse Treatment, Prevention, and Policy. 2012;7:31. doi:10.1186/1747-597X-7-31. It should be noted in the discussion, when dealing with the rate of Australian GPs that support medical use of cannabis (page 13, lines 11-16).

The study published by Norberg et al (2012) was indeed conducted with similar methodology and population, however, it focused on illicit cannabis use and strategies to reduce illicit usage and improve medical management of dependence rather than the medicinal (and thus "legitimate") uses of cannabis. We have, however, referred to the rate of Australian GPs that support that medicinal use of cannabis in this 2012 survey in the Discussion. Please see Page 14, Line 14 – 16.

Reviewer: 3

Reviewer Name: Gemayel Lee

Very interesting topic pertinent to current medical and societal discussion. Well-designed study with clearly defined objectives and outcomes. Results and discussion were thorough and presented clearly. Overall, this paper provides an intriguing look into Australian GP perspectives about medical cannabis.

Thank you for your comments. We appreciate you taking the time to review our manuscript.

Additional minor changes

- Emily A Karanges and Anastasia S Suraev have contributed equally to this paper. A note regarding joint authorship has been added on Page 1, Line 20.
- Patient and Public Involvement statement has been added to the Methods section on Page 8, Line 13 – 14.

References

- 1 National Academies of Sciences, E. & Medicine. The health effects of cannabis and cannabinoids: The current state of evidence and recommendations for research. (National Academies Press, 2017).
- 2 Whiting, P. F. et al. Cannabinoids for medical use: a systematic review and meta-analysis. *Jama* 313, 2456-2473 (2015).

VERSION 2 – REVIEW

REVIEWER	Ran Abuhasira Ben-Gurion University of the Negev, Israel
REVIEW RETURNED	19-Apr-2018
GENERAL COMMENTS	The authors have addressed properly to all issues mentioned in the revision request.