Family Medicine and Community Health

Attitudes, beliefs, behaviours and perspectives on barriers and enablers of Australian general practitioners towards non-drug interventions: a national survey

Loai Albarqouni ,[1] Hannah Greenwood,[1] Caroline Dowsett ,[1] Tammy Hoffmann,[1] Rae Thomas,[1,2] Paul Glasziou[1]

To cite: Albarqouni L, Greenwood H, Dowsett C, *et al*. Attitudes, beliefs, behaviours and perspectives on barriers and enablers of Australian general practitioners towards non-drug interventions: a national survey. *Fam Med Com Health* 2024;**12**:e002457. doi:10.1136/fmch-2023-002457

► Additional supplemental material is published online only. To view, please visit the journal online (http://dx.doi.org/10.1136/fmch-2023-002457).

[1]Institute for Evidence-based Healthcare, Faculty of Health Sciences & Medicine, Bond University, Robina, Queensland, Australia
[2]Tropical Australian Academic Health Centre, Townsville, Queensland, Australia

Correspondence to
Dr Loai Albarqouni; lalbarqo@bond.edu.au

ABSTRACT

Background Many guidelines recommend non-drug interventions (NDIs) for managing common conditions in primary care. However, compared with drug interventions, NDIs are less widely known, promoted and used. We aim to (1) examine general practitioners' (GPs') knowledge, attitudes and practices for NDIs, including their use of the Royal Australian College of General Practitioners (RACGP) Handbook of Non-Drug Interventions (HANDI), and (2) identify factors influencing their use of NDIs and HANDI.

Methods We conducted a web-based cross-sectional survey of practicing GP members in Australia during October–November 2022. The survey contained five sections: characteristics of GP; knowledge and use of NDIs; attitudes towards NDIs; barriers and enablers to using HANDI; and suggestions of NDIs and ideas to improve the uptake of NDIs in primary care.

Results Of the 366 GPs who completed the survey, 242 (66%) were female, and 248 (74%) were ≥45 years old. One in three GPs reported that they regularly ('always') recommend NDIs to their patients when appropriate (34%), whereas one-third of GPs were unaware of HANDI (39%). GPs identified several factors that improve the uptake of HANDI, including 'access and integration of HANDI in clinical practice', 'content and support to use in practice' and 'awareness and training'.

Conclusions While many GPs are aware of the effectiveness of NDIs and often endorse their use, obstacles still prevent widespread adoption in primary care. The results of this survey can serve as a foundation for developing implementation strategies to improve the uptake of effective evidence-based NDIs in primary care.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Evidence-based non-drug interventions (NDIs) have the potential to enhance patient care, improve health outcomes and reduce costs.

⇒ However, compared with drug interventions, NDIs are less widely known, promoted and used.

WHAT THIS STUDY ADDS

⇒ This national survey of 366 Australian general practitioners (GPs) showed that although most GPs believe in the effectiveness of NDIs, only one-third regularly recommend effective NDIs reported in the Handbook of Non-Drug Interventions, one-third are aware but rarely use them and one-third are not aware of them.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ This survey provides crucial insights for the development of implementation strategies to enhance the uptake of evidence-based NDIs in primary care.

BACKGROUND

Many clinical practice guidelines recommend non-drug interventions (NDIs) as the first-line approach for managing common acute and chronic conditions in primary care.[1 2] NDIs can be as effective, or even more effective, than some drug interventions at preventing and treating various conditions,[3 4] including cardiac rehabilitation for heart disease,[5] pulmonary rehabilitation for chronic obstructive pulmonary disease,[6] elevating the head of the bed for gastro-oesophageal reflux symptoms,[3 4] and cognitive therapy for depression, anxiety, low back pain and insomnia.[1 7–9]

It is crucial for primary care clinicians, such as general practitioners (GPs), to offer evidence-based healthcare by supplying patients with reliable information regarding various treatment choices, including effective NDIs. This ensures that individuals can make well-informed choices regarding their health.[10]

Despite this, and substantial evidence supporting the effectiveness of NDIs to manage conditions commonly seen in primary care, NDIs are not as widely known, promoted and used as their pharmacological counterparts.[11 12] There are several

challenges to using NDIs in primary care including awareness of NDIs, the availability of detailed 'how-to' information[13] and ease of access to evidence-based information about effective NDIs at point-of-care.[14] There is also a lack of practical information and resources to help GPs and patients to use effective NDIs. This represents a mismatch between what is known to be effective and what is predominantly used in practice, and a lack of practical resources to facilitate the use of NDIs.[15] Addressing these challenges is crucial to effectively optimise the uptake of evidence-based effective NDIs in primary care.

To address this, in 2013, The Royal Australian College of General Practitioners (RACGP) developed the Handbook of Non-Drug Interventions (HANDI), which is a regularly updated online formulary of effective NDIs that mimics the format of modern drug handbooks, including information on indications, contraindications and 'dosing'.[11] Although HANDI has addressed a key barrier to using NDIs (ie, availability of practical information and resources), there are still other major barriers to using NDIs that persist among Australian GPs.

Therefore, the aims of this study were to (1) examine current attitudes, beliefs and use of NDIs, and in particular, the use of RACGP HANDI, and (2) identify barriers and enablers influencing the use of NDIs and RACGP HANDI in clinical practice among GPs in Australia.

METHODS

Study design

We conducted a cross-sectional web-based survey among a convenience sample of practicing GPs in Australia. This study was reported according to the Checklist for Reporting Results of Internet E-Surveys.[16]

Study population

We conducted a nationwide survey of GPs who were members with the RACGP and currently practicing as a GP in Australia. Eligible GPs could have been practising in any setting (eg, private, public clinic, aged care facilities) and working either part time or full time.

Recruitment and study procedure

During October–November 2022, RACGP sent a direct email to all members inviting them to participate in the survey. The email invitation contained a brief description of the survey, emphasising that participation was optional and that all responses would be anonymous, along with a link to the web-based survey on the platform Qualtrics. One and 2 weeks after the initial email invitation, a general reminder to participate was sent to all RACGP members via 'In Practice' and 'State Faculty' newsletters, inviting eligible GPs to take part in the survey. Participation in the survey was also encouraged through social media posts by RACGP, primary care clinicians and researchers. The first page contained information about the aims of the study and what participation involved. Participants were advised, prior to starting the survey, that consent was implied by completing the survey.

Data collection and survey questionnaire

The questionnaire was codesigned and piloted with primary care clinicians and researchers including GPs (n=8; none were included as participants in this study). Changes include rewording of some questions, selecting examples of NDIs and barriers and enablers, and removal of some questions judged not to be relevant. The survey took about 20 min to complete and contained five sections (see online supplemental appendix 1 for the full survey):

i. *Characteristics of GPs:* GP demographics (including age, sex, practice size and location[17 18]) and experience (ie, years of clinical experience and average number of patients seen per day).
ii. *Awareness and use of NDIs:* (1) Frequency of NDI use (on a 5-point Likert scale (never to always), participants indicated how often they recommend NDIs; (2) *Use of NDIs in clinical practice* (participants rated whether they were: (*a) unaware of it; (b) aware, but disagree; (c) aware and agree, but do not use; (d) aware, agree and use occasionally; (e) aware, agree and use frequently* for a list of common NDIs from RACGP HANDI (eg, autoinflation for glue ear in children, cognitive–behavioural therapy for depression)).
iii. *Attitudes and beliefs towards NDIs:* On a 5-point Likert scale (strongly agree to strongly disagree), participants indicated their degree of agreement with statements about NDIs (eg, 'There is no or limited access to evidence-based information about NDIs'). Through the codesign process, the nine statements were informed by and mapped to the Theoretical Domain Framework (TDF), a theoretical model used to understand behaviours and guide implementation.[19]
iv. *Awareness of, barriers and enablers of using HANDI:* Participants responded to five multiple choice (single answer) questions about their use of RACGP HANDI, including awareness of HANDI, frequency of use, barriers to use and terminology *associated with* NDIs. An optional, open-ended question asked, 'can you think of anything that would help you to use HANDI more often?'.
v. *Suggestions of NDIs to be included in RACGP HANDI and suggestions for improvement:* Two optional, open-ended questions were asked in this section about a 'NDI Wishlist' for inclusion in HANDI and other suggestions for improving HANDI.

Data analysis

Responses for closed-ended questions (ie, all questions except Q16, Q18, Q19) were analysed with proportions for categorical variables. For missing data (unanswered questions), we did not remove participants completely from the dataset, instead, we handled it as missing data and used a complete-case analysis per question (see online supplemental appendix 4 for responses per question). Responses for open-ended qualitative questions

(ie, Q16, Q18, Q19) were analysed using content analysis, except for open-ended responses to a question about factors influencing the use of HANDI (Q16). All response quotes were analysed inductively to develop subthemes and themes by two independent researchers. Similarly, quotes were analysed and deductively mapped to TDF domains by the same two independent researchers. Quotes were analysed in duplicate by the two independent researchers, and disputes resolved by discussion or with the inclusion of a third qualitative researcher for resolution. We used Microsoft Excel for quantitative data analysis.

Patient and public involvement

End-users (ie, eight GPs) were involved in the codesign of the survey questionnaire, recruitment strategies and analysis.

RESULTS

Sample characteristics

The RACGP sent the survey to 35 496 members including RACGP fellows and GP-in-training members. Of the 35 496 email invitations, 20 572 were opened (a unique open rate of 58%), with a total of 461 unique clicks to the survey's link. Of those, 413 GPs accessed the online survey, of which 47 (11.4%) had no data, 34 (8.2%) had incomplete data and 332 had complete data (completion rate=80.4%).

Two-thirds of GP respondents (68%) were older than 45 years, almost two-thirds were women (66%), half have worked as GPs for more than 15 years (55%) and two-thirds work in clinical roles for a minimum of 3 days a week (68%). Half of the respondents were from the states of New South Wales or Victoria (57%), 65% were from metropolitan regions (n=238/366) and 11% resided in locations in the most disadvantaged areas (n=41/366). Table 1 provides details on the demographic characteristics of respondents. There were no apparent differences in the demographics with regard to age, gender, practicing location and remoteness area of these locations when compared with a nationally representative sample of practicing GPs reported in the RACGP Health of the Nation Survey (2022).[20]

Table 1 Characteristics of GP respondents in our survey (n=366) compared with GPs responded to 2022 RACGP Health of The Nation Survey (n=3219)

	Our survey (n=366)	2022 RACGP (n=3219)
Age (years), *n* (%)		
<35	42 (11)	225 (7)
44	76 (21)	837 (26)
45–54	94 (26)	869 (27)
55–64	88 (24)	805 (25)
>65	66 (18)	483 (15)
Gender, *n* (%)		
Male	120 (33)	1449 (45)
Female	242 (66)	1770 (55)
Prefer not to say	4 (1)	
State, *n* (%)		
WA	37 (10)	322 (10)
NT/SA	40 (11)	290 (9)
QLD	70 (19)	708 (22)
NSW/ACT	106 (29)	934 (29)
VIC/TAS	113 (31)	934 (29)
Remoteness area, *n* (%)		
Major city	238 (65)	2028 (63)
Inner regional	80 (22)	644 (20)
Outer regional	30 (8)	386 (12)
Remote and very remote	42 (5)	129 (4)

GP, general practitioner; RACGP, Royal Australian College of General Practitioners.

Awareness and use of NDIs in primary care

Most GP respondents (n=289/335; 71%) 'often' or 'always' recommend NDIs to their patients when they judged this to be appropriate (figure 1). The most frequently recommended NDIs self-declared by GPs were exercise or physical activity (n=166/365; 45%), dietary interventions (n=60/365; 16%), physical therapies (eg, physiotherapy, occupational therapy and podiatry) (n=28/365; 8%), psychotherapy (n=10/365; 3%) and lifestyle interventions, that is, a combination of exercise, nutritional advice and mindfulness activities (n=14/365; 4%). The majority of participant GPs report using the term 'lifestyle interventions/treatments' when referring to NDIs as a set of clinical interventions (n=279/338; 83%). There is no apparent difference in GPs' self-reported recommendation of NDIs and GPs' characteristics (online supplemental appendix 2).

Specific NDIs (and supported by HANDI) that most GP respondents reported that they prescribed in practice include exercise for chronic low back pain (n=337/341; 99%), cognitive–behavioural therapy for depression (n=323/341; 95%), exercise rehabilitation for heart disease (n=317/341; 93%), aquatic exercise for osteoarthritis (n=314/341; 92%), brief behavioural intervention for chronic insomnia (n=297/341; 87%) and Mediterranean diet for cardiovascular disease (n=297/341; 87%) (figure 2).

Attitude and beliefs towards NDIs

Most GP respondents agree that NDIs can (1) be an effective treatment option for some acute and chronic conditions in primary care (n=326/338; 96%); (2) be as effective as some drug interventions (n=304/338; 90%); (3) reduce the prescription of inappropriate/unnecessary drug interventions (n=315/338; 93%); and (4) reduce the risk of adverse events from drug interventions (n=316/338; 93%). More than half of GP participants reported a lack of (1) access to evidence-based

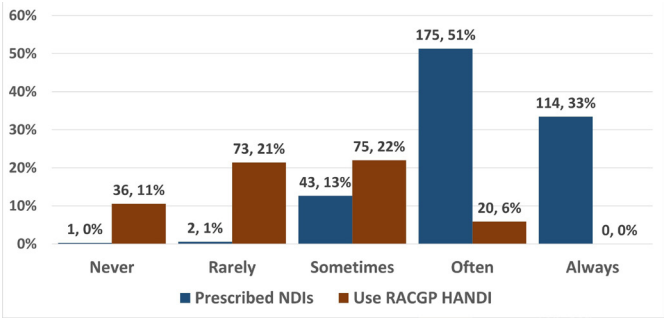

Figure 1 The proportion of general practitioner respondents reported using NDIs (n=335) and RACGP HANDI (n=204) in clinical practice. NDI, non-drug intervention; RACGP HANDI; The Royal Australian College of General Practitioners (RACGP) Handbook of Non-Drug Interventions.

information about effective NDIs (n=178/338; 53%); (2) practical information that is applied to their patients in practice (n=282/338; 83%); and (3) time in the consultation to recommend NDIs (n=146/338; 43%) (figure 3).

Awareness and barriers to the use of HANDI

Two-thirds of the GP respondents were aware of HANDI (n=205/338: 61%), mostly through RACGP professional networks and training programmes. Of those aware of HANDI, half of them either rarely (n=36/204; 18%) or never used it (n=73/204; 36%) (figure 1). Of the 177 GP respondents who regularly prescribe NDIs (ie, always and often), 159 (90%) infrequently use RACGP HANDI (ie, never/rarely/sometimes) (see online supplemental appendix 2).

The top 2 most frequently reported barriers for using HANDI in practice focused around the TDF domain 'environmental context and resources', including (1) limited time during consultations (n=100/204; 49%); and (2) lack of integration into existing systems, workflows and electronic medical records, for example, Medicare (n=84/204; 41%). Of the 204 who were aware of HANDI, 73 (36%) also self-identified other barriers to use HANDI, including forgetting to use (TDF: memory attention and decision processes), using other resources (TDF: environmental context and resources), incomplete description or content related to local applicability (TDF: environmental context and resources), and not referring to HANDI once familiar with the NDI (TDF: beliefs about capabilities).

Improving the uptake of HANDI

Thematic analysis of factors that could improve uptake of HANDI found 12 subthemes across four themes: (1) access and integration of HANDI in clinical practice, (2) content and support to use HANDI, (3) awareness of HANDI and (4) nothing will enhance use. Theme 1 (access and integration of HANDI in clinical practice) was focused around *Environmental context and resources* and *Memory, attention and decision processes* TDF domains. Identified factors that could enhance uptake included enhancing access and usability of HANDI information and integration of HANDI with either existing guides or clinical software. For theme 2 (content and support to use HANDI in clinical practice), key factors that could enhance uptake focused around improving support for

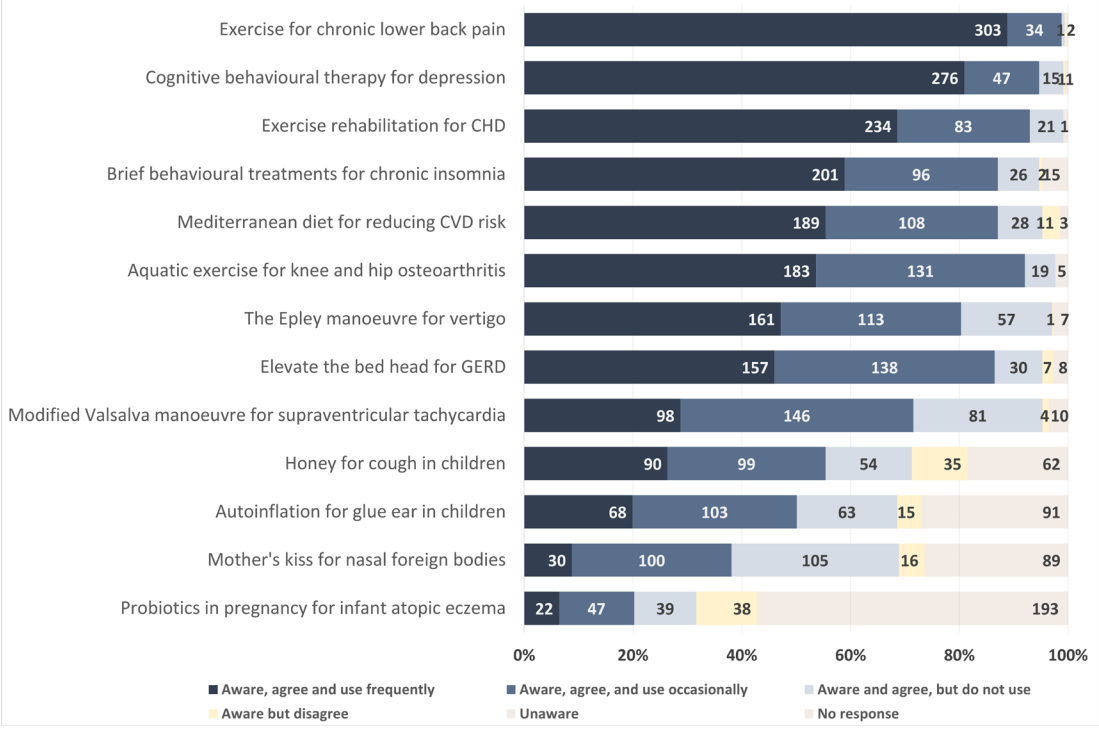

Figure 2 Geneal practitioners' (GPs) beliefs and attitudes about NDIs. GPs responded to, 'For each of the following NDIs, which are you aware of, agree is useful, and use in practice?'. Note: GP numbers are inside bars; percents can be read of the horizontal axis. CHD, coronary heart disease; CVD, cardiovascular disease; GERD, gastroesophageal reflux disease.

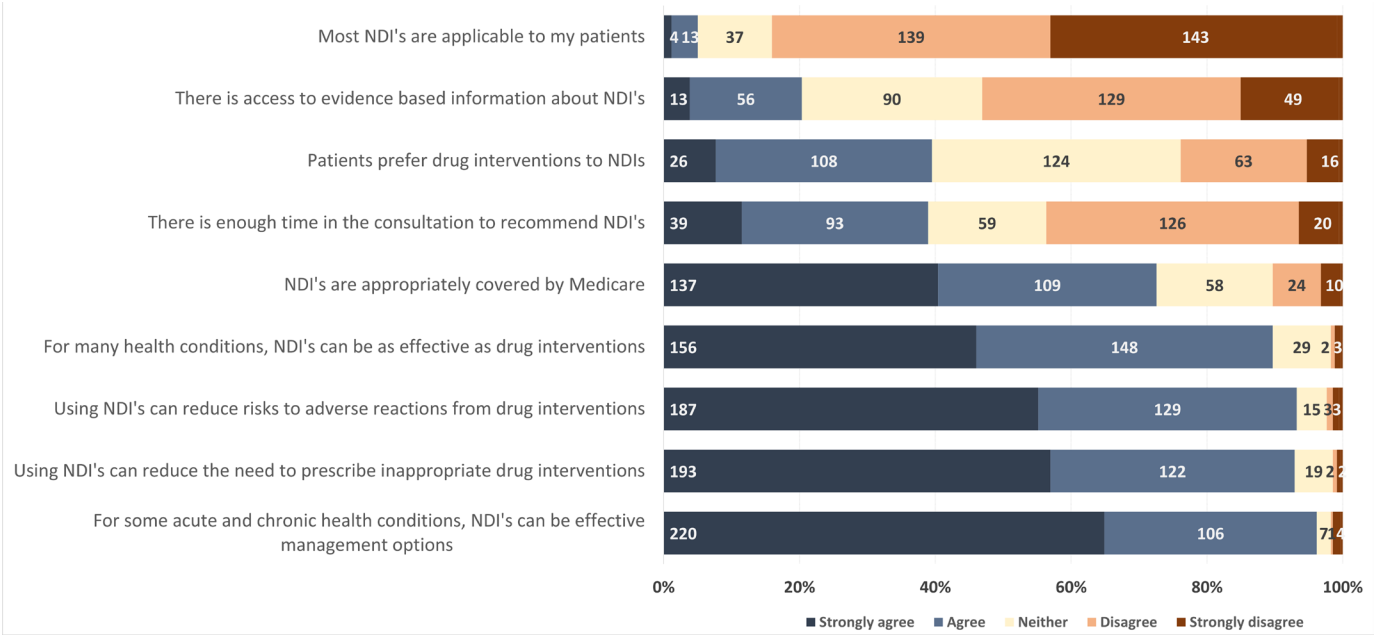

Figure 3 General practitioners' (GPs) awareness, knowledge of, belief in and use of NDIs. GPs responded to, 'Please indicate how much you agree or disagree with the following statements'. Note: GP numbers are inside bars; percents can be read of the horizontal axis.

NDIs through funding bodies like Medicare, increasing available interventions and revising the currently available HANDI content. These factors mapped to several TDF domains, including *Environmental context and resources*, and *Knowledge*. Suggestions to improve uptake related to awareness of HANDI (theme 3) included use of a public awareness campaign, reminders or prompts to use, and education and training. Key TDF domains for this theme included *Knowledge, Intentions* and *Reinforcement*. For theme 4 (nothing will enhance use) GPs either reported confidence in ability to prescribe NDIs without HANDI, or that nothing will help them use it more, reflecting TDF domains of *Knowledge, Intentions* and *Belief about capability*. Table 2 shows all themes, subthemes, exemplar quotes and mapped TDF domains for each subtheme.

Suggestions of NDIs and improvements for HANDI

One hundred ninety-six GPs responded to the question and suggested NDIs for inclusion and improvement in HANDI. After removing existing HANDI intervention-condition entries and suggestions for 'not sure' or 'nothing' (n=15; 7%), there were 104 responses. Of the suggestions, 32% (33/104) were already listed in HANDI, but had recommendations for using the intervention for a different condition. The rest of the suggested NDIs were centred around women's health (eg, endometriosis and polycystic ovary syndrome management, fertility and breastfeeding advice), musculoskeletal (eg, neck and back pain, and osteoarthritis) and mental health (online supplemental appendix 3). NDIs that are mentioned in HANDI at the time of analysis have not been included in online supplemental appendix 3 when the condition-intervention combination in the HANDI entry was suggested; however, interventions that exist in HANDI are mentioned where the recommendation suggested use of the intervention for a different condition. These conditions are found in the lower half of the online supplemental appendix 3.

DISCUSSION

The results of our web-based survey of GPs in Australia suggest that most GPs regularly recommend NDIs to their patients when appropriate. However, only 1 in 10 regularly used the RACGP HANDI, despite most having heard of it and being hosted by their member organisation. The main barriers to prescribing NDIs and using RACGP HANDI include not enough time during consultation and poor integration to current clinical workflow and electronic medical record systems.

We found evidence of a knowledge-practice gap (GPs self-reported being aware and agree but do not use it occasionally) in the use of effective NDIs that ranges between 11% (exercise for chronic lower back pain) and 67% (modified Valsalva manoeuvre for supraventricular tachycardia). This is comparable to previous studies which reported the proportion of patients receiving advice regarding effective NDIs.[12 21] For example, a survey of 2947 Australian adults found that 34% of those who have high blood pressure received advice regarding reducing salt intake.[22] A recent analysis of 13 281 individuals from the 2020–2021 Australian National Health Survey found that individuals who received lifestyle advice from their GPs are more likely to change their lifestyle behaviours.[23] This gap highlights a need for improvements in practical, user-friendly resources, like HANDI, with regard to NDIs that can be used at point of care for prescribing

Table 2 Key TDF domains and exemplar quotes to using HANDI (Q16)

Theme	Subtheme	Exemplar quotes	TDF domains
Access and integration of HANDI in clinical practice	1.1 Enhance access to and useability of HANDI information	"Easy access to software and factsheets. Have to log on and go through a number of windows to access at present" *F, age 55–64, 11–15 exp* "Better website, more user-friendly, more tools" *M, age <35, <5 exp*	Environmental context and resources; Memory, attention and decision processes; Knowledge
	1.2 Mode of access to HANDI information	"A good proactive website and mobile app" *M, age 45–54, >15 exp* "Print a book with annual updates" *F, age 65+, >15 exp*	Environmental context and resources
	1.3 Integration with existing guidelines	"Put it into e(Therapeutic Guidelines) which I access frequently and has lots of good info for NDIs" *F, age 45–54, >15 exp*	Environmental context and resources; Social/professional role and identity
	1.4 Integration with existing clinical software	"Integration with the electronic medical record to print off the patient hand-outs as '(prescriptions)', or [being] able to text/email the resources easily to patient and not have to print" *F, age <35, <5 exp* "App linked to clinical software for example, Best Practice, Medical Director to offer NDI suggestions for diagnoses/prescription" *M, age 45–54, 11–15 exp*	Environmental context and resources; Memory, attention and decision processes; Knowledge; Skills
Content and support to use HANDI in clinical practice	2.1 Support through Medicare or other funding channels	"Better access to Medicare rebates for non drug interventions. PBS pain relief is so much cheaper [and] less effort than NDI" *M, age 55–64, >15 exp* "Patient expectations that this will form part of management, more funded time to use" *F, age 55–64, >15 exp*	Environmental context and resources; Memory, attention and decision processes; Intentions; Beliefs about consequences
	2.2 Increase available interventions	"More recommendations for self-help NDIs that GPs can introduce patients to themselves and without requiring referral to archives that are expensive and usually unavailable in the bush (…)" *F, age 55–64, >15 exp*	Knowledge; Memory, attention and decision processes; Environmental context and resources
	2.3 Revise available resource content (eg, patient handouts and summaries)	"Patient fact sheets, translated resources, e-prescriptions, more diagrams for patients" *F, age <35, <5 exp* "They need to be summaries on one page, if possible, as a quick reference" *F, age 55–64, >15 exp* "The website is poorly tabled—the index needs to be listed as per diagnosis, not as per the first word of the title of the intervention" *M, age 45–54,>15 exp*	Knowledge; Skills; Environmental context and resources; Memory, attention and decision processes
Awareness of HANDI	3.1 Awareness campaign	"Awareness campaign of why I would want to" *F, age 55–64,>15 exp* "Just make it more widely known everywhere! Even consider educating the public about it" *M, age 55–64,>15 exp*	Knowledge; Social influences; Intentions
	3.2 Reminders or prompts to use	"Reminders that it exists, regular updates of the content" *F, age 35–44, 5–10 exp* "If it was better signposted on the RACGP website resources section" *NR, age 35–44, <5 exp* "Email updates as per Canadian Tools for Practice" *M, age 55–64, >15 exp*	Memory, attention and decision processes; Reinforcement; Intentions; Environmental context and resources; Behavioural regulation; Knowledge
	3.3 Education and training	"Education sessions to increase awareness" *F, age 45–54, 11–15 exp*	Knowledge; Skills; Intentions; Memory, attention and decision processes; Reinforcement
Nothing will enhance use	4.1 Confident in ability to prescribe NDI without HANDI	"I don't need to use HANDI. [It] promotes brief interventions that is, using an NDI instead of a drug. I practice whole systems care, so I encourage all patients to look at the whole of their life to consider their long-term health. [The] HANDI resource doesn't cut it for me." *F, age 45–54, >15 exp*	Knowledge; Intentions; Beliefs about capability
	4.2 Nothing will help use it more	"NO" *M, Age <35, <5 years exp* "No and I have tried…." *F, Age 65+, >15 years exp*	N/A

TDF domains presented in the table are all the domains that relate to all the respondent quotes for that specific subtheme, not only the exemplar quotes presented in the table.
TDF, Theoretical Domain Framework.

NDIs. Future studies could also explore the nature of GPs' advice or recommendations for NDIs (eg, whether written scripts improve the use of NDIs among patients).

The main factors that could enhance uptake of HANDI include enhancing access and integration of HANDI and improving the content and support to use HANDI in clinical practice. These factors were mapped to TDF domains, which can help inform a future implementation strategy to enhance uptake of HANDI, and subsequently, NDIs. For example, many of the identified subthemes mapped to the TDF domain *Environmental context and resources*. Intervention functions related to this domain include training, environmental restructuring and enablement. These could be targeted using implementation strategies such as changes to the medical record system and formal integration of services. Similarly, for the TDF domain *Knowledge,* intervention may serve the function of education and take the form of distribution of educational material or educational meetings as implementation strategies.[24] Therefore, implementation strategies aimed at improving the uptake of HANDI should be multifaceted. Previous studies explored the factors that could improve the uptake of NDIs in primary care found similar results.[25–27] For instance, a review of barriers and enablers of NDIs for high blood pressure found that a lack of time, knowledge, self-confidence, resources, clear guidelines,

financial incentives and patient-relevant information.[27] Further, recent meta-ethnographic evidence suggests that patients receiving weight management care from their GPs sought care tailored to their individual needs. However, GPs may be ill-equipped to provide individualised advice, due to lack of available guidance, training or resources.[28] This offers some insight into the barriers experienced by GPs when recommending NDIs and may provide directions for future implementation projects in primary care. Respondents in the present study reported a number of factors to the use of NDIs that can be linked to most of the TDF domains which multiple implementation strategies may be needed for successfully implementing NDIs in primary care.

This study has some limitations. First, this study has the low response rate and the potential for non-response bias (ie, GPs with the least knowledge and most negative attitude towards NDIs may have been least likely to participate). GP respondents in our survey were from diverse areas including major cities, regional, rural and remote areas, and response rate is comparable to similar RACGP surveys[29]; however, caution is needed in generalising our findings to the overall population of Australian GPs, or GPs working in other healthcare settings internationally. Second, there are potential sources of bias inherent to the self-reported nature of our survey, for example, recall bias whereby respondents may overestimate their knowledge and use of NDIs. Further, as the data are self-reported only, we cannot verify whether the rates of NDI use reported by GPs reflect actual use in clinical practice. Further, the survey itself was self-developed and not validated, and hence may not comprehensively address barriers to using NDIs. However, it was codesigned with end-users where discussions and resolution was reached with trade-offs in developing the survey. Nevertheless, the most recent data concerning the use of HANDI guides reveal that, in 2022, the resource received an average of 784 (95% CI 770 to 798) daily pageviews. This suggests that certain GPs repeatedly rely on this tool as a valuable resource.

CONCLUSIONS

This survey examines GPs' knowledge, attitude and use of NDIs and RACGP HANDI. Most GPs believe in the effectiveness of NDIs and recommend it regularly; however, barriers still impede the uptake of NDIs in primary care. Key barriers to prescribing NDIs and using RACGP HANDI include limited time during consultation and inadequate integration to current clinical workflow. The findings of this survey may help inform future implementation strategies for improving the uptake of NDIs in primary care.

Twitter Loai Albarqouni @LoaiAlbarqouni

Contributors Conceptualisation: LA, PG. Methodology: LA, HG, CD, TH, RT, PG. Formal analysis: LA, HG, CD. Writing—original draft: LA, CD. Writing—review and editing: LA, HG, CD, TH, RT, PG. LA is the guarantor.

Funding Australian National Health and Medical Research Council (NHMRC) Investigator Grant (2008379).

Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not applicable.

Ethics approval This study involves human participants and was approved by Bond University Human Research Ethics Committee. Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request. The authors had full access to all of the data in the study. Aggregated data that underlie the results reported in this article are available on request to the corresponding author.

ORCID iDs

Loai Albarqouni http://orcid.org/0000-0002-4114-9106
Caroline Dowsett http://orcid.org/0000-0001-7734-9436

REFERENCES

1 Chou R, Deyo R, Friedly J, *et al*. Nonpharmacologic therapies for low back pain: A systematic review for an American college of physicians clinical practice guideline. *Ann Intern Med* 2017;166:493–505.
2 Eckel RH, Jakicic JM, Ard JD, *et al*. AHA/ACC guideline on Lifestyle management to reduce cardiovascular risk: a report of the American college of cardiology/American heart Association task force on practice guidelines. *Circulation* 2014;129(25 Suppl 2):S76–99.
3 Albarqouni L, Sanders S, Clark J, *et al*. Self-management for men with lower urinary tract symptoms: A systematic review and meta-analysis. *Ann Fam Med* 2021;19:157–67.
4 Albarqouni L, Moynihan R, Clark J, *et al*. Head of bed elevation to relieve gastroesophageal reflux symptoms: a systematic review. *BMC Fam Pract* 2021;21(1):24.
5 Dibben G, Faulkner J, Oldridge N, *et al*. Exercise-based cardiac rehabilitation for coronary heart disease. *Cochrane Database Syst Rev* 2021;11:CD001800.
6 McCarthy B, Casey D, Devane D, *et al*. Pulmonary rehabilitation for chronic obstructive pulmonary disease. *Cochrane Database Syst Rev* 2015;2015:CD003793.
7 Hoffmann TC, Maher CG, Briffa T, *et al*. Prescribing exercise interventions for patients with chronic conditions. *CMAJ* 2016;188:510–8.
8 Ewald B, Stacey F, Johnson N, *et al*. Physical activity coaching by Australian exercise physiologists is cost effective for patients referred from general practice. *Aust N Z J Public Health* 2018;42:12–5.
9 Kent P, Haines T, O'Sullivan P, *et al*. Cognitive functional therapy with or without movement sensor Biofeedback versus usual care for chronic, disabling low back pain (RESTORE): a randomised, controlled, three-arm, parallel group, phase 3, clinical trial. *Lancet* 2023;401:1866–77.
10 Practitioners. Standards for general practices. In: *East Melbourne* Victoria2020. n.d.: Available: https://www.racgp.org.au/getattachment/ece472a7-9a15-4441-b8e5-be892d4ffd77/Standards-for-general-practices-5th-edition.aspx

11 Glasziou P. Making non-drug interventions easier to find and use. *Aust Fam Physician* 2013;42:35.
12 Johnston K, Grimmer-Somers K, Young M, *et al*. Which chronic obstructive pulmonary disease care recommendations have low implementation and why? A pilot study. *BMC Res Notes* 2012;5:652.
13 Hoffmann TC, Glasziou PP, Boutron I, *et al*. Better reporting of interventions: template for intervention description and replication (Tidier) checklist and guide. *BMJ* 2014.
14 Byambasuren O, Beller E, Hoffmann T, *et al*. Barriers to and Facilitators of the prescription of mHealth Apps in Australian general practice: qualitative study. *JMIR Mhealth Uhealth* 2020;8:e17447.
15 Crowe S, Fenton M, Hall M, *et al*. Patients', Clinicians' and the research communities' priorities for treatment research: there is an important mismatch. *Res Involv Engagem* 2015;1:14.
16 Eysenbach G. Improving the quality of web surveys: the checklist for reporting results of Internet E-surveys (CHERRIES). *J Med Internet Res* 2004;6:e34.
17 ABo S. *Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia*. 2016.
18 ABo Statistics. Australian statistical geography standard (ASGS): remoteness structure. In: *Jusy*. 2016.
19 Atkins L, Francis J, Islam R, *et al*. A guide to using the theoretical domains framework of behaviour change to investigate implementation problems. *Implement Sci* 2017;12:77.
20 Practitioners RACoG. General practice: health of the nation 2022. 2022.
21 Ta M, George J. Management of chronic obstructive pulmonary disease in Australia after the publication of national guidelines. *Intern Med J* 2011;41:263–70.
22 Booth AO, Nowson CA. Patient recall of receiving lifestyle advice for overweight and hypertension from their general practitioner. *BMC Fam Pract* 2010;11:8.
23 Albarqouni L, Greenwood H, Dowsett C, *et al*. General practitioners lifestyle advice and change in lifestyle Behaviours among nationally representative sample of 13281 Australians: results from the 2020-21 national health survey. *Med J Aust* 2024.
24 Michie S, van Stralen MM, West R. The behaviour change wheel: A new method for Characterising and designing behaviour change interventions. *Implement Sci* 2011;6:42.
25 Becker WC, Dorflinger L, Edmond SN, *et al*. Barriers and Facilitators to use of non-pharmacological treatments in chronic pain. *BMC Fam Pract* 2017;18:41.
26 Chan PS-F, Fang Y, Wong MC-S, *et al*. Using Consolidated framework for implementation research to investigate Facilitators and barriers of implementing alcohol screening and brief intervention among primary care health professionals: a systematic review. *Implement Sci* 2021;16:99.
27 Dhungana RR, Pedisic Z, de Courten M. Implementation of non-pharmacological interventions for the treatment of hypertension in primary care: a narrative review of effectiveness, cost-effectiveness, barriers, and Facilitators. *BMC Prim Care* 2022;23:298.
28 Norman K, Chepulis L, Burrows L, *et al*. Barriers to obesity health care from GP and client perspectives in New Zealand general practice: A meta-Ethnography review. *Obes Rev* 2022;23:e13495.
29 RACGP. RACGP Digital tools in general practice survey. 2021.