





# Exploring organisational readiness to implement a preventive intervention in Australian general practice for overweight and obese patients: key learnings from the HeLP-GP trial

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## ABSTRACT

**Background.** The HeLP-GP trial aimed to increase the capacity of practice nurses to deliver weight management to overweight and obese patients through an intervention comprising a health check, a lifestyle app and/or telephone coaching. This paper describes implementation through the lens of organisational readiness with emphasis on the role of the practice nurse. **Methods.** Routinely collected mixed method research data including practice surveys, field notes, and diaries and process data were mapped against the domains: motivation to implement, general capacity and intervention-specific capacity. **Results.** Organisational readiness varied considerably, particularly the domain of intervention-specific capacity. Practice nurse turnover negatively impacted the implementation, affecting half of the practices. We observed a general lack of practice-based support for intervention delivery, and varying levels of interest, skill and confidence in delivering the intervention. Nurses struggled to complete the research and intervention tasks in a timely way. Conducting risk assessments and referring to coaching were generally not problematic; however, we noted lower confidence levels with the lifestyle app and instructing patients to use it. **Conclusions.** We found a lack of general 'readiness' inherent in the nursing role, particularly related to their capacity to complete intervention tasks and practice-level support to implement the intervention. For nurses in general practice to fulfil their potential in supporting patients to reduce risk and adopt healthier life choices, our study indicates that more could be done to improve their workforce positioning and remuneration, which may, in turn, improve continuity of care, retention and individual motivation.

**Keywords:** family practice, general practice nurse, obesity, organisational readiness, overweight, practice nurse, primary care, primary health, weight management.

## Background

Overweight and obesity are influenced by a range of physical, economic, political and sociocultural factors that interact to produce an obesogenic environment (one that promotes obesity in individuals and populations; [Australian Institute of Health and Welfare 2017](#); [Hobbs and Radley 2020](#)). Although interventions based in primary care cannot address all these factors, a positive contribution can be made through individual risk assessment and identification, and the promotion of lifestyle interventions that emphasise healthy eating, increased physical activity and support behaviour change ([Forgione et al. 2018](#)).

General practice nurses (GPNs) routinely participate in prevention. They are often the first contact for childhood and adult immunisation ([Halcomb and Hickman 2016](#)), and they are opportunistic providers of preventive care for smoking cessation, nutrition, alcohol consumption and physical inactivity ([McElwaine et al. 2015](#)). Evidence-based weight management programs utilising GPNs have shown some positive results in terms of patient outcomes and cost ([Ross et al. 2008](#)), and have been shown to be feasible, acceptable and valuable in the Australian setting ([Gray et al. 2017](#)), although not currently funded through Medicare.

Despite progress in developing and testing primary care interventions to support weight management, there is limited knowledge on the practicality of implementing and sustaining potentially effective interventions (Slater *et al.* 2022). This paper describes the experience of implementing a nurse-led obesity intervention in Australian general practice through the lens of organisational readiness.

**Table 1.** Commitment of the GPN within the HeLP-GP intervention.

Time commitment	GPN task
60 min	Three on-line training modules to assist GPNs to deliver the intervention. Training covered guideline recommendations regarding diet and physical activity, and modules on health literacy, weight management and motivational interviewing. Teach back tools were encouraged within interactions to assess patient knowledge and understanding (health literacy).
2–3 h	Three facilitation visits provided by local PHN staff or a research nurse. These visits supported GPNs to work with their patients on improved health literacy, goal directions, and addressing challenges and difficulties as patients progressed through the trial.
30–40 min per patient	Health check based on the 5As (Assess, Advise/Agree, Assist and Arrange). As well as doing basic biometric measurements, GPNs used a trial template to prompt discussions about weight management, diet and physical activity, and to set up <i>mynsnapp</i> using each patient's baseline measurements. This served as the basis for the personal goals set by the patients for the next 6 weeks. The GPNs also provided assisted referral to the Get Healthy telephone coaching service provided by the NSW government where patients could receive up to 10 tailored coaching calls ( <a href="https://www.gethealthynsw.com.au/">https://www.gethealthynsw.com.au/</a> ).
20 min per patient	6-week review at which weight, body mass index and waist circumference were re-measured, and patient progress or difficulty was used to revise the patient's goals. The GPNs were expected to review the patient's experience of <i>mynsnapp</i> and Get Healthy, and schedule a further 12-week review with the GP.

## Context

HeLP-GP was undertaken in general practices in New South Wales (NSW) and South Australia (SA) 2018–2019. The aim was to help overweight or obese patients to make positive lifestyle changes while assessing the value, sustainability and scalability of the nurse-led intervention. The methodology has been reported (Parker *et al.* 2018, 2022). In brief, 22 practices (11 intervention and 11 control) consented, and they recruited 315 patients (120 intervention and 95 control). GPNs were pivotal in the intervention (Table 1). They conducted a health assessment based on the 5As model of behaviour change (Glasgow *et al.* 2006), facilitated patient access to the *mynsnapp* lifestyle app and/or telephone coaching (Get Healthy; Fig. 1), arranged patient appointments, and updated clinical changes in the medical record to enable accurate extraction of trial data.

The trial results have been reported (Parker *et al.* 2022). At 6 months, based on an intention-to-treat sample, there was a greater increase in the Health Literacy Questionnaire (HLQ) domain 8 score (ability to find good health information; mean DiD 0.22; 95% CI 0.01–0.44) and a small improvement in diet scores (increased fruit and vegetable intake; DiD 0.98 (0.50–1.47);  $P = 0.026$ ) in the intervention group compared with the control group. This was not maintained at 12 months. No differences in eHealth literacy, physical activity scores, body mass index, weight, waist circumference or blood pressure were found.

## Methods

### Data collection

Two designated research roles collected qualitative and quantitative data (Table 2 and Supplementary Additional file 1 and 2). Research officers (ROs) conducted fortnightly visits predominantly to support the GPNs to deliver the intervention, but also to identify any practice-based barriers; to liaise with GPNs, GPs and reception staff; and to work with the practice as a whole to develop processes that would



**Fig. 1.** HeLP-GP clinical intervention model.

**Table 2.** Trial data sources.

Data source	Description
Research officer field notes and observation	Collected over the intervention period by the RO for each intervention practice. The purpose of the field notes was to document the practice environment (culture, staffing, routines), collect feedback from the GPNs and reception staff about issues, blockages, problems implementing the intervention and to document staff feedback about the patient reaction to the intervention.
Facilitator diary	Facilitators documented each of three formal sessions provided to GPNs from each intervention practice (length and duration). Facilitators also documented their personal observations about aspects of practice and culture and individual GPN engagement with the intervention.
Provider surveys	Quantitative survey that asked the GP and GPN to provide pre/post information about personal demographic information and attitudes to their preventive clinical work, including the frequency with which they assessed risk factors or provided advice to patients around diet and physical activity.
Practice profile survey	A one-off general profile of each practice completed by the GPN or GP, and including staffing, software systems, methods to recall patients for appointments, methods of follow up and use of patient resources.
Doctors Control Panel entries	Descriptive process indicators about the GPN health check and follow up (timing and completion rates).

ensure intervention implementation. Additionally, facilitators provided by three primary health networks conducted three formal sessions with each consenting GPN plus telephone follow up. Facilitation has been used in Australian general practice to provide education or coaching to staff and is an important aspect of implementing research into practice (Cranley *et al.* 2017). Facilitation was also used to promote the uptake of the intervention through GPN education on risk factor recording and promotion of work practices in line with the intervention (e.g. scheduling of reminders for the health check, use of the lifestyle app and referral to Get Healthy).

Pre- and post-surveys collected demographic data about GPNs, GPs and their preferences related to prevention. Baseline profiles provided data about the organisation and make-up of each intervention practice. Doctors Control Panel (DCP) was used to collect process indicators about the GPN health check and follow up (timing and completion rates).

**Data analysis**

Data pertaining to the 10 of 11 intervention practices that successfully recruited patients were retrospectively mapped against the components for each of the three organisational

readiness domains: motivation, organisational capacity and intervention-specific capacity using a recognised framework (Scaccia *et al.* 2015; Table 3). The first stage of this process was a descriptive tabulation against each indicator by the RO who had worked most closely with the practice. The second stage was a 2-h online collaborative workshop conducted between the trial coordinator (SP), the ROs (AT, CM) and one NSW facilitator (SS). This time was used to refine collective understanding about each of the organisational domains, and to have an open discussion about each intervention practice, with relevance to the domains and the possible impact of each component on intervention implementation (negative or positive).

We utilised the survey data to aid understanding of each organisational readiness domain, specifically the items related to workforce, organisational capacity and intervention-specific capacity. Quantitative data were analysed using SPSS. Descriptive process indicators about the GPN health check and follow up (timing and completion) and the facilitation visits (length and duration) were tabulated descriptively from DCP data and the facilitator diary using Excel.

**Ethics approval**

Ethical approval was obtained for the conduct of this trial from the University of New South Wales Human Research Ethics Committee (UNSW HREC – HC174).

**Trial registration**

The HeLP-GP trial was registered 26/10/2017 with the Australian and New Zealand Clinical Trials Registry (ANZCTR – ACTRN12617001508369) <http://www.ANZCTR.org.au/ACTRN12617001508369.aspx>.

**Results**

Practice and provider characteristics are provided in Tables 4 and 5. The assessment against organisational readiness domains for each intervention practice are provided in Table 6. One NSW practice did not recruit any patients and is not included in this discussion.

**Motivation**

Due to targeted recruitment of practices interested in prevention and research by primary health networks, we can assume some level of motivation to participate in this intervention. Four practices displayed strong commitment to providing good preventive care and/or a belief that the practice staff should contribute to research. Increasing numbers of overweight patients also made practices keen to instigate a weight management intervention. For one GP, a recent close working relationship with the organising centre (UNSW) and a strong interest in obesity drove the decision to participate.

**Table 3.** Organisational readiness components and subcomponents.

Motivation – The motivation to implement the intervention	
Compatibility	Was the intervention perceived as being consistent with existing values and beliefs belonging to the practice?
Complexity	Did the practice feel that the intervention was 'doable'?
Priority	Was the intervention seen as a priority? Or was it low in priority?
Organisational capacity – The attributes associated with a functioning organisation	
Culture/climate	Were the practice staff equally involved in decision-making around involvement with the intervention?
	Was there scope for practice staff (particularly GPNs) to have ownership of their work? Including managing the intervention?
	Did staff at the practice generally express job satisfaction?
General capacity/resource utilisation	Were there sufficient staffing available at the practice to participate?
	Was GPN turnover an issue for the practice?
	Were there any notable issues related to space? Equipment or technical resources?
Leadership	Was there evidence of effective leadership within the practice?
Intervention specific capacity – The human, technical and fiscal conditions that are important to implement the intervention	
Supportive climate	Level of GPN receptiveness
	The general level of support for the intervention by staff in the practice (i.e. GPNs, GPs, receptionists, practice manager)?
Intervention specific resources	Uptake of trial resources?
	Time and resource issues expressed/experienced by the practice?
	Difficulty with systems (DCP, health check templates, <i>mynsapp</i> , Get Healthy)?
	Capacity/enthusiasm of GPN for training?
	Level of GPN engagement with the facilitation sessions
PN specific skills, knowledge and abilities to deliver the intervention	Level of GPN confidence with conducting health checks
	Level of GPN confidence to work with the patient with <i>mynsapp</i> ?
	Level of GPN confidence to refer patients to Get Healthy
	Level of GPN success with delivering health checks
Program champion	Evidence of a 'champion' at the practice?
Implementation support	Extent to which the intervention was supported/hindered by the practice management?
	GPNs feeling supported to undertake the tasks related to the intervention?

Source: Scaccia et al. (2015).

**Table 4.** Baseline characteristics of all practices.

	Intervention		Control		Total	
No. of practices	11		11		22	
NSW	8		7		15	
SA	3		4		7	
Size of practices	Five practices <5 GPs Six practices ≥5 GPs		Five practice <5 GPs Six practices ≥5 GPs			
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Participating GPs/all GPs in practices	17/54	31.5	24/63	38.1	41/117	35.0
Participating GPNs/all GPNs in practices	19/24	79.2	18/22	81.8	37/46	80.4
Total participants	36/78	46.2	42/85	49.4	78/163	48.1

Monetary incentives were provided to all participating practices. A A\$1000 one-off payment, and also payments to support the GPN health checks (A\$40 per patient) and

follow up (A\$20 per patient). Continuing professional development activities contributed towards GPN and GP professional educational criteria.

**Table 5.** Baseline characteristics of all providers.

	GPs (n)	%	GPNs (n)	%	Total (n)	%
<b>State</b>						
NSW	26	63.4	24	64.9	50	64.1
SA	15	36.6	13	35.1	28	35.9
Total	41		37		78	
<b>Intervention</b>						
Intervention	17	41.5	19	51.4	36	46.2
Control	24	58.5	18	48.6	42	53.8
<b>Gender</b>						
Female	20		34		54	
Male	21		3		24	
<b>Age group (years)</b>						
20–34	6	14.6	20	54.1	26	33.3
35–44	10	24.4	6	16.2	16	20.5
45–54	9	22.0	8	21.6	17	21.8
55–64	14	34.1	2	5.4	16	20.5
≥65	2	4.9	0	0.0	2	2.6
<b>Work status</b>						
Full-time	35	85.4	13	35.1	48	61.5
Part-time	6	14.6	24	64.9	30	38.5
<b>Years of work in general practice</b>						
	Mean	s.d.	Mean	s.d.	Mean	s.d.
Years in general practice	14.5	12.3	4	4.5	9.6	10.8
Missing (6 cases)	3		3			
Years in this practice	10.1	12.1	2.2	3.0	6.3	9.7
Missing (1 case)	1		0			
<b>Use of apps/websites with patients</b>						
	n	%	n	%	n	%
Never/rarely	19	46.3	18	48.6	37	47.4
Sometimes/half the time	16	39	10	27	26	33.3
Often/usually/always	6	14.6	9	25	15	19.2
						n.s.
<b>Confidence showing patient how to use apps</b>						
	n	%	n	%	n	%
Not at all confident	7	17.1	2	5.6	9	11.7
Minimally confident	10	24.4	8	22.2	18	23.4
Somewhat confident	15	36.6	7	19.4	22	28.6
Moderately confident	7	17.1	11	30.6	18	23.4
Very confident	2	4.9	8	22.2	10	13.0
						P = 0.041

<sup>A</sup>Fisher's exact test.

All but one practice indicated at the outset that the intervention would be achievable, although the time commitment required by GPNs raised some concerns. In one smaller Sydney practice where the GP worked across two sites, reluctance was observed as the GP had agreed to participate while the GPN was on leave. Despite generally good motivation levels initially, these were observed to decline in some practices over time, with ROs and facilitators describing a steady loss of motivation due to work pressures, inadequate staffing or changes in staffing, organisational barriers and

competing clinical priorities, including accreditation and a busy influenza season. For one new but rapidly expanding practice, motivation decreased as the practice gained momentum.

## General organisational capacity

### Climate/culture

Multiple and varied practice structures were observed. Most practices displayed a 'top-down approach', where decisions were made by the GP/s resulting in a perception by staff that they had limited opportunity to contribute, and

**Table 6.** Practice data mapped according to organisational readiness domains.

Component		NSW 01	NSW 02	NSW 03	NSW 04	NSW 05	NSW 06	NSW 08	SA 01	SA 02	SA 03
General characteristics											
Size of practice (no. of GPs)		<5	≥5	<5	<5	<5	<5	<5	≥5	<5	≥5
No. of GPNs		1	2	4	1	4	1	3	1	2	4
No. of participating GPNs		1	1–2	1	1	1	1	1	1	2	2
No. of patients recruited		50	27	51	3	9	4	1	11	5	12
No. of health checks conducted		21	15	24	0	2	2	1	10	5	4
Motivation											
Compatibility	Was the intervention perceived as consistent with existing values and beliefs?	Unclear	Yes	Unclear	Unclear	Unclear	Unclear	Unclear	Yes	Yes	Yes
Complexity	Did the practice feel the intervention was 'doable'?	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Yes	Yes
Priority	Was the HeLP-GP intervention of priority?	Yes	Yes	No	Yes	Yes	No	No	No	Yes	No
Organisational capacity											
Culture/climate	Were the practice staff (GPNs, practice managers, reception, GPs) equally involved in decision-making around involvement with the intervention?	No	No	No	No	No	No	No	Yes	No	No
	Was there scope for practice staff (particularly GPNs) to have ownership of their role/participation in the intervention?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Did the practice staff express job satisfaction?	Unclear	Yes	Yes	Yes	No	Unclear	Unclear	Unclear	Unclear	No
General capacity/resource utilisation	Were sufficient staff available at the practice to participate?	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Was there evidence of GPN turnover?	No	Yes	Yes	No	Yes	No	Yes	No	No	Yes
	Were notable practice issues related to space, equipment, or technical resources identified?	No	Yes	No	No	No	No	No	No	Yes	No
Leadership	Was there evidence of effective leadership within the practice?	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No
Intervention specific capacity											
Supportive climate	What was the level of GPN receptiveness to the intervention?	Medium	Medium	Medium	High	High	Low	Low	High	Medium	Medium
	Was there general support for the intervention by staff other than the GPN in the practice (i.e. receptionists, practice manager)?	Medium	High	Medium	High	Medium	Medium	Medium	Medium	Low	Low

(Continued on next page)

**Table 6.** (Continued).

	Component	NSW 01	NSW 02	NSW 03	NSW 04	NSW 05	NSW 06	NSW 08	SA 01	SA 02	SA 03
Intervention specific resources	What was the rate of uptake of trial resources?	Medium	High	High	High	High	Medium	Low	Low	Low	Low
	Were time and resource issues expressed/experienced by the practice?	No	Yes	Yes	No	No	Yes	No	No	Yes	Yes
	Were difficulties experienced with systems? (DCP, health check templates, <i>mynapp</i> , Get Healthy)?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	What was the level of capacity/enthusiasm of the GPN for training?	Medium	Medium	Medium	Medium	Low	Medium	Low	Medium	Low	Medium
	What was the level of GPN engagement with the facilitation sessions?	High	Med-High	High	NA	Medium	High	Medium	Medium	Medium	Medium
GPN skills, knowledge and abilities to deliver the intervention	What was the level of GPN confidence conducting health checks?	High	Medium	High	NA	High	High	High	High	High	High
	What was the level of GPN confidence to work with the patient with <i>mynapp</i> ?	Low	High	Medium	NA	Medium	High	Medium	High	High	Medium
	What was the level of GPN confidence to refer patients to Get Healthy?	High	High	High	NA	High	High	High	High	High	High
	What was the level of GPN success with delivering health checks?	High	Medium	High	NA	High	High	High	High	High	High
Program champion or driver	Was there a 'champion' at the practice?	No	No	No	No	No	No	No	No	No	No
Implementation support	To what extent was the intervention supported or hindered by the practice management?	Well-supported	Well-supported	Well-supported	Well-supported	Well-supported	Supported	Supported	Supported	Supported	Supported
	Did GPNs feel supported to undertake intervention tasks?	No	Yes	No	No	No	No	No	Yes	Yes	Yes



hence limited opportunity to initiate or influence changes within the practice. Only in one SA practice were the GP, GPN and practice manager observed to equally influence the decision to participate. Here, the GPN was proactive and clearly supported by the GP, indicating mutual trust and respect within the relationship. Conversely, reception staff at this practice were not engaged in decision-making, despite being tasked with the distribution of trial materials to potentially eligible patients.

Despite a general tendency for GPNs to lack larger decision-making capacity within the practice, they seemed consistently autonomous in their day-to-day clinical work. GPs did not micromanage or monitor the GPNs delivery of, or the involvement of, other staff in the HeLP-GP intervention. ROs and facilitators reported that GPs were largely unaware whether the reception staff or GPNs were actively undertaking the trial tasks, or completing them according to trial protocols. Coordinating roles were sometimes undertaken by practice managers. In other cases, GPNs coordinated the reception staff and the GP to complete tasks, but this was specific to a few practices only.

### Staffing and resources

No space, equipment or staffing issues were identified initially; however, consistent, widespread GPN turnover significantly impacted the capacity to implement the HeLP-GP intervention. As GPNs infrequently notified the trial they were leaving, we were unable to elicit whether this level of turnover represented dissatisfaction with their employment, or some other work-related or personal trigger. Both study groups experienced substantial turnover, slightly higher in the intervention group (11 vs 8 GPNs). GPN turnover affected half of all intervention practices at some point and was a persistent disruptive element within the trial. At each occurrence, ROs and facilitators had to repeat orientation, support visits and training. It was also challenging for new GPNs to pick up the role part way through the trial; they did not always feel confident with the research tasks, did not have existing rapport with the patients and were sometimes unhappy with the unexpected workload/role. Consequently, the level of engagement of these 'replacement' nurses varied, and additional input from researchers was essential to achieve completion in the practices with consistent turnover.

### Leadership and communication

Leadership was notably 'top-down' in style. The degree of practice leadership observed was variable and often linked to the attributes of individuals rather than a practice-wide norm. Levels of leadership were influenced by staffing arrangements and the consistency or fluctuation of staffing levels. Difficulties establishing good lines of communication were experienced by ROs and facilitators. The primary contact in a given practice could be the GP, the practice

manager, the GPN or a combination of these. In some cases, direct contact could be made with reception staff, whereas in others, it was via another discipline. Particularly difficult were those circumstances where access to the primary contact was poor (e.g. a message had to be left for the GP), where the primary contact worked part-time/weekends, and in practices where inter-office communication was disorganised. It was crucial to this research to identify the main contact at each practice, to build individual relationships and develop tailored methods for interactions. This, however, took time, and required considerable patience, interpersonal skills and flexibility. In some practices, the reception staff were consistent, in others, there were multiple receptionists working different shifts, or more than one receptionist working at a time. Lines of responsibility and accountability were frequently vague or hard to discern.

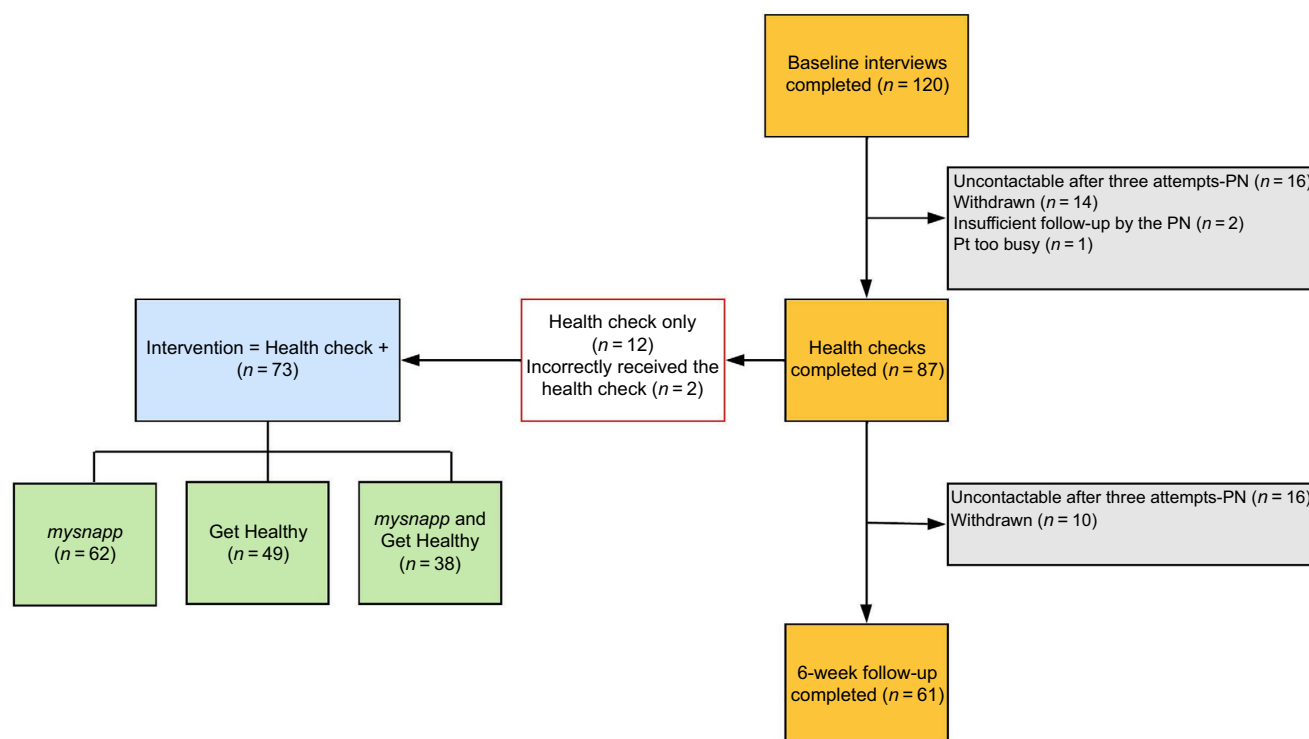
### Intervention specific capacity

**GPN skills, knowledge and ability to deliver the HeLP-GP intervention.** GPNs were comfortable with the clinical content of the health check, which aligned well with their day-to-day clinical work. Despite this, ROs and facilitators reported significant ambivalence on the part of some GPNs to conduct the health checks, noting a mix of disinterest, reluctance and a lack of confidence to engage patients in the intervention. GPNs demonstrated variable success delivering the health checks. In total 73 of 120 (61%) consenting patients received the intervention (Fig. 2). At the point of health check, 14 patients withdrew, and 16 patients could not be contacted after three attempts by the GPN. The health check was not completed for two patients who received insufficient follow up by the GPN, and one patient who was too busy to attend. Two patients incorrectly received the intervention. GPNs successfully conducted 6-week follow up with 61 of 73 (84%) patients who had received the health check. The mean number of days between the health check and the 6-week follow up was 64.2 days (range 42–199 days), indicating that this was frequently provided outside the trial designated timeframe of 42 days.

Referral to Get Healthy and set up with *mynsnapp* required attendance at the health check, and were therefore impacted when the health check was not conducted. Referral to Get Healthy could be initiated by phone, fax or email and did not itself present a barrier. Nurses, however, demonstrated variability in skill and confidence related to the introduction and set up of *mynsnapp*. In the cases where GPN confidence was identified as a factor, additional facilitation was provided to encourage maximum uptake.

Within one Sydney practice that prioritised accreditation over the intervention, the GPN model was supplemented by two casual nurses employed by the research to complete the patient health checks. We subsequently also offered this alternative to other practices that were struggling with the completion of health checks, but the offer was declined.





**Fig. 2.** HeLP-GP intervention summary.

**Practice factors affecting the implementation of the HeLP-GP intervention by GPNs.** Practices uniformly required a great deal more RO support than anticipated. Many practices required constant reminders and prompting to undertake tasks, and reinforcement about the reasoning behind these. Lack of time and workload were frequently cited as reasons for incompleteness. We did not identify a clear program ‘champion’ at any of the practices (i.e. someone who actively supported the intervention and provided continuous leadership), although we did identify some individuals who had a stronger interest in the intervention and responded in a timelier way. We also did not identify specific people (or roles) within the practices prepared to advocate or promote significant changes, either to facilitate the intervention or because of the intervention. In at least half of the practices, the intervention was generally supported by the practice management (usually the GP/s); however, this did not appear to translate to the GPNs feeling supported to undertake the intervention. We identified six of 10 practices where GPNs expressed that they felt insufficiently supported from within the practice to undertake the intervention with patients.

**Uptake of resources and the use of trial systems by nurses.** An extensive range of resources were developed for the trial, and provided in paper, digital and online modes (Table 7). It was not possible to monitor the uptake and use of all resources, but online training for GPNs was generally

well received. Although some GPNs were enthusiastic about the training, the completion of all three modules proved onerous for others, despite being in a format that could be done at any time, and be used to apply for professional and educational recognition. GPNs were not paid to undertake the training. The website designed to support processes and mechanisms for feedback by GPNs and GPs was generally poorly utilised.

Over the trial period, most practices experienced some technical difficulties, particularly with internet connection and speed, which proved particularly problematic for GPNs when trying to set up *mysnapp* for patients. We had anticipated difficulties with the app set up and had provided detailed troubleshooting documents and a reference video, but we do not know the extent to which these were utilised. Nurses appreciated the guidance and support provided through the facilitation visits. We envisaged a total of three 1-h facilitation visits to each practice; however, an average of 4.7 visits were required (4.5 visits NSW; 5.3 visits SA). Facilitation 2 (the visit where the GPNs were briefed around the intervention), took an average of 98 min. This extra time was due to a combination of higher GPN need (unfamiliarity with apps, uploading health check templates and training to use trial software) and repeat visits due to GPN turnover. The distance of some practices from the research centre resulted in just over 5 h per practice of travel time (Table 8).

Table 7. List of trial resources.

	Resource	Source	Audience
Facilitation	Primary health network flip book guide to facilitation visits	Microsoft teams	Facilitator
	Intervention facilitator diary of practice visits	Microsoft teams	Facilitator
Training	Modules 1, 2, 3	Smart sparrow educational platform via provider website	GPN, GP
Intervention	Overview of the HeLP-GP clinical intervention	Microsoft teams, practice package (hard copy), provider website	Practice
	DCP instructions	Provider website	Practice
	Protocol summary for GPs	Microsoft teams, practice package (hard copy), provider website	Practice
	Flow chart/flip book to support nurses to deliver health checks/ follow up	Microsoft teams, practice package (hard copy), provider website	GPN
	Health check template	Practice package (hard copy), clinical software	GPN
	mynsapp information for practices – troubleshooting	Practice package (hard copy), patient website	GPN, Patient
	mynsapp information for practices iOS and Android	Practice package (hard copy), patient website	GPN, Patient
	mynsapp video	Teams, practice package, patient website	GPN, Patient
	Get Healthy referral materials	Teams, practice package	GPN

Discussion

Using an organisational readiness lens provides a valuable opportunity to reflect on factors influencing this GPN-led obesity intervention, and to provide context around the trial results. Despite the natural variation in the size, workforce, context and capacity of Australian general practices (NSW Agency for Clinical Innovation 2015), the identification of common organisational elements presents some broad observations and suggestions regarding the level of organisational readiness required for this type of nurse-led activity. Although we noted variation across all domains of the organisational readiness framework, the domain of intervention-specific capacity displayed the largest variation among practices.

Practice interest in this trial was largely driven by the ability to provide an in-house weight management program

Table 8. Facilitation summary.

Average number of visits	NSW (8 practices)	4.5	Range 1–7
	SA (3 practices)	5.3	Range 1–8
	All practices	4.7	
Average time spent (min) per visit:	Scheduling	9	
	Travel	67	
	Waiting	14	
	Facilitation	48	
	Follow-up visit 1 only	40	
	Follow-up visit 2 only	98	
	Follow-up visit 3 only	34	

in response to growing numbers of overweight and obese patients. The HeLP-GP intervention was, however, not highly prioritised by practices, and the need to follow protocols, collect data and work within timeframes was frequently overlooked. We acknowledge that difficulties experienced with trial software and internet issues contributed to frustration and negative attitudes among some GPNs and receptionists, and the length of the trial (12–14 months) may have resulted in some research fatigue.

The turnover of GPNs was much higher and widespread than anticipated, and this severely impacted the trial. This affected both groups within the trial, with half of all GPNs who initially consented leaving at some point. Nurse turnover was experienced in half of the intervention practices, possibly contributing to reduced numbers of health checks, increased delays in follow up, and facilitation with the app and Get Healthy. This turnover may have led to delays with patients getting appointments, and some disengagement and dissatisfaction among patients with the intervention. We are unclear what this level of turnover represents, although nurse retention is a widespread problem in Australia (Dawson et al. 2014), and low satisfaction has been associated with poor retention among Australian GPNs (Halcomb et al. 2021).

The positioning of GPNs within general practice appears to have influenced, at least in part, the enthusiasm and willingness of some to participate fully in the HeLP-GP intervention. Although GPNs were frequently autonomous in their clinical work, we observed a general lack of practice-based support for them related to intervention delivery. Disorganised, dynamic environments and lack of strong leadership or ‘top down’ decision-making were observed, and this potentially contributed to a reduced sense of teamwork or lack of acknowledgement for the GPN (McInnes et al. 2015). Similarly, the lack of ‘champions’ for prevention and the project within the practice was an important deficiency, and has been noted in other research (Shaw et al. 2012). Despite efforts at recruitment to speak to and engage as many GPNs as possible, they were often not included in the decision to participate in the trial. GPNs' time was reimbursed to the

practice, but there were few direct incentives for the GPNs to participate (apart from a certificate for continuing education and a fitness tracker). This has been shown in other nurse-led weight management programs to cause poor ownership and commitment (Ross *et al.* 2008). Additionally, high turnover meant that many GPNs inherited a role they were not prepared for and possibly did not want. GPNs were responsible for the bulk of the trial responsibilities, including in many cases, coordination of the receptionists and the GPs. In part, intervention success was therefore reliant on the individual's level of interest, expertise and availability (and in one practice this was enhanced by employing casual nurses). Many GPs and GPNs expressed concern at the outset about the possible impost on GPNs. Approximately 65% of GPNs were employed in the practice part-time, and it appeared that many GPNs were under-resourced to take on the extra work. Although some remuneration was provided through the trial, GPNs could not bill their time to Medicare.

The general profile of GPNs in Australia is one of varying levels of experience and training, compounded by the geographic location in which they work, the type of population they see and the parameters placed on their role by their employers (Australian College of Nursing 2019; Halcomb *et al.* 2021). GPNs are constrained by the lack of postgraduate opportunities for training relevant to general practice (Heywood and Laurence 2018) and a preference for roles geared towards procedural support tasks that can be reimbursed through Medicare (Henderson *et al.* 2014). In this trial, we observed substantially different individual levels of proficiency with intervention tasks, possibly due to variations in skill levels, confidence to provide education and motivational interviewing, interest, and/or priority. This has similarly been reported in other studies in which nurses support lifestyle risk reduction for obesity (Zhu *et al.* 2013; Phillips *et al.* 2014; Campbell-Scherer *et al.* 2019; Hinks 2022). Specific intervention training was provided, and monitoring and reinforcement provided through the facilitation sessions. Basic clinical tasks inherent in the health check (blood pressure, body mass index, waist circumference etc.) and follow up of patients did not produce notable difficulties; however, we observed some difficulty/reluctance to get patients to attend the health check or to provide sufficient follow up to get patients through the intervention. Referral to the telephone coaching also did not prove problematic, but we noted low confidence among some GPNs with instructing their patients on *mynsapp*. It may have been this lack of confidence that resulted in low willingness to help patients to install the app or to teach them to use it. Although some GPNs were very comfortable with the technology, it may be a role that could be delegated to non-clinical community health workers with more time to support patients in its use (Li *et al.* 2022).

The HeLP-GP intervention aimed to assess the value, sustainability and scalability of a nurse-led model to provide prevention and management to overweight and obese patients.

The challenges identified have implications for this in future. The option used in one NSW practice, where additional nurses were paid to conduct the health checks for enrolled patients, proved more efficient and generally more successful than using the usual GPN. Although this may be a suitable solution for short-term research, it is not a low-cost, easy to implement, scalable or sustainable model for general practice. Our experience suggests that undertaking a health check and undertaking lifestyle management for this population is a relatively complex organisational activity that requires more than training to integrate into daily workflow.

## Strengths and limitations

The use of a recognised organisational readiness framework provides an additional avenue by which to build context around the HeLP-GP trial findings, particularly the structures, organisation and funding, which are important implementation considerations in this setting. The decision to assess organisational readiness was, however, done post-hoc. Quantitative data were obtained from a range of trial instruments, and qualitative documentation was collected by the ROs and facilitators through their interactions with the practices. The use of these data and the group workshop to populate the framework, was done post-intervention. Although this provided a broader and richer understanding of the factors affecting organisational readiness within the trial, as well as substantiating the views of individuals, it is possible that some bias may have been introduced. Researchers may have already developed ideas and beliefs (positive or negative) about individual practices that were reflected in their responses at this juncture. Also, the assessment of organisational readiness reflects the period of the trial only, and therefore only whatever cultural or workforce situation was present within each practice at this time. As general practices are fluid entities, this may be an indication only of their state of organisational readiness.

## Conclusions

This evaluation of organisational readiness among the intervention practices in the HeLP-GP trial has provided valuable contextual information to supplement the trial results. It would be a valuable resource to employ pre-trial to identify practices and practitioners that might be best able to deliver the programme, or to identify barriers to capacity prior to commencing research. Within general practice this should assess both the capacity of the individual responsible for the implementation and the practice generally. This study showed a lack of general 'readiness' inherent in the GPN role. If GPNs are to participate in research, and fulfil their potential in supporting patients to reduce risk and adopt healthier life choices, our study indicates that more could be done to improve

their workforce positioning and remuneration, which may improve continuity of care, retention and individual motivation.

## Supplementary material

Supplementary material is available [online](#).

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**Data availability.** The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request. A preprint of this paper has been provided to Research Square: <https://www.researchsquare.com/article/rs-431662/v1>.

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