

Primary health care nurses and heart failure education: a survey

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ABSTRACT

INTRODUCTION: Heart failure education contributes to effective self-management. New Zealand primary health care nurses' contributions to heart failure educational activities have not been researched.

AIM: To identify primary health care nurses' heart failure educational activities in terms of duration and frequency, topics covered, resources used and strategies for Māori and other ethnic groups.

METHODS: A cross-sectional survey of a random sample of 961 primary health care nurses using a postal questionnaire.

RESULTS: Of 630 respondents (65.5%), 369 worked with patients with heart failure and 339 provided heart failure education. One-third of respondents providing education (33.3%; n=113) delivered sessions from 16 to 60 minutes. The main educational topics covered were on the physical aspects of heart failure; prognosis, spiritual/existential and psychosocial topics were least often addressed. One-quarter of the group providing education did not use educational resources (n=86). The majority of respondents reported they would find more education about heart failure useful or very useful (80.2%; n=292), along with nurse practitioner support (64.7%; n=229). Māori-centred services and resources and involving whānau/family in education were the most frequently mentioned Māori-specific education strategies.

DISCUSSION: A consistent approach to heart failure education is important to address knowledge gaps in a timely manner. This study affirms the contribution made by primary health care nurses in chronic illness education and highlights the need for further development and investment in ongoing heart failure nursing education and specialist nursing support.

KEYWORDS: Health education; heart failure; Māori; nurses; primary health care; self care

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Introduction

Heart failure (HF) is a chronic illness, with wide-ranging symptoms requiring daily monitoring and lifestyle adaptation. This syndrome results from diseases impairing the heart's function.¹ Signs and symptoms include shortness of breath, fluid retention, fatigue, and exercise intolerance.² Considerable knowledge is required to manage these symptoms, and people with HF also need to know when to ask for help.³ Patient education, developing self-management skills, and pharmacological along with non-pharmacological management are key initial interventions in the primary care context.⁴

HF education topics include weight monitoring and response according to signs and symptoms, medication use, dietary and fluid requirements, and appropriate exercise.¹ The aim of self-management support education is to develop confident decision-making skills, leading to self-efficacy—belief in the ability to make changes in behaviour and improve health outcomes.⁵ Illness self-management is an integral component of the Chronic Care Model that underpins multidisciplinary care⁶ and takes a systemic approach to 'assure consistent delivery of evidence-based treatment in tandem with support for patient self-management' (p.S-9).⁷ There is evidence of an association with intensive HF patient education along with

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self-management programmes in hospital and community settings, and reduced hospitalisation.⁸⁻¹⁰ However, people with HF report knowledge gaps and lack of understanding about the condition.^{11,12} Ongoing education is also required throughout the duration of the illness.^{11,13,14}

Primary health care (PHC) services are key health education providers as the first point of contact for most people, with their goal of bringing 'health care as close as possible to where people live and work' (p.2),¹⁵ as well as being providers of ongoing care. New Zealand PHC nurses contribute to structured education programmes for people with chronic illness,¹⁶⁻¹⁸ supported by the Care Plus scheme initiated in 2004, enabling initial assessment, care plan development and regular monitoring,¹⁹ along with funding improving access to services. Nursing capacity has been enhanced with workforce funding for postgraduate education and the development of specific papers on long-term conditions.²⁰ There are also gaps in PHC services as the support for HF management, including patient and family education, was found to be poor in a survey of 15 district health boards (DHBs).²¹ There are increasing demands on PHC services in terms of illness severity and scope of care; professional team work and optimum role utilisation is necessary to improve outcomes relating to self-management of chronic illnesses.²²

This study sought to describe New Zealand PHC nurses' contributions to HF education, given the research gap in this area. The focus on HF is informed by the findings of patients' lack of understanding about HF^{11,12} and the effect of higher levels of education and self-management in reducing hospitalisation for symptom treatment.⁸⁻¹⁰ The study's aim was to identify the time PHC nurses spent in educational activities with HF patients, the topics covered and types of educational resources used to support this education. We were also interested in identifying specific education strategies used with Māori and other ethnic groups given significant ethnic mortality and hospitalisation disparities.^{23,24} When compared to non-Māori, higher rates of Māori HF mortality (RR 1.92) and hospitalisation (RR 4.46) have been documented.²³ Pacific people are twice as likely, when compared to the New Zealand

total population, to be diagnosed with HF on hospital discharge.²⁴

Methods

The research design was a descriptive cross-sectional survey. Ethical approval for this study was granted by the Massey University Human Ethics Committee (Ref. 09/68). One thousand questionnaires were mailed to a random sample of PHC nurses on the Nursing Council of New Zealand database (a total of 4673 nurses at the time of posting in 2010 in the *Primary health care* and *Practice nursing* categories). The Nursing Council of New Zealand managed the randomisation process and the sample selection from the database of nurses who had agreed to be contacted for research purposes. Thirty-nine nurses who received questionnaires informed us they were not eligible, as they did not work in the PHC sector at the time, resulting in a total sample of 961. A sample size of 197 respondents was required to show an 80% probability of a statistically significant result, with a 0.2 population correlation based on a 0.05 alpha level to test associations between session times, qualifications and experience.

The HF education survey questions were part of a larger questionnaire about internet health information. Aspects of the questionnaire had been used previously in a survey of medical ward nurses.²⁵ The quantitative and open-ended qualitative questions were developed from the literature, consultation with clinical experts and the research team's expertise. The questionnaire was piloted with five PHC nurses for face validity and clarity. There were questions on the time spent with the last client/family and the usual time spent in HF education with clients. One question provided a list of key HF resources and asked the respondent to check all relevant options. The question options for education topics were based on findings from previous research about patients' educational needs.^{26,27} There were questions on the use of online resources, the usefulness of further HF education for staff, and the usefulness of being able to consult with a nurse practitioner in an HF role. The question on nurse practitioners was prompted by Ministry of Health support for the nurse practitioner role in PHC.²⁸ Open-ended questions included inquiry about HF educational

interventions used by the respondents with Māori clients or their whānau (family), and ideas about improvements in information access and use for specific ethnic groups. The demographic questions included qualification level and work setting, to enable exploration of associations between these variables and HF education.

The quantitative data are predominantly presented in descriptive statistics. Statistical analysis was by SPSS version 19.0 (IBM SPSS Inc., Chicago, IL, USA) for Windows. Correlations were measured with the Spearman's rho (r) test, as the questions about length of session times and level of nursing qualifications generated ordinal data. Correlations measure the association between two variables, the r value showing the strength of the association (up to 0.2 weak, 0.3–0.6 moderate and 0.7–1 a strong association).²⁹ Categorical tests of proportions were by the Pearson's Chi-square test. The total responses vary by question as completion of the questions was voluntary. The qualitative data were analysed through content analysis—texts were coded, categorised and a frequency count of the categories generated.³⁰ Illustrative quotes are included in order to validate categories.

Results

The final response was 630 (65.5%) from the total random sample of 961. A total of 369 respondents cared for people with HF (58.6% of the total number of respondents; 38.4% of the total random sample). The demographic characteristics of the respondents who worked with HF patients are detailed in Table 1. Mean years working as a nurse was 25.6 years, with 12 years the mean for working in the PHC sector. The sample of PHC respondents working with HF patients differs from the overall registered nursing workforce as reported by the Nursing Council of New Zealand,³¹ where 92% are female (99.5% in the study sample), mean age of 45.6 years (49.9 years in the study sample), 68% are New Zealand European/Pākehā (78% in the study sample) and 7% are Māori (11.8% in the study sample). The sample is closer to the overall PHC/practice nurse workforce as reported by the Nursing Council in gender (97% of this group are female) and ethnicity (76% are NZ European/Pākehā and 9.8% Māori).³¹

WHAT GAP THIS FILLS

What we already know: Ongoing patient education about heart failure and self-management programmes are associated with reduced hospitalisation. Primary health care nurses increasingly contribute to chronic illness education programmes, supported by policy initiatives, such as the Care Plus scheme.

What this study adds: The study identifies the time spent by primary health care nurses on heart failure education, the educational resources used and common topics covered. Implications for practice include addressing gaps in educational content, improving heart failure information access and use for specific ethnic groups, and providing education for nurses in the management of heart failure.

Table 1. Demographic characteristics of nurses caring for people with heart failure

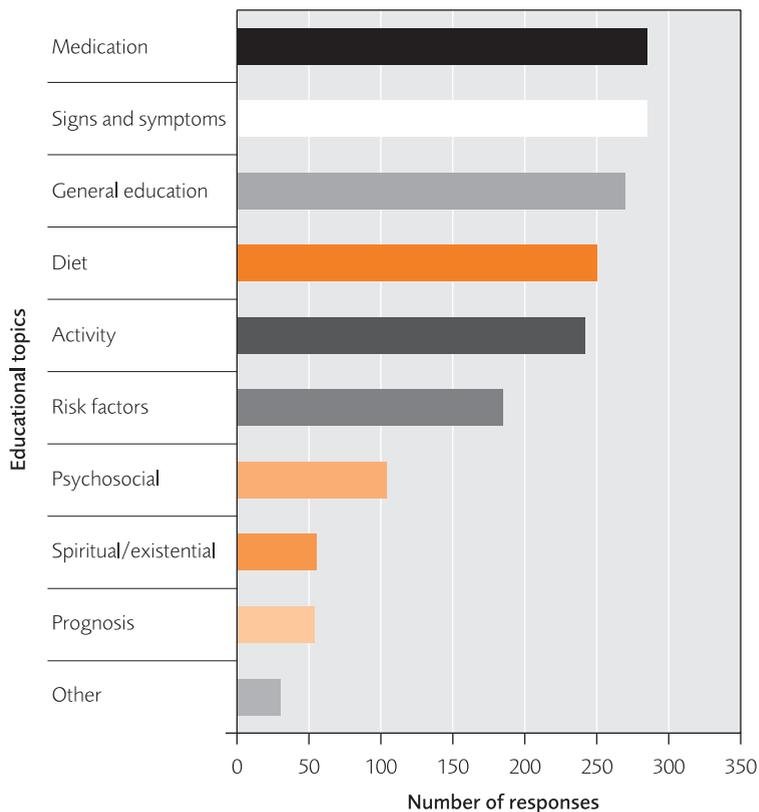
		N=369	
		n	%
Gender	Female	364	99.5
	Male	2	0.5
Age	Range	23–69 yrs	
	Mean (SD)	49.97 yrs (9.278)	
Ethnicity	New Zealand European	283	78.0
	Māori	43	11.8
	Samoan	5	1.4
	Tongan	3	0.8
	Chinese	5	1.4
	Other	24	6.6
Highest professional qualification	Certificate	112	30.8
	Diploma	55	15.1
	Degree	70	19.2
	Postgraduate certificate	64	17.6
	Postgraduate diploma	39	10.7
	Master's degree	24	6.6
Work setting	General practice	265	73.2
	Māori health provider	41	11.3
	Pacific health provider	5	1.4
	Non-governmental organisation	10	2.8
	Department of Corrections	7	1.9
	Other	34	9.4

Just under half the respondents had appointments several times a week or more (44%; n=159, Table 2) with HF patients and 91.8% (n=339) usually provided patient education on HF. Respondents self-reported their estimate of the time they spent in education activities. There was a strong association between the time

Table 2. Frequency and time spent on heart failure education

Question	Categories	%	n	Median
Frequency of care for people with heart failure	4 = Every day	11.9	43	2.00
	3 = Several times a week	32.1	116	
	2 = Several times a month	34.9	126	
	1 = Every few months	18.0	65	
	0 = Once a year or less	3.0	11	
Educational time spent with last patient	4 = 31–60 minutes	9.2	33	2.00
	3 = 16–30 minutes	21.7	78	
	2 = 6–15 minutes	38.1	137	
	1 = 1–5 minutes	24.2	87	
	0 = 0 minutes	6.9	25	
Educational time usually spent with patient	4 = 31–60 minutes	9.0	32	2.00
	3 = 16–30 minutes	22.8	81	
	2 = 6–15 minutes	39.9	142	
	1 = 1–5 minutes	23.6	84	
	0 = 0 minutes	4.8	17	

Figure 1. Heart failure education topics



reportedly spent with their last patient and the usual amount of time providing education ($r_s=0.752$; $N=352$; $p<0.001$). The majority of respondents who provided education usually spent 15 minutes or less doing so at each client visit (66.7%; $n=226$). One-third (33.3%; $n=113$) delivered sessions from 16 to 60 minutes in duration. There was a weak but positive correlation between usual time spent on educational activity and level of nursing qualification ($r_s=0.162$; $N=352$; $p=0.002$), and a weak but negatively correlated relationship between time spent on educational activity and years as a nurse ($r_s=-0.112$; $N=356$; $p=0.035$), that is a weak association between more years of experience and shorter education sessions.

There was a significant relationship between working for a Māori provider and longer education sessions (median 3, 16–30 minutes) as compared to respondents working for general practices (median 2, 6–15 minutes) (Fisher’s exact test [3, $N=289$]=21.053; $p<0.001$). Almost two-thirds (63.4%; $n=26$) of respondents working for Māori providers provided sessions 16 minutes and over in duration compared to 26.3% ($n=65$) of general practice respondents. Proportionately more respondents employed by Māori providers had postgraduate qualifications (51.2%; $n=21$) compared with general practice respondents (30.6%; $n=81$), and this was statistically significant (χ^2 [1, $N=306$]=6.816; $p=0.012$).

The most frequently delivered educational topics were medication, signs and symptoms, general education, diet and activity (Figure 1). Prognosis, spiritual/existential and psychosocial topics were the least addressed. The majority of respondents reported that they would find more education about HF useful to very useful (80.2%; $n=292$) and 64.7% ($n=229$) reported that they would find the support of a nurse practitioner specialising in HF also useful to very useful. There was a statistically significant association between working in a Māori provider and reporting that a nurse practitioner position would be useful to very useful (85.4%) compared with general practice respondents (60.9%; $n=156$) (χ^2 [1, $N=297$]=9.188; $p=0.002$). There was no difference between the groups in rating the usefulness of more education (χ^2 [1, $N=303$]=2.699; $p=0.134$).

Table 3. Education interventions and resources used with Māori clients/whānau (family)

Category	Comments: illustrative quotes	Number of comments in this category
Same as for non-Māori	[We] don't discriminate. All patients use English. [There is] not a large Māori population in this area.	71
Māori-centred education resources and services	[We] offer referral to an Iwi nurse [employed by a Māori health provider]. Many clients are seen by a local Māori provider for ongoing education/treatment. We do have easy access to Māori providers. [We] work closely with the Kaitiaki [community health workers] team based in community [and] go with them if appropriate. [We] work with the DSM nurse [Disease State Management Nurse]. Resources are often Pākehā (European New Zealander)–based. Would be good to have some in Māori or Pacific languages.	27
Involve whānau	Whānau [are] encouraged to come along and be part of discussions/appointment. [We have] discussions re. action plans/with whānau. [We] encourage whānau participation/education partnership.	24
Referral to specialists	We use a specialist heart failure nurse on our staff. Also we have a cardiologist/echo machine on a visiting basis. Resources are supplied by a local Heart Failure Nurse at the hospital.	16
Information accessibility	Visual resources work the best. [Use] visual aids and open questions to ascertain level of understanding. Use any available that are relevant and presented from a Māori point of view. [Use] more practical everyday examples, more visual information, diagrams.	15
Face-to-face discussion	[Use] face-to-face [discussion]. Make it personal. Take the time to explain and talk with patients.	14

The respondents mainly used printed HF education resources produced by the National Heart Foundation of New Zealand. The *Staying Well with Heart Failure* booklet³² was a frequently used resource (192 responses), along with an older booklet *Living with Heart Failure* (printed version 145 responses, online version 82 responses) and the pamphlet *What is Heart Failure?* (134 responses). Note, the question on the use of educational resources could have more than one response. Comments about the National Heart Foundation of New Zealand resources included: 'easy to understand'; 'positive approach'; 'well illustrated'; 'individual action plans'; 'something tangible for the patient'; 'encourages self-management'; 'easy access'. Infrequently used resources

were the video *Kei te Mate to Manawa—Living with Heart Failure* developed for Māori patients (15 responses) and the online site *Health Navigator NZ—Heart Failure* (19 responses). A minority used online sources (21.9%; n=78); 30 of this group had referred patients within the last month to online sites.

One-quarter of respondents involved in educational activities did not use educational material (25.3%; n=86). Comments as to why materials were not used included 'experience'; 'hospital-based training and cardiac experience'; 'leave it to the Doctor'; 'don't want to give contradictory information'; 'my favourite resource is myself! I can make it relevant to them at

Table 4. Suggestions for improving access and use of heart failure information by ethnicity

Category	Comments: illustrative quotes	Number of comments in this category
Language	I work with a large number of different ethnicities for which there is often no translated information. Online access to education in immigrant languages with English translation (so we know what it says) and can be printed off. We have interpreters for most languages.	33
Resources	I feel our practice should hold some ethnic group-specific pamphlets. Most clients do not own computers or know how to use them. DVDs or tapes are good resources (not available). Limited access in prison. We do what we can with printed material.	20
Professional issues	[There are] fragmented health care services in the community. More doctors could refer patients to our clinics. Doctors appear fearful about losing control. [It is] useful to have a better understanding of other cultures. Nurses [need to] be made aware of heart failure patients. [Nurses] need more in-service [training] on heart failure. We do cardiovascular risk assessments but need to give patients better feedback.	10
Accessible information	Not all people can read or write. Keep it easy to follow, e.g. a flip chart. Picture books are great—less writing.	10
Relationship and time	Ensure clients/professionals are comfortable working together. Respect their culture/whānau/individuals. Take more time for discussion and invite them for follow-up checks.	7
Accessible services	[There is a] lack of doctors available [and] petrol prices mean people come to town less often. We have problems getting patients in for appointments.	7
Family involvement	Family education rather than individual [education] appears to be most effective, especially when language is a barrier.	7

their own pace'. Half of this group reported that they usually provide very short education sessions of 1–5 minutes.

The respondents were asked about the HF education interventions and resources they used with Māori patients (Table 3). One-fifth of the respondents did not use culturally specific education resources or interventions. The most frequently reported comment categories for interventions used were Māori-centred services and resources, along with involving whānau (family) in education. Ensuring the information was accessible and visual, along with personal interaction, were other aspects of educational practice mentioned by respondents. Suggestions for improving access and use of HF information by ethnicity included (Table 4):

1. making information more accessible for people who do not have English as their first language
2. culturally positioned education material and services, and
3. professional education on HF and cultural needs.

Discussion

Nurses can make a substantial contribution to HF education in PHC. One-third of the respondents reported usually spending from 16 minutes to an hour on education activities, longer periods than available through general practitioner 10-minute consultations.¹⁸ While the length of time providing education cannot be assumed as equating with effective educa-

tion, time is needed to develop trust and build on pre-existing knowledge and experiences.³³ Although the majority of respondents provided only short educational sessions, HF education should be eligible for educational support under the Care Plus programme if patients have other chronic conditions.

The commonly covered topics—medication, signs and symptoms, general education, diet, activity and risk factors—fits with HF guideline recommendations about critical education.^{1,34} Psychological factors and prognosis were least frequently addressed, in keeping with findings of a survey of New Zealand medical ward nurses.²⁵ The National Heart Foundation of New Zealand resource for patients, *Staying Well with Heart Failure*,³² recommends that people talk about their concerns about the future and ‘ask the doctor or nurse what to expect’ (p.8). Advance care planning is an important aspect of chronic illness support as HF mortality is significant—9% a year in an English study³⁵—and there is evidence that patients want more information about their prognosis.³⁶ Our findings suggest a gap in health professional support in this area and, with limited doctor consultation time, nurses are well positioned to listen to and support people with HF and their families. New Zealand resources are also available to guide advance care planning conversations with patients at www.healthnavigator.org.nz and www.advancecareplanning.org.nz.

The majority of respondents said they would find more education on HF and nurse practitioner support useful. Research on implementing the Care Plus programme also found that nurses needed adequate education and support to develop appropriate content and material resources, along with adequate time for the consultation.¹⁹ Similarly, New Zealand evaluations of other strategies to improve self-management in chronic illness, such as the Flinders ProgramTM, have found inadequate support and consultation time are barriers to service integration.^{37,38} Improving patients’ access to education in PHC services could involve HF clinical nurse specialists and nurse practitioners supporting education of PHC nurses,³⁹ sharing information about resources available and the development of culturally specific HF resources. The Heart Foundation of New Zealand has also

recently developed an e-learning course for health professionals called *Support People to Stay Well with Heart Failure*, which is based on the *Staying Well with Heart Failure* patient resource and is available through the New Zealand Ministry of Health site LearnOnline.Health.nz. The course has a section teaching the learner about supporting patient self-management and highlights strategies that can be used to ensure patient understanding.

Many of the nurses identified using the *Staying Well with Heart Failure* booklet,³² which covers essential information required to support self-management. The HF action plan is an important component of the booklet and requires the insertion of specific information by the health provider on the action to be taken in response to changes in symptoms. However, one-quarter of nurses in this study did not use printed material to support their education, although patients report they appreciate and use this information.⁴⁰ Online resources were not used extensively, although these are easily accessible on comprehensive sites such as Health Navigator NZ (www.healthnavigator.org.nz), which collates useful health information on long-term conditions. A 2012 study showed that 60% of New Zealanders aged 65–74 years old were recent internet users,⁴¹ indicating that older patients may wish to engage with online resources.

Whānau involvement in educational activities was promoted by some respondents and is supported by a National Health Committee report suggesting that whānau involvement in all aspects of chronic illness can ‘improve health outcomes, increase access to health care, and reduce health inequalities’ (p.71).⁴² Whānau/family have an important role in supporting people with appropriate nutrition, developing medication-taking systems, monitoring HF symptoms and seeking help if required in a timely manner.⁴³ The importance of meeting health literacy needs with culturally specific and accessible HF resources was also promoted by some PHC respondents. A substantial group of survey respondents did not support culturally specific education activities and resources for Māori, failing to acknowledge that all services need to be accessible and culturally appropriate as affirmed by government

policy⁴⁴ and the Nursing Council of New Zealand Code of Conduct.⁴⁵

There were significant differences between respondents employed by Māori providers as compared to respondents working in general practices in the proportion with postgraduate qualifications, the perceived value of nurse practitioner support, and an association with longer education sessions. Māori health providers are owned and governed by Māori and have a distinctive approach to service delivery to mainly, but not exclusively, Māori clients.⁴⁶ The findings of this survey are limited for Māori providers, as there were a small number of respondents working in this setting and the survey questions did not explore the organisational context. There is a need for further in-depth research on the organisation of care by nurses working for Māori providers, along with the multidisciplinary and educational resources supporting patient care in these services.

There are limitations to this study. The HF questionnaire was embedded in a larger questionnaire on online health information use, which could result in respondent bias, with non-internet users being less likely to engage with the survey. Educational activities, such as the time spent providing education, were estimated and self-reported. In addition, the time providing education at any one time may have been limited, but the study did not identify how many sessions the nurse had with each patient. Ongoing education about HF is necessary^{11,13,14} and nurses in PHC have many opportunities to support ongoing self-management and lifestyle changes. In addition, this survey did not ask respondents about how they evaluated the quality of education and the effect on patients' self-management skills and self-efficacy. This would be an interesting area for future research.

People with HF are cared for by secondary care clinicians as well as primary care general practitioners, nurses and pharmacists. Current health directives advocate for better integration of primary and secondary care to improve health.⁴⁷ Ensuring a consistent approach to education, along with tracking the information and educational resources provided, are critical factors in addressing

knowledge gaps in a timely manner. The National Shared Care Planning Programme is working on developing a shared goal-orientated care record,⁴⁸ providing the opportunity to systematically plan and allocate ongoing aspects of health education to the appropriate team member. Education about HF is one component of developing the knowledge and skills for effective self-management, along with support for engaging in the considerable life changes required. This study affirms the growing role PHC nurses play in chronic illness education, along with the need for investment in ongoing HF nursing education and specialist nursing support.

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COMPETING INTERESTS

None declared.