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Bonney, Andrew; Magee, Christopher; and Pearson, Russell W., "Cross-sectional survey of older patients' views regarding multidisciplinary care for chronic conditions in general practice" (2012). *Faculty of Science, Medicine and Health - Papers: part A*. 1191.

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Cross-sectional survey of older patients' views regarding multidisciplinary care for chronic conditions in general practice

Abstract

The ageing population and increasing prevalence of chronic illness have contributed to the need for significant primary care reform, including increased use of multidisciplinary care and task substitution. This cross-sectional study explores conditions under which older patients would accept having health professionals other than their general practitioner (GP) involved in their care for chronic disease management (CDM). Ten practices were randomly sampled from a contiguous major city and inner regional area. Questionnaires were distributed to consecutive patients aged 60 years and over in each practice. Agency theory was used to inform analyses. Statistical analysis was undertaken using Wald's test, growth modelling and linear regression, controlling for the clustered design. The response rate was 53% (n = 272). Most respondents (79%) had at least one chronic health condition. Respondents were more comfortable with GP than with practice nurse management in the CDM scenario (Wald's test = 105.49, P < 0.001). Comfort with practice nurse CDM was positively associated with increased contact with their GP at the time of the visit ($\beta = 0.41$, P < 0.001), negatively associated with the number of the respondent's chronic conditions ($\beta = -0.13$, P = 0.030) and not associated with the frequency of other health professional visits. Agency theory suggests that patients employ continuity of care to optimise factors important in CDM: information symmetry and goal alignment. Our findings are consistent with the theory and lend support to ensuring that interpersonal continuity of care is not lost in health care reform. Further research exploring patients' acceptance of differing systems of care is required.

Keywords

agency theory, practice nurse, team care

Disciplines

Medicine and Health Sciences | Social and Behavioral Sciences

Publication Details

Bonney, A., Magee, C. & Pearson, R. (2014). Cross-sectional survey of older patients' views regarding multidisciplinary care for chronic conditions in general practice. *Australian Journal of Primary Health: the issues influencing community health services and primary health care*, 20 (1), 27-33.

Cross-sectional survey of older patients' views regarding multi-disciplinary care for chronic conditions in general practice

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Abstract

Introduction

The ageing population and increasing prevalence of chronic illness has contributed to the need for significant primary care reform, including increased use of multidisciplinary care and task substitution. This cross-sectional study aims to address the paucity of Australian data concerning older patients' preferences in order to inform the development of patient-centred models of multidisciplinary care.

Methods

Ten practices were randomly sampled from a combined RA1/ RA2 region. Questionnaires were distributed to consecutive patients aged 60 years and over each practice. Agency theory was used to inform analyses. Hypothesis testing was undertaken using Wald's test, growth modelling and linear regression, controlling for the clustered design.

Results

The response rate was 53% (=272). Most respondents (79%) had at least one chronic health condition. Respondents were more comfortable with general practitioner (GP) than with practice nurse (PN) management in the chronic disease management (CDM) scenario (Wald's test = 105.49, $p < .001$). Comfort with PN CDM increased with increased contact with their GP at the time of the visit ($\beta = .41$, $p < .001$); was negatively associated with the number of the respondent's chronic conditions ($\beta = -.13$, $p = .030$); and was not associated with frequency of previous visits to non-medical health professionals.

Discussion

Agency theory suggests that patients employ continuity of care to optimise factors important in CDM: information symmetry and goal alignment. Our findings are consistent with theory and lend support to ensuring that interpersonal continuity of care is not lost in health care

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reform. Further research, with clinical trials of differing systems of care is required.

Additional key words

Agency theory; team care; practice nurse

Summary statement

What is known about the topic?

- Despite high satisfaction with nurse-led primary health care, the specific nature of the care delivered has been shown to influence patient preference for health care provider.

What does this paper add?

- A model of care incorporating ‘shared-continuity’ between general practitioners and practice nurses appears to improve older patients’ acceptance of nurse led chronic disease management.

Introduction

The ageing population and associated increase in the burden of chronic illness is well recognised (AIHW, 2008). This demographic shift is reflected in the caseloads in Australian general practice (GP) where currently over 40% of all consultations address chronic problems (Britt et al., 2009). In addition, the frequency of GP services use by individuals is changing, as older patients have significantly increased utilisation of GP services (Harrison and Britt, 2011). Hence, it is estimated that by 2020 the ageing population may increase the required number of GPs by up to 45% above that required by population increase alone (Harrison and Britt, 2011). Understandably, there is significant health policy interest in structural reform to enable our health system to best meet the needs of this ageing population and the increasing prevalence of chronic disease (NHHRC, 2009). In primary care, in addition to expanding the medical workforce (Harrison and Britt, 2011), enhancing the roles of nursing and other health professionals (HPs) in patient management is a logical development (Douglas et al., 2009). However, it would be desirable for any solution to incorporate mechanisms for increased productivity (Scott, 2009). Therefore, it is important to investigate models of task substitution or delegation within primary care teams (Laurant et al., 2004). With some recent exceptions, there has been little Australian research into patients' attitudes towards enhanced non-medical HP roles in primary care (Eley et al., 2012). As older patients and patients with chronic conditions particularly value personal continuity with a single medical practitioner (Nutting et al., 2003), research into how to reconcile these preferences with the changing health care environment is vital. This paper describes a cross-sectional study aimed to provide evidence to inform evolving models of care in Australia for chronic disease management (CDM) for older populations. This approach was informed by agency theory, which deals with the so called 'agency problem' which exists when one person (a principal) engages another (an

agent) to act on their behalf (Eisenhardt, 1989), such as in a patient-HP relationship. In agency relationships it is held that risks arise when principals and agents have incomplete information concerning each other or have divergent goals (Shapiro, 2005). Interpersonal continuity of care in health care agency relationships has been conceptualised as a means by which patients (principals) can optimise shared knowledge and develop shared goals with their HPs (agents) (Donaldson, 2001). As the GP provides long term interpersonal continuity of care for the majority of older patients (Bonney et al., 2012), it was hypothesised that the patient's GP would be their preferred single agent for CDM. Three further hypotheses were tested: (1) attitudes to an alternative agent for CDM, the practice nurse (PN), would be improved by enhancing interpersonal continuity with their usual GP in association with that care; (2) increased complexity in management would result in reduced acceptance of an alternative agent; and (3) increased familiarity with alternative agents would result in improved acceptance.

Methods

Materials

The authors used an existing instrument, designed for use in older populations, as a template (Bonney et al., 2012). The adapted instrument was piloted in one practice, and following analysis of responses, had four redundant items removed and was reformatted to improve readability. The final instrument contained nine categorical items regarding demographics; presence, type and number of chronic conditions; and GP, nursing and allied health provider utilisation. It included a self-rated health item and 23 items regarding attitudes to CDM by doctors and other HPs. Participants were asked to indicate how comfortable they would feel having a chronic or complex health problem managed in the five following scenarios: (1) by a

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nurse at the medical practice (nurse alone); (2) a nurse at the medical practice with a phone call to the GP to double-check management (nurse + phone call); (3) a nurse at the medical practice who called in the regular GP to double-check management (nurse + double check); (4) a nurse and the GP together (nurse + GP); and, (5) the regular GP alone (GP alone). Each of the attitudinal items in the instrument employed a hybrid visual analogue/5-point Likert response format for assessment.

Recruitment

In June 2011, a randomised stratified sample of 10 general practices within the planned boundaries of a Medicare Local were recruited, such that there was proportional sampling of RA1 and RA2 designated practices. Personnel in each practice were instructed to distribute questionnaires to forty consecutive patients aged 60 and over for completion in the waiting room. Questionnaires left blank by respondents were redistributed in a second wave in each practice. The number of patients to whom instruments were distributed was recorded.

Analyses

All analyses were performed using *Mplus* version 6.11 (Muthén and Muthén, 1998-2010) and adjusted for the effects of the clustered data (i.e., practices). Growth modelling investigated patient comfort in the CDM scenario in which there was incremental increases in interpersonal continuity with the patient's regular GP. Linear regression examined patient comfort with nurse CDM when the patients' usual GP was called in to 'double-check' management, a model we have termed 'shared continuity'. This scenario was chosen as being a practicable implementation of CDM with an 'alternative agent' within Australian general practice. The patients' level of comfort with this scenario was selected as the dependent

variable, with the patient's age, gender, number of chronic illnesses (a proxy for complexity), length of time seeing their usual GP and frequency of visits to other HPs as the independent variables. Statistical significance was set at $p < 0.05$.

Results

Descriptive Statistics

Seven RA1 practices (from 11 invited) and three RA2 practices (from six invited) agreed to participate. Instruments were distributed to an estimated 511 patients. Of the 354 surveys attempted, 272 were satisfactorily completed (i.e. age identified and at least 50% of attitude items completed) and included in the analyses, giving an effective response rate of 53.2%. The final sample thus included 272 respondents aged 60 – 98 years (Median 69.0, $M = 70.6$, $SD = 8.0$) of whom 61.7% ($n=166$) were female. The majority of the respondents indicated that they had a chronic health condition (79.3%). Further description of the sample is outlined in Table 1.

Insert Table 1.

The most commonly reported chronic health problems were 'blood pressure' (51.5%), 'arthritis' (39.3%), 'diabetes' (22.4%) and 'heart disease' (21.0%). Two-thirds (65.1%) of respondents had seen a non-medical HP for assistance in the management of a chronic health problem. Furthermore, 23.9% of respondents had consulted a nurse and 19.5% a physiotherapist for a chronic health problem. Table 2 displays the prevalence of patients' self-reported chronic health problems, Table 3 the types of HPs seen, frequencies and locations.

Insert Tables 2 and 3.

Attitudes to multi-disciplinary team members

Nearly three-quarters of respondents were happy to see a non-medical HP for assistance 'if

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things were not going well and I needed extra help' (agree 21.7%; strongly agree 50.2%).

Most respondents were happy to see a PN at their medical practice for clinical tasks including measurements such as blood pressure and sugar level (agree 25.2%; strongly agree 56.0%), education and advice (agree 24.0%; strongly agree 44.9%) and care co-ordination (agree 27.6%; strongly agree 50.7%). Nearly all respondents wanted to see their GP if their condition deteriorated (agree 9.8%; strongly agree 82.7%). Table 4 presents all of the responses to the attitude items.

Insert Table 4.

Hypothesis testing

For the management of a long-term or complex health problem, participants in this study indicated that they were more comfortable seeing their GP ($M = 4.46$, $SD = 0.95$) compared with a nurse alone ($M = 2.68$, $SD = 1.47$, Wald's test = 105.49, $p < .001$). The growth model indicated that patient comfort increased linearly across the five different scenarios ($\beta = .41$, $p < .001$). The means and standard deviations for each of the five scenarios are presented in Table 5.

Insert Table 5.

Patient comfort with the 'nurse CDM/GP called in to double-check' scenario decreased as the number of chronic health conditions increased ($\beta = -.13$, $p = .030$). Patient comfort was lower for those who had seen their GP for 1 – 4 years ($\beta = -.63$, $p = .002$) compared with < 1 year. Patients who were aged 80 years and over had higher levels of comfort with this scenario compared to those age under 70 years ($\beta = .55$, $p = .001$). Patient gender and frequency of visits to other HPs were not associated with patient comfort.

Discussion

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Overview of findings

The primary hypothesis that older patients would prefer their GP to their PN as a single agent for CDM was supported in this study. Two of the secondary hypotheses were also supported: there was increased comfort with PN-CDM with incremental increases in interpersonal continuity of care with their GP; and there was a reduction in comfort with increasing care complexity. Increased exposure to other HPs was not associated with attitudes to the PN-CDM scenario in our analyses. The results suggested that participants viewed both PNs' and other HPs' input to be valued supplements to their CDM, but not a substitute for their GP. The findings also suggested that the participants viewed their relationships with GPs, PNs and other HPs to be different from each other.

Comparison with the literature

The value older patients and those with chronic illness place on interpersonal continuity of care with a GP has been well documented, including the increased value placed on interpersonal continuity with an increasing number of chronic conditions (Nutting et al., 2003). It is also well documented that patients report high satisfaction with nurse-led primary health care (Laurant et al., 2008, Eley et al., 2012, Laurant et al., 2004); including a systematic review concluding there was higher satisfaction with nursing care compared with medical care (Laurant et al., 2004). However, the specific nature of the care delivered has also previously been shown to influence patient preference, rather than satisfaction. For example, one study demonstrated that most patients express a preference for their GP for medical aspects of care, whereas preference for GP and nurse practitioner care is comparable for educational and routine aspects of care (Laurant et al., 2008). The present study adds to these findings in the literature in a number of respects. It provides preliminary quantitative data

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concerning patients' attitudes to enhanced non-medical roles in CDM in primary care in Australia. The use of agency theory facilitated hypothesis testing in a theoretical framework which has been extensively used in the economics (Shapiro, 2005), health economics (Schneider and Mathios, 2006, Sekwat, 2000) and social sciences literature (Eisenhardt, 1989), and demonstrates utility in health care research (Donaldson, 2001). Importantly, the study suggests some conditions under which older patients' preferences for CDM may be met whilst providing improved efficiencies of care.

Implications for practice

The findings indicate older patients support important features of health care reform in general practice, including co-location of HPs in general practices, multi-disciplinary CDM teams and advanced roles for PNs (NHHRC, 2009). At the same time, the results again demonstrate the importance to older patients of interpersonal continuity of care with their GPs (Nutting et al., 2003). As interpersonal continuity is also associated with better outcomes for older patients (Ionescu-Ittu et al., 2007, Worrall and Knight, 2011), the findings of this study lend support to ensuring that this continuity is not lost in the midst of health care reform (Bonney and Farmer, 2010). The medical aspects of CDM, such as prescribing, investigation and referral, are outside of the scope of practice of PNs at the moment. Older patients' comfort with PN-CDM appears significantly improved with a model of 'shared continuity' with their GP. Thus, this model also provides a mechanism for the medical aspects of CDM to be undertaken efficiently in conjunction with those aspects of PN-CDM that receive high patient acceptance and satisfaction (Eley et al., 2012). There is also indication that a 'shared continuity' model may not suit every patient, with increasing complexity of care being associated with reduced patient comfort with this scenario. Thus, for patients with complex

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care needs, more intensive interaction with their GP may both be clinically desirable and have greater acceptance by patients.

Limitations and future research

The findings of this study should be interpreted in light of its limitations. The modest sample size, effective response rate of 53% and inability to track non-responders may all potentially reduce the generalisability of the results. Responder bias should also be considered, as patients with poor health literacy may have had more difficulty completing the questionnaires. Hence, reproduction of these results would be desirable. It is also acknowledged that the wording ‘...GP to double-check on management’ does not accurately reflect the professional interaction between the PN and GP. As with any cross-sectional research, the study can only demonstrate associations. It is strongly recommended that controlled clinical trials are undertaken testing models of ‘shared continuity’ in CDM.

Conclusion

Continuity of care matters (Guthrie et al., 2008), particularly for older patients and those with chronic conditions (Nutting et al., 2003), as confirmed in this study. However, the rapidly changing demographics of our population mandate evolution in the way in which primary care is structured. The findings of this study lend support to further investigation of models of ‘shared continuity’ for CDM, and provide encouragement that it is feasible to undertake health care reform and preserve interpersonal continuity as a central tenet of primary care (Bonney and Farmer, 2010).

Acknowledgements

This study was supported by funding from the University of Wollongong. Our thanks to Ms Brigid Condon for research assistance and the practices involved

Conflicts of interest

No conflicts of interest exist that could inappropriately influence the authors' work in this paper

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Table 1 Sample description (n = 272)

Percentages of valid responses displayed

	N	%
Sex		
Males	103	38.3
Females	166	61.7
Age categories		
60 – 69 years	148	54.4
70 – 79 years	75	27.6
≥ 80 years	49	18
Chronic health conditions		
None	59	21.7
One	56	20.6
Two	78	28.7
Three or more	79	29.0
Length of time attended practice		
< 5 years	105	38.6
5 – 10 years	53	19.5
> 10 years	114	41.9
Length of time attended current GP		
< 5 years	120	45.6
5 -10 years	46	17.5
> 10 years	97	36.9

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Table 2 Chronic conditions

Percentages displayed of total sample

Condition	N	%
Blood pressure	140	51.5
Heart disease	57	21.0
Diabetes	61	22.4
Arthritis	107	39.3
Lung disease	20	7.4
Kidney disease	10	3.7
Depression	38	14.0
Other	50	23.5

Table 3 Consultations with non-medical health professionals

Percentages expressed as proportion of total sample

	N	%
Frequency of seeing non-medical health professionals		
Once or twice	49	18.0
Three or more times	65	23.9
On a regular basis	63	23.2
Health professional consulted		
Nurse	65	23.9
Diabetes/asthma educator	45	16.5
Dietician	48	17.6
Physiotherapist	53	19.5
Psychologist	14	5.1
Exercise physiologist	19	7.0
Other	51	18.8
Where health professional was consulted		
At patient's medical practice	78	28.7
At health professional's premises	95	34.9
Community Health Service	10	3.7
Hospital Outpatient Clinic	27	9.9
Other	22	8.1

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Table 4 Participants' responses

Percentages of valid responses displayed

Response	1	2	3	4	5
How would you rate your health overall, from very poor to very good, on a scale of 1 to 5?	2	26	94	99	49
	0.7%	9.6%	34.8%	36.7%	18.1%
On a scale of 1 to 5, from '1' indicating you strongly disagree to '5' meaning you strongly agree...					
In managing a long-term or complex health problem, I would be happy to see other health professionals e.g. dieticians, nurses or psychologists, for education and advice...					
When first diagnosed, but not on a regular basis	26	24	86	60	66
	9.9%	9.2%	32.8%	22.9%	25.2%
On a regular basis (e.g. every 3 to 6 months) if things were going well	19	21	76	67	80
	7.2%	8.0%	28.9%	25.5%	30.4%
If things were not going well and I needed extra help	22	18	34	57	132
	8.4%	6.8%	12.9%	21.7%	50.2%
If they were located in the medical practice I attend	14	12	42	63	127
	5.4%	4.7%	16.3%	24.4%	49.2%
If I had to travel to different locations to see them	53	65	68	39	39
	20.1%	24.6%	25.8%	14.8%	14.8%
If it meant not seeing my regular GP as often	66	61	65	38	32
	25.2%	23.3%	24.8%	14.5%	12.2%
In managing a long-term or complex health problem, if there was deterioration in my condition I would want to see...					
A nurse at my medical practice for help	57	55	53	25	50
	23.8%	22.9%	22.1%	10.4%	20.8%
My regular GP for help	5	2	12	25	211
	2.0%	0.8%	4.7%	9.8%	82.7%
A specialist for help	3	2	14	38	204
	1.1%	0.8%	5.4%	14.6%	78.2%
In managing a long-term or complex health problem, I would be happy to see a nurse at the medical practice I attend...					
For measurements like blood pressure, weight or sugar level	10	7	33	67	149
	3.8%	2.6%	12.4%	25.2%	56.0%

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For education and advice	13	13	56	63	118
	4.9%	4.9%	21.3%	24.0%	44.9%
To help co-ordinate the various tests, checks and appointments I might need	9	11	38	74	136
	3.4%	4.1%	14.2%	27.6%	50.7%
Before seeing my regular GP	30	31	55	61	85
	11.5%	11.8%	21.0%	23.3%	32.4%
Instead of seeing my regular GP	122	59	41	17	25
	46.2%	22.3%	15.5%	6.4%	9.5%
In managing a long-term or complex health problem...					
It would be important to me to have a regular GP who knew me and my medical history well	1	3	4	16	243
	0.4%	1.1%	1.5%	6.0%	91.0%
It would be important to me to have a 'home base' at a medical practice where people knew me well	3	3	12	38	209
	1.1%	1.1%	4.5%	14.3%	78.9%
My relationship with health professionals would be different from my relationship with my regular GP	16	23	79	71	76
	6.0%	8.7%	29.8%	26.8%	28.7%
My relationship with other health professionals would be different from my relationship with a nurse at my regular medical practice	14	27	81	71	73
	5.3%	10.2%	30.5%	26.7%	27.4%
On a scale of 1 to 5, from '1' indicating not at all comfortable to '5' meaning very comfortable...					
How comfortable would you feel having a long-term or complex health problem, for example diabetes or a heart problem, managed in the following situations?					
A nurse at my medical practice alone	79	57	52	29	50
	29.6%	21.3%	19.5%	10.9%	18.7%
A nurse at my medical practice with a phone call to my regular GP to double-check management	39	44	62	55	67
	14.6%	16.5%	23.2%	20.6%	25.1%
A nurse at my medical practice who called in my regular GP to double-check management	28	28	56	58	96
	10.5%	10.5%	21.1%	21.8%	36.1%
A nurse at my medical practice and my regular GP together	11	11	32	45	168
	4.1%	4.1%	12.0%	16.9%	62.9%
My regular GP alone	7	5	31	39	187
	2.6%	1.9%	11.5%	14.5%	69.5%

Table 5 Mean patient comfort levels across the five chronic disease management scenarios

Scenario	Mean	SD
Nurse alone	2.68	2.15
Nurse + phone call	3.25	1.9
Nurse + double check with GP	3.62	1.8
Nurse + GP	4.31	1.19
GP alone	4.46	0.9