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REVIEW ARTICLE

DOES INTEGRATED HEALTHCARE SYSTEM REDUCE THE COST OF QUALITY OF CARE FOR OLDER PEOPLE? A SCOPING REVIEW

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ABSTRACT

This study provides a summary of published reviews of academic literature on the cost-effectiveness and quality outcomes of integrated healthcare approaches for the older people of in Australia. the available literature which was published in English between January 2001 and July 2017was were retrieved from the search results in eight highly resourceful journal databases using the specific terms. The majority of the studies reported limited information about the cost intervention and quality of outcomes. The benefits of integrated healthcare included patients' satisfaction, reduction of costs and increasing quality of care. However, the evidence of reduction of cost is varying with the different settings. The home and community-based healthcare for older people has attracted much attention in the past decades in Australia and many researches have been done on it. The majority of the studies focused on defined problems of healthcare service and outcomes but did not incorporate the priorities of cost-effectiveness or quality of care. Practitioners are interested in understanding how the integrated health care approach is achieved and to examine the reduction of cost and quality of outcomes.

KEYWORDS

aged care, cost-effectiveness, game-changer, integrated care, Australia.

INTRODUCTION

Australia, just like many western countries, has an ageing population and it is the key driver to change the Australian demographic features. In 2015, the Australia's population aged between 65-84 and 85 years and above was approximately 13% and 2% respectively. The 65–84 years' cohorts are projected to be approximately 18% (8.9 million) and the 85 years and over to be approximately 5% by 2054–55. [1] The old people group are the main client of health sector for having complex and chronic conditions. The sharp rise of old people is apparently the ''game-changer'' in the healthcare sector of Australia.

Around two-thirds of the people above 75 years have at least five chronic long-term health conditions [2] such as Dementia, Diabetes, Depression, Hypertension and Arthritis. Dementia— self-reported mobility problems increase with age affecting most women over 80. [3 4 5] The expenditure on aged services is likely to almost double for the government of Australia. [6] Therefore, exerts pressure on planning, policy and finances of aged care sector. [7] Approximately a quarter of the total spending is directed towards health, age-related pensions and aged care, and it is likely to be halved by 2049-50.[8] The health expenditure in Australia was estimated to be '$140' billion in the year 2011-2012, compared to $133 billion in the year 2010–11

and $83 billion in the 2001–02. The trends of health spending are relatively even more among hospitals (about $53.5 billion) and primary health care (about $50.6 billion). [9] Four key factors are contributing to fast-rising health care costs in Australia: population growth, ageing, new technologies and treatment, and experiment in health models. [10 11 12 13 14] Integrated healthcare system has consistently been reviewed or implemented in developed countries to address these challenges and reduce the gaps between costs and quality outcomes. [15, 16] This study highlights the benefits of the integrated healthcare which the Australian government may incorporate in the national policy to reduce costs of quality of care for older people.

METHODS

Synthesizing health policy and systems evidence has been recognized as a critical tool to support policy decisions and produce guidance for the health systems following by PRISMA Scoping Review (ScR) guidelines since 2012. A scoping review guided by the preferred reporting items for synthesizing research evidence [17, 18] was undertaken using eight major online databases: Our Scoping Review mainly focuses on the recent (2001-2017) peer-reviewed articles and reports that might produce empirical evidence on the integrated healthcare. Techniques of conducting Scoping Review are selecting sources and keywords, combining the most promising strings of keywords using logical operators, identifying search areas for articles and reports and executing the search process to identify relevant empirical studies through screening based on specific inclusion and exclusion criteria. [19 20 21][1] We used recently published ScR techniques [22 23] in our review that included three steps: (a) exploring for the initial list of studies, (b) topicality of evaluation, and (c) extraction and analysis of data. The search process was executed on 8 journals and reports website presented in Appendix- 1. Finally, we used framework to find the clusters according to the similarity of most used words and phrases. [24] There are numerous studies on non-reviewed publications on the subject, including white papers and reports from different organizations. Although these documents have not been independently evaluated through peer-review processes, we believe that these sources can provide valuable insights.

a) Exploring for the initial list of studies

We used the following keywords to query each database so that search result would issue articles and reports containing the words 'integrated healthcare' along with "costs" and "quality" and costs-effective and quality care, costs and quality outcomes, etc. Eight online databases were searched for articles and reports published from January 2001 to July 2017 to find the initial list of relevant articles and reports. The search query returned a total of 109910 articles and reports on integrated healthcare for older people and finally returned 3246.

b) Topicality of evaluation

In the second step, we select relevant articles and reports from the initial list and excluded the irrelevant articles and reports by reading the papers' titles, keywords, abstracts and full text. Reports and articles that were excluded from the lists to follows the exclusion criteria (figure 1).

c) Extraction and analysis of data

In the extraction stage reviewers considered key details to further identify articles and reports based on inclusion and exclusion strategy for identifying topical studies, [23 24] including deleting similar papers, publication year, geographical area, types of communication, outcome measures, and results. As a result, 25 articles and reports were selected for further analysis. Figure 1 below shows the results of search and selection of studies with exclusion steps.

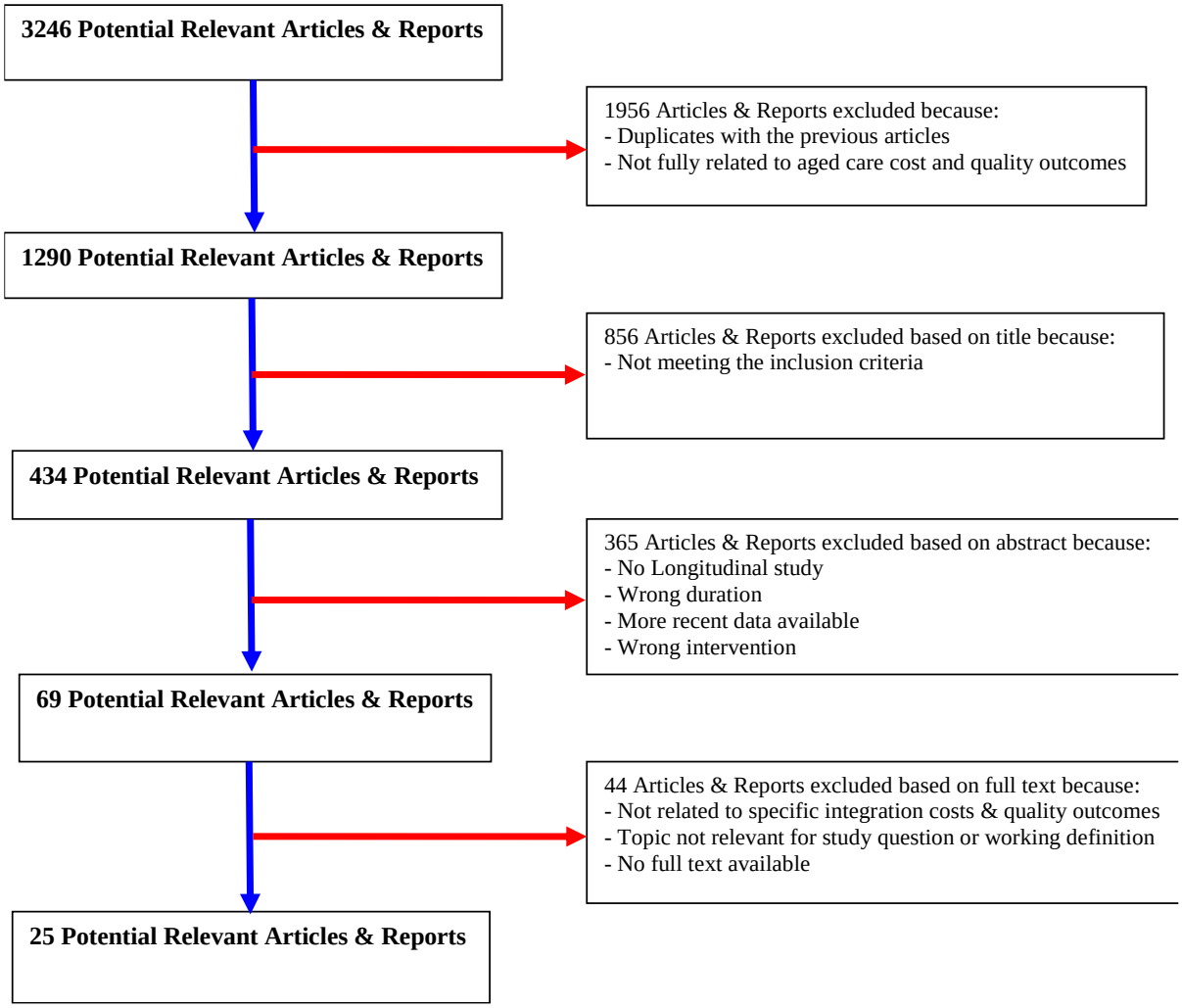
ETHICAL APPROVAL:

Ethical approval is required for conduct of research on human subjects and our research work is limited only on published materials in the public domain and for these reasons we have ignored the necessity of ethical approval.

RESULTS

We have searched a total of 3246 references across the eight databases, and after careful consideration of duplications, 21 articles and 4 reports were identified as eligible for inclusion. During the review of the full-text articles, we have selected twelve systematic reviews, [25-36] four systematic and meta-analyses [37-40] and a review of the literature resulted in 3 additional sources [41-43] for further assessment. One review presented an update about economic outcomes [44] and we have included the earlier review only.

FIGURE-1: RESULT OF SEARCH AND SELECTION OF STUDIES



DISCUSSION

In the current report we have explored into a very recent academic literature forcusing on integrated care for aged people and followed very specific key words on integrated healthcare and quality outcomes. The first limitation of our study is that it includes the reviews only and we assessed the cost-effectiveness, quality outcomes and service delivery on the basis of original studies in individual reviews. Although, the existing systematic reviews and meta-analysis imply that, most of our reviewed articles and reports were the original studies. We have discussed above how reviews tended to report qualitatively on selected measures such as cost-effectiveness, quality outcomes and service delivery. Final limitation is that the majority of the studies focused on the defined problems of healthcare service and outcomes but did not incorporate the priorities of cost-effectiveness or quality of care accurately. There are wide range of definitions and interpretations of the concept of integrated healthcare system and delivery services: wide range of very varied interventions and care approaches (for instance, case management). Integrated care is an interdisciplinary healthcare approach that addressed the needs of patients. The World Health Organization defines integrated healthcare as 'the organization and management of health services' in order that people get the care they have, once they would like it, when they need it, in ways that are user-friendly, attain the specified results and provide value for money. [44] Integration means improving the outcomes through coordination of services along with continuum of care. The healthcare services for older people of Australia is complex, it involves many funders and healthcare providers. Age-related chronic conditions have an impact on the

expenditure, healthcare services, and pharmaceuticals. The total health expenditure has increased to approximately 5.4% per year over the last decade, while GDP has been increasing at a slower rate of 3.1% per year. (Table 1 & 2).

From the table one we have observed that service delivery efficiency and effectiveness increases with coordinated primary care, especially for aged care at community setting. It also increases with the: advanced care planning, pain management and palliative care services. These combined increase client satisfactionand reduce emergency department visits and hospital stays. [44 45]

The summarized data indicate that waiting time and days of staying at hospital drastically declined in integrated care at both community and hospital settings. These findings suggested that integrated care delivery reduces the cost of care and increases the quality of outcomes. [26 27 31 46 47 48] For instance, table two data show that integrated care reduces the emergency department visits by 20.8%, hospital admissions by 27.9% and housing staying days by (home care services) 19.2%. However, these results depend on the level of integration and service delivery. [49 50] The level of integration can be influenced by personal-centered approach, understanding the need of the community, degree of integration, leadership and level of collaboration within the key stakeholders, and effective exchange and utilization of information. [47 48 49] Strongly coordinated care can save between 5-10% of the costs. The cost of benefits and quality of care depends on relationships between hospital management body and GPs. [48 49] In table two the cost effectiveness section shows that integrated primary care in the appropriate setting can meet up to 90-95% of the health needs, produce better health outcomes and improved cost-effectiveness following the triple aim: better health outcomes, better care, and lower costs. [49 50] Functional integration is more significant than merely structural or financial integration. The majority of studies related to integrated service showed that there were positive effects on quality of care, however, measuring the performance of the health system, cost and quality of outcomes of the system accurately is very difficult. [36] Various studies and evidences have shown that integrated health care contributes to a cost-efficient and quality health system through streamlined care for patients, efficient use of resources, a better cover of patients and improved patient safety.[50]

Evidence have shown that integration of service delivery and minimizing the gap of aged care are crucial in controlling the high expenditure of aged care services. Reviews reveal that fragmented healthcare is struggling with rising costs and poor-quality outcomes while integrated healthcare might be affordable and accessible for older people through reduction in costs of care. [25 33 34] Our review also shows that integrated healthcare is more cost-effective than the current fragmented system across different settings. Integrated patient-centered healthcare saves the state 'Medicare' costs, Pharmacy costs, and general costs. [16] Our reviews have found 4 out of 5 articles reported that integrated care is associated with low cost of care and quality outcomes at different settings. [46 47 48 49] Integration is challenging, but it extends benefits to patients, caregivers and healthcare providers. Most of the reviewed literature shows that the quality of care is increased with integration of care. The integrated consumer-directed coordinated healthcare and preventive services increase the quality of care at appropriate settings.

CONCLUSIONS

There may also be a need to rethink our understanding of what integrated care is and it is important to reach a consensus about cost-effectiveness and support financial sustainability for long-lasting change in the way the service delivery in the health and social-care sectors are conducted. The Review findings suggest that integrated healthcare for older people still requires much attention from top-levels to understand how the integrated healthcare approach is achieved and to examine the reduction of cost and quality of outcomes.

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APPENDIX

TABLE-1 KEY FEATURES OF INTEGRATED CARE APPROACHES (DEFINITION, SERVICE DELIVERY, COST AND QUALITY OUTCOME)

Author's	Title	Study design	Targeted populations	Definition of integrated care	Outcome measures	
					Functional status and outcomes	Efficacy and client satisfaction
David T (2017) [1]	Legislated review of aged care 2017	Data gathered from wide range of stakeholders, including consumers and providers.	Frequent service providers and consumers.	No explicit definition, interventions data were collected from primary source and workshop.	(i) Support the primary care system to increase the efficiency and effectiveness of medical services. (ii) to improve coordination of care. (iii) linkages between aged and hospital care.	Access to effective end-of-life care, including advanced care planning, pain management, palliative care and family support.
Esterman AJ, Ben-Tovim DI (2002) [44]	The Australian coordinated care trials: success or failure?	Data gathered from wide range of stakeholders and consumers	Service providers and consumers	(i) Whole population approach: delivery of primary health-care services following by coordination within the community; (ii) care coordination for people with chronic and complex needs; (iii) information management and technology; and (iv) the creation of robust mechanisms to resolve conflicts.	(i) Aged people felt supported and less anxious and GPs were very satisfied; (ii) Less number of clients' referrals to community health services.	Clients' satisfaction was high and as a result, fewer emergency department visits and shorter hospital stays.
Hébert R et,al. (2010) [45]	Impact of PRISMA, a coordination-type integrated service delivery system for frail older people in Quebec (Canada): A quasi-experimental study.	Data were gathered randomly using questionnaires	Service recipients (75 years or older)	(i) Coordination between decision-makers and managers; (ii) single entry point to care; (iii) focus on clients' functional autonomy.	|(i) Increased client satisfaction and empowerment; (ii) fewer unmet needs; (iii) better system performance at no additional cost.	health services utilization, a lower number of visits to emergency rooms and hospitalizations than expected was observed in the experimental cohort
Nick G et al. (2014) [46]	Providing integrated care for older people with complex needs Lessons from seven international case studies	Data were synthesises from seven case study programmes.	Seven countries– Australia, Canada, the Netherlands, New Zealand, Sweden, the United Kingdom and the United States.	(i) Integration means vertical integration (ii) people in the community with complex needs targeted; (iii) multidisciplinary teams comprising care coordinators.	(i) Expected Increasing of staff motivation and positive evaluations GPs (ii) Less waiting times before receiving long-term care support; (iii) better system performance at no additional cost.	(i) fewer emergency admissions; (ii) fewer bed days and shorter hospital stays; (iii) fewer residential home placements.
Althaus et al. (2011) [26]	Reducing Frequent Visits to the Emergency Department: A Systematic Review of Interventions	Systematic review (controlled trials, and without control)	Frequent hospital ED users	No specific definition. Most interventions reviewed included case management; focus on coordination of multi-disciplinary care by case manager.	Attenuate substance and drug use and significantly decreasing social problems	The impact of all three frequent-user interventions was modest. Case management had the most rigorous evidence based.
Ellen N & Emma P (2014) [47]	What is the evidence on the economic impacts of integrated care?	Review of published academic literature on the economic impacts of coordinated services approaches. .	Around 963 references, focus to three economic outcomes: service utilization, cost-effectiveness and quality outcomes.	The case management was most common concept. Coordination of primary care and community services enhance the social care services.	Economic outcomes focused on: (i) utilization of hospital services through (re)admission rates, (ii) length of stay and (iii) rate of visits of emergency department.	Very difficult to draw firm conclusions because results tended to be mixed.

Author's	Title	Study design	Targeted populations	Definition of integrated care	Outcome measures	
					Functional status and outccomes	Efficacy and client satisfaction
De Bruin et al. (2011) [31]	Impact of disease management programs on healthcare expenditures for patients with diabetes, depression, heart failure or chronic obstructive pulmonary disease: a systematic review of the literature.	Systematic Pubmed search	Impact of disease management focus on healthcare expenditures and chronic care model.	Interventions focus on self management support delivery system, decision support, clinical information system, health-care system, community resources and policies.	Disease management programs for patients with diabetes, depression,, heart failure, and COPD. Studies focus on cost-saving with quality outcomes.	Study shows that cost reduce with quality outcomes.
Ouwens et al. (2005) [48]	Integrated care program for chronically ill patients: a review of systematic reviews	Systematic literature review	Medline and Cochrane databases using medical subject headings and free text searches following very specific terms.	No explicit definitions: integrated care program for self management, clinical follow up and case management.	Integrated care delivery seemed to have definitive effects on the quality of services. .	Cost interventions shows positive trend and clients were satisfied with quality services.
Gilbody et al. (2006)[27]	Costs and consequences of enhanced primary care for depression: systematic review of randomized economic evaluations.	randomized controlled trials	11 full economic evaluations (4757 patients).	Enhanced primary care focus to organizational interventions. Majority of studies set in the US involved collaborative care models linking primary and specialist care..	Significant improvement in SCL scores although not always sustained.	In conclusive evidence on HRQoL

TABLE-2 PROVIDES AN OVERVIEW OF THE THEMES BASED KEY FEATURES AND EVIDENCE OF EFFECT OF INTEGRATED CARE FOR OLDER PEOPLE.

Integrated Services and aged care	(i)The integrated care has helped in the reduction of use of the use hospital services as follows: 20.8%, ED visits 27.9% and in hospital admissions and 19.2% in bed days. Various studies on integrated care have recommended the necessity to understand the integration process, user's individual needs, strengths, weakness and impact of integrated service benefits [49-50]. (ii) Effective integrated care has a positive effect on care delivery, especially on professional cognition and behaviour, which in turn affect the quality of care [50] (iii) Integrated healthcare for the aged people can improve health, satisfaction and service utilization outcomes [49]. (iv) The integrated care is used synonymously to refer to coordinated care and seamless care that have one-stop services, which is most likely to produce polymorphous nature of integrated care itself. The ultimate result is quality outcome if greater integration can be achieved [50]. (v) The integrated care service is highly beneficial to multi-morbid and severe chronic disease patients and the elderly. Integration is exposed to improving of coordination, quality, efficiency and controlling of cost [49-50]. (vi) There are three fundamental issues that have been considered for improving and integrating the care of older people of Australia: (a) adopt a strong person-centred approach (b) better understand the complexity of older people's health care needs and (c) improving integration within existing system59. (vii) Strong leadership, collaboration among key stakeholders; good infrastructure and effective exchange and utilization of information between sectors' collaborating groups, and care providers are important to serve elderly over time [47-49] (viii) Various studies and evidences have shown that integrated health care contributes to a cost-efficient and quality health system through streamlined care of patients, efficient use of resources, a better cover of patients and improved patient safety [50].
Costs-Effectiveness	(i) Timely service delivery, coordinated medical care, improved care coordination can save upto 5%-10% of costs in the integrated care system. However, the cost benefits and quality of care depend on physician and hospital management relationships and market dynamics [48]. (ii) There is no significant difference in utilization and costs of the emergency department visit in integrated care, but satisfaction and quality of care may improve with modest costs [49]. (iii) Integrated care management and coordinated service enhance the quality outcomes and reduce Medicaid clinical costs at a variety of settings [34]. (iv) Integrated primary care in the appropriate setting can meet upto 90-95% of the health needs, produce better health outcomes and improved cost-effectiveness [50]. (v) The integrated care has a triple aim:to better health outcomes, to better care, and to lower costs. Integrated patient-centered healthcare saved the state about $60 million in Medicaid costs in 2003 and the saving increased to $154 million in 2007 in The USA [49]. (vi). In integrating and coordinating services frequent hospital ED users are cost-effective and led to improved clinical and social outcomes [46-49]. (vii) Cost savings associated with structured home-based, nurse-led health promotion for older people at risk of hospital or care home admission [50]
Quality of care	(i) Enhancing care continuity and coordination are two important components of integrated healthcare and it seems to provide better quality of care [38], reduces lengths of stay and medication errors and number of office visits [49]. (ii) Functional integration is more significant than merely structural or financial integration as a determinant of quality outcomes of chronic integrated care systems [50] (iii) The vast majority of studies related to integrated service have shown that there were positive effects on quality of care; however, accurately measuring the performance of the health system, cost and quality of outcomes of the system are very difficult [36]. (iv) Integrated care highlights the integration of care across service providers, setting of services and degree of coordination, which depends on the growing burden of chronic disease in a defined health sector [49-50].

APPENDIX-1: TABLE-SEARCHING SUMMARY

Number of Total Articles & Reports Found[2001-2017]							
Searched Database			**Search terms**				
Eight data sources	**Field & Access**	**Document Type**	**Integrated healthcare for the older people**	**Cost**	**Quality care**	**Cost & Quality care**	**Cost, quality & outcomes**
Springer Link	*All*	*Journals*	*29103*	*3763*	*654*	*307*	*138*
Science Direct	*All*	*Journals*	*23225*	*2877*	*459*	*98*	*78*
Wiley Online Library	*All*	*Journals*	*28581*	*1857*	*1234*	*133*	*79*
Medline (PubMed)	*All*	*Journals*	*6385*	*476*	*112*	*73*	*66*
CINAHL	*All*	*Journals*	*231*	*72*	*23*	*21*	*13*
PsycInfo	*All*	*Journals*	*112*	*68*	*25*	*19*	*11*
Web of Science(SCI,SSCI, HCI)	*All*	*Journals*	*4273*	*243*	*75*	*21*	*15*
Google Scholar	*All*	*All*	*18000*	*7684*	*4320*	*3210*	*2846*
Total			**109910**	**17040**	**6902**	**3882**	**3246**