Journal of Gerontology & Geriatric Research
ISSN: 2167-7182

Luthra et al., J Gerontol Geriatr Res 2015, 4:6
DOI: 10.4172/2167-7182.1000257

Research Article Open Access

A New Geriatric Mental Health Outreach Model of Care for Residents of Long Term Care Facilities; Results of a Continuous Quality Initiative

Atul Sunny Luthra*, Hava Starkman and Nancy Rust

Homewood Health Centre, Canada

Abstract

Various models of delivery of mental health care services exist to address Behavioral and Psychological Symptoms of Dementia (BPSD) in long term care facilities (LTCF). Outcome data on evaluation of these services is rather limited. A new model of delivery of mental health care services to address BPSD in LTCF was developed based upon results from the outcome evaluation of Comprehensive Geriatric (Medicine) Assessment Teams. The model has been labelled *Contemporaneous Model*. Results of a Continuous Quality Initiative on the operations of this model are being presented.

Introduction

It is well documented that the population worldwide is aging, with estimates that by 2050 the population over 65years of age will represent 16% [1] to 21% [2] of the world's population. As the older population increases so too will the number of older adults experiencing behavioural and psychological symptoms associated with cognitive impairment due to Alzheimer's disease and dementia, addictions, various mental health problems, and neurological disorders such as Parkinson's disease [3,4]. Behavioural and psychological symptoms include verbal and physical aggression, resistance to care, disruptive behaviours, disinhibition, agitation, depression, and anxiety [5,6]. Unmanaged, these behaviours are associated with increased Emergency Department visits [7], hospital admissions [8], increased care costs [9] and early institutionalization [10]. It has been estimated that behavioural and psychological symptoms are present in more than 90% of the long-term care home (LTCH) residents with moderate to advanced stages of dementia.

The system of care for seniors is ill-prepared to manage the mental health care needs of our aging population. In Canada, over the past ten years, there have been numerous calls for mental health care system transformation and new system-based initiatives in order to better meet the increasing demands for services for seniors both in the community and in LTCHs [11-14]. Comprehensive Geriatric Assessment Teams (CGAT), focusing on the comprehensive assessment of medical, psychosocial, and functional status [15] came into existence in the 1990's with an initial focus on medical and surgical floors in acute care hospitals and subsequently in the community; where seniors reside. These services focused primarily on the medical and physical needs of the seniors. A meta-analysis of CGAT revealed that only those teams that had adequate integration with the referral teams, controlled medication prescribing and provided extended ambulatory follow-ups were effective in reducing mortality and length of stay, improving function and reducing readmission rates. Identification of unique mental health care needs of the aging population resulted in emergence of geriatric mental health outreach teams which focused primarily on the residents in non-institutional settings. A number of models of care were developed including partnerships between specialized geriatric services and primary care physician (PCP) in their clinics, to provide a shared care approach to assessment and management [16], tertiary care-based multidisciplinary outreach and consultation services emphasizing community and caregiver capacity building, and coordination with local services [17], nurse-led outreach programs [18], and social-worker led multidisciplinary teams [19]. Generally there is a paucity of evaluative evidence of the effectiveness of all models of care of geriatric mental health outreach teams for residents in non-institutional settings. A meta-analysis of the effectiveness of the tertiary care-based community (non-institutional based residents) mental health outreach teams concluded that while there is some evidence demonstrating the effectiveness of these services; the evidence is limited. This analysis found some support for case-finding among isolated older adults and symptom reduction with access to mobile multidisciplinary services. There is no existing evidence of the impact of mental health outreach services on symptom reduction of mental illness on cognition, functioning, prevention of admission to acute mental health units or visit to emergency departments.

The majority of aforementioned published studies on mental health outreach program have been focused on services implemented in non-institutional community settings, with comparatively very few describing services offered in institutional settings such as long-term care facilities (LTCF). For this resident population, there is generally limited access to mental health care services, with residential staff being ill-prepared to manage mental health issues and residents having no or inadequate access to psychiatric consultation [20-22]. The Regional Geriatric Program (RGP) of Toronto, Ontario, Canada, (The RGP is a network of specialized geriatric services that assess and manage older adults with multiple and complex medical, psychosocial and functional needs that collaborate with academic and research institutions to develop and promote best practices in geriatric care), has called for increasing the resources to mental health outreach services to attend to the care needs of the LTCH resident population, with an emphasis on the role of the mental health outreach services not only to reduce the burden of symptoms of mental illnesses, thereby improving function and quality of life, but also to decrease burden of this resident population on acute care hospital systems; especially the emergency department (ED) visits [23]. To this end there was a call for continuous evaluation of these services, on both, qualitative and quantitative measures to determine the efficacy of mental health outreach services and justify their funding [23]. Development of a stronger role for geriatric mental

***Corresponding author:** Atul Sunny Luthra, Medical Coordinator, Program for Older Adults, Homewood Health Centre, 150 Delhi Street, Guelph Ontario, N1E 6K9, Canada, Tel: 519-824-1010, extn: 2408; E-mail: sluthra@homewoodhealth.com

Received October 12, 2015; **Accepted** November 25, 2015; **Published** November 27, 2015

Citation: Luthra AS, Starkman H, Rust N (2015) A New Geriatric Mental Health Outreach Model of Care for Residents of Long Term Care Facilities; Results of a Continuous Quality Initiative. J Gerontol Geriatr Res 4: 257. doi:10.4172/2167-7182.1000257

health outreach services in the system of care for seniors was recently endorsed and supported by the Ontario Commission on Seniors Health; a task force on the delivery of senior's health in the province of Ontario commissioned by the provincial government.

Despite the high prevalence of behavioural and psychological conditions in these settings [24] there are few published descriptions and limited evaluations of effectiveness of geriatric mental health outreach services specifically targeting the long-term care population [20,22]. A literature review of mental health models of care in nursing home settings identified three main models: psychiatrist-centred models, multidisciplinary team models consisting of psychiatrists, nurses, and social workers and psychiatric nurse-led care models [22]. This review found that multidisciplinary team models, targeting multiple care domains, were deemed more effective over consultation models involving one-time visits with recommendations and no follow-up. Available evaluation data supported multi-disciplinary team approaches as resulting in reduced ED visits and hospitalizations. A study of the impacts of specialized psychogeriatric outreach teams consisting of a psychiatrist, and allied health professionals, usually nursing, and conducting comprehensive assessments, providing recommendations, and follow-up, found that access to this service increased staff capacity to independently manage resident needs [25].

The purpose of this paper is to describe the Geriatric Mental Health Outreach Program (GMHOP) operating out of St Peter's site of Hamilton Health Sciences Centre, Hamilton, Ontario Canada, and its provision of service to 24 long term care facilities (LTCF) in its catchment area. The data was collected as a part of Continuous Quality Improvement (CQI) initiative. Preliminary evidence is presented of the effectiveness of this service in meeting the needs of older adults with behavioural and psychological symptoms of dementia (BPSD), from the perspective of LTCH key informants and, in particular, the number of transfer of the residents on the active case load of GMHOP to the ED for inter-current medical illnesses and BPSD [23].

The Hamilton Geriatric Mental Health Outreach Program

Hamilton is the centre of a densely populated and industrialized region in South Western Ontario, Canada, known as the Golden Horseshoe, which is anchored by Toronto, Ontario, the largest city in the province. With a population of base of 721,053, 15.7% are 65 years of age or older [26].

The present day complement of GMHOP is one geriatric psychiatrist and 2.6 case managers (CM). The individual disciplines of the CM's on the team include one registered nurse (RN) and two occupational therapists (OT). In 1999, with the arrival of the senior author to GMHOP, a new philosophy of service delivery care was developed based upon the results of the meta-analysis of the CGA team functioning. It has evolved into this *contemporaneous model* of service delivery. The four primary tenants of this care model are;

Controlling prescribing of the behavioral treatment for the referred index problem,

Taking over the management all variables (medical, psychiatric and social) deemed *contributory* to the index problem,

Providing an extended duration of follow-up until complete resolution of the index problem.

Partnership with existing community resources such as the Psychogeriatric Resource Consultant [27] and Behavioral Supports Ontario (BSO [28] for behavioral treatment intervention of the index problem).

The operational model of GMHOP consists of 'shared care' model of service delivery (transcribing and/or implementing recommendations at the initial and subsequent visits) and until the resolution of the referred index problem. The aim of the HMHOP is to work collaboratively with LTCH staff, integrating itself within the referral teams and functioning as their extension instead of being viewed as an outside team providing clinical services.

Methods

The preliminary evaluation of the GMHOP consisted of a structured survey completed by key informants from LTCH of their perceptions of the delivery of this model of care by GMHOP to its residents. Additional, potential outcome included a review of the medical records of 335 resident's charts on the active case load of GMHOP to determine what percentage of these residents required visits to ED for intervention of BPSD. GMHOP records were reviewed on all the residents on the active case load for the 2013/2014 fiscal year.

Survey of long-term care homes

Of the 24 LTCH within the catchment areas of the GMHOP, 15 were randomly selected to be surveyed. Questions were asked about the extent to which recommendations made by the service addressed the stated presenting problems/ concerns (all of the time, most of the time, sometimes, not at all/ never), consistency in the provision of follow-up support (yes, no), the extent to which follow-up support addressed the stated presenting problems/ concerns (all of the time, most of the time, sometimes, not at all/ never), access to GMHOP case managers (all of the time, most of the time, sometimes, never, not applicable), behavioural stability at the time of discharge from the service (all of the time, most of the time, sometimes, not at all/ never), resolution of the problem which prompted the initial referral (all of the time, most of the time, sometimes, not at all/ never), and the extent to which the GMHOP functioned as an extension of home's care team (always, most of the time, sometimes, never). Respondents were provided with the option of making comments related to their responses to each question. The survey was administered in-person within the LTCHs by a trained Research Assistant to allow homes to have more than one staff member to contribute to the survey responses as relevant. In one home, the survey was completed with input from three staff members (Director of Care, Assistant Director of Care, Nurse) and in the remaining homes, the survey was completed by one staff member (Directors of Care, N = 13, Nurse, N = 1). This survey was administered in July and August, 2014.

Medical record audit

The medical records of 335 residents who were on the active case load of the GMHOP between April 1, 2013 and March 31, 2014 were reviewed. Data abstracted for this review included patient gender, date of service start, total number of ED visits after service start, and number and reason of ED visits for behavioural issues after service start.

Program record audit

GMHOP records were reviewed to identify the number of LTCH residents, across all homes in the GMHOP catchment area that were on the active caseload from April 1, 2013 and March 31, 2014. Data abstracted from this review included the number of new consultations, number of ongoing cases, total number of client contacts, and total number of face-to-face follow-up visits made the by psychiatrist and case manager together. The data on the telephone contacts made by the CM with the facility staff and the geriatric psychiatrist with referring primary care physician (PCP) was not included.

Data analysis

Quantitative survey and medical record audit data were analyzed using IBM's SPSS software (IBM Corp, Version 23.0, Armonk, NY: IBM Corp). Descriptive statistics (frequencies, means, standard deviations) were generated for numeric variables. An inductive analysis was used to identify reoccurring themes in the open-ended survey comments. This analysis was conducted by a research assistant and reviewed by the author to confirm saturation and reliability.

Results

Client population and service provision

From April 1, 2013 to March 31, 2014 there were 335 clients on the active GMHOP case load. See Table 1 for details. Of the 335 clients on the GMHOP case load between April 1, 2013 and March 31, 2014, 156 (46.6%) represented new consultations and the remaining clients were ongoing cases (initially referred and assessed prior to April 1, 2013). Response to see the residents was variable and determined by clinical acuity at the time of intake. In total the GMHOP made 1964 client contacts in a 12-month period, with 156 new consultations and 1808 face-to-face follow-up visits conducted by the psychiatrist and case manager together. The case managers visited with the residents on their own in addition to the telephone consultations done with the staff of respective facilities. The psychiatrist also provided telephone consultation to the primary care physicians in all the facilities as well. All of the data on indirect contact is not included in this presentation.

Survey of LTC referral sources

Perceptions of the consultation service: In terms of the ability of stated recommendations to address the concerns that prompted the referral, the key informants from the majority of LTCHs (87%) reported that recommendations addressed specific resident needs, *all of the time* (47%) or *most of the time* (40%; Table 2). This was attributed to the clinicians' communication with LTHC staff to further discuss expressed concerns, as reflected in the following comments:

"[Clinician] *is very open and listens, and understands.*"

"Yes, because [Clinician] *takes time and pays attention to detail."*

In cases where it was perceived that that recommendations did not always address their concerns, this was attributed to the multiple and complex issues experienced by residents that are not always clearly documented on the medical chart, and issues do that not respond pharmacological management alone, as reflected in the following comments:

"Often things are not picked up on because they are not noted down or the people are not getting the whole picture of the client."

"The problems that we have are not always solved by medication changes."

"Sometimes there are many concerns. So most of the time yes [recommendations address stated concerns], *but if there are multiple concerns they might only be able to address them one at a time."*

Although key informants from all of the LTCHs (Table 2) reported that follow-up visits occurred on a regular basis (i.e., every 6 – 8 weeks), key informants from two homes indicated that the time for follow-up was too long, indicating that the complexity of some problems required more frequent visits. As presented in Table 2, key informants from the majority of homes (80%) reported that the recommendations made at follow-up visits addressed initial concerns *all of the time.*

Key informants from all but one home reported that they had accessed the GMHOP case managers via telephone for follow-up consultation; key informants from one home indicated that they had not yet had an opportunity to avail themselves of this service. It was generally noted that telephone calls are returned in a timely manner, with responses usually within 24 to 48 hours. Related to accessing case managers for changing behavioural risks (e.g., when behaviours escalate or new behaviours are displayed), key informants from the majority of LTCHs (60%) indicated that it was easy to access the case manager *all of the time*; key informants from five homes reported that given the urgent nature of changing behavioral risks they would access internal resources (on-call physician, Behavioural Supports Ontario team) for an immediate response (Table 2) prior to accessing the GMHOP.

Characteristic	Number (%)
Client Population	
Age (mean)	*86*
Gender	
Men	*(45%)*
Women	*(55%)*
Presenting problem at referral or Primary diagnosis	*Advanced Dementia*
Service Provision	
Total number of client contacts	*1964*
Initial consultation	*156*
Follow-up visits (Psychiatrist and case manager)	*1808*
Response time to consultation	
Number of initial consultations (new referrals)	*156 (46.6%)*
Number of clients seen on an ongoing basis*	*179 (53.4%)*

*These clients were initially assessed in the previous fiscal year.

Table 1: Service Provision and Client Population and Services Provided by the Geriatric Mental Health Outreach Program from April 1, 2013 to March 31, 2014 (N=335)

Consultation Services	Number (%)
Initial consultation	
Do the consultation recommendations address your initially identified concerns?	
Yes, all of the time	7 (46.7%)
Yes, most of the time	6 (40.0%)
Yes, sometimes	2 (13.3%)
No, not at all/ never	0
Follow-up visits	
After the initial consultations are follow-up visits scheduled on a consistent basis?	
Yes	15 (100%)
No	0
Do the recommendations made in follow-up visits address your initially identified concerns?	
Yes, all of the time	12 (80.0%)
Yes, most of the time	1 (6.7%)
Yes, sometimes	1 (6.7%)
No, not at all/ never	0
Is there easy access to case managers for changing behavioural risks?	
Yes, all of the time	9 (60.0%)
Yes, most of the time	0
Yes, sometimes	1 (6.7%)
No, not at all/ never	0
Not applicable –access other professionals*	5 (33.3%)

Note: Percentages do not sum to 100% due to missing values.
* Other professionals included on-call physician, Behavioral Support Ontario team

Table 2: Key informants perceptions of the provision of consultation services by the Geriatric Mental Health Outreach Program (N=15).

Outcomes Associated with the GMHOP

Generally, key informants from all of the homes reported that consultation recommendations are implemented, initially, usually upon review by the residents PCP, and subsequently, transcribed directly from GMHOP recommendations. Several key informants noted *all* medication related recommendations are implemented as stated except those where families did not consent. Not *all* non-drug recommendations were implemented. Barriers to implementing recommendations included inability to read hand written notes in the residents chart or attending PCP decision the non-drug recommendations were not needed at that point in time.

Figure 1 presents interview participants self-reports of the time frame in which consultation recommendations are fully implemented. Key informants from the majority of LTCHs (N = 13, 87%) reported that recommendations were fully implemented within 24 hours. Two homes noted that those recommendations were fully implemented within 48 hours noting that delays were created when family approval was needed.

Key informants from all of the LTCHs indicated that residents were behaviourally stable at the time of discharge from the GMHOP, either *all of the time* (80%), or *most of the time* (20%); it was noted that residents are not likely to be discharged by the GMHOP unless there was confidence in the home that the behaviours were resolved or manageable (Table 3). Similarly, it was reported by key informants from all of the LTCHs, that behavioural concerns identified at the time of referral had resolved by the time of discharge from the service, *all of the time* (53%), or *most of the time* (46.7%). The majority of interview participants reported that the GMHOP was able to function as an extension of the LTCH care team, *most of the time* (27%) or *always* (67%); only one home reported that the GMHOP did not function in this capacity.

Among the 335 residents whose charts were audited (N = 175), there were 252 ED visits, the majority (88%) of which were for medical issues; 12% of the ED visits were for behavioural issues (Table 4). A total of 22 residents were responsible for the 31 behaviour-related ED visits during this time period, over half of which were primarily due to aggressive behaviour. The majority of these residents (64%) had one visit, while 8 residents had two to three visits.

Discussion

This study has demonstrated that a mental health outreach team, providing comprehensive assessment, care planning, and extended follow-up supports, until the presenting problem at the time of referral is resolved, can be an effective model for managing psychological and behavioural issues in LTCH. The LTCH staff surveyed in this study perceived that the recommendations made by this service addressed their initial concerns and they were able to implement them within 24 hours, reflecting the applicability and relevance of the recommendations. Case managers were easy to access, follow-up recommendations were perceived as addressing identified concerns, and for the most part, issues prompting referral to the service were resolved at the time of diagnosis and residents were deemed behaviourally stable. Most important to this model of care, almost all the surveyed LTCH representatives perceived the HMHOP to function as an extension of their care team, reflecting

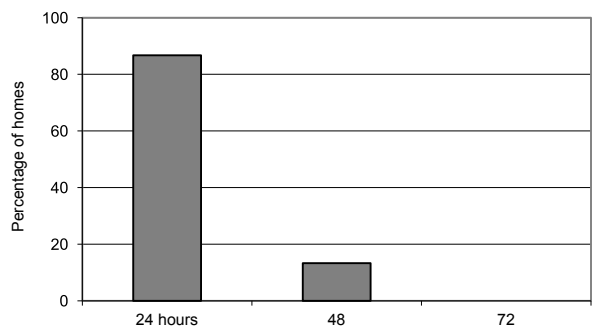

Figure 1: Self-reports of the timeframe in which recommendations are fully implemented (N=15).

Outcomes	Number (%)
Are residents behaviourally stable at the time of discharge?	
Yes, all of the time	12 (80.0%)
Yes, most of the time	3 (20.0%)
Yes, sometimes	0
No, not at all/ never	0
Have the identified referral concerns been mitigated upon discharge from the service?	
Yes, all of the time	8 (53.0%)
Yes, most of the time	7 (46.7%)
Yes, sometimes	0
No, not at all/ never	0
Does the GMHOP function as an extension of your care home team?	
Always	10 (66.7%)
Most of the time	4 (26.7%)
Sometimes	0
Never	1 (6.7%)

Table 3: Key informants perceptions of the outcomes at discharge association with the Geriatric Mental Health Outreach Program (N=15).

Visits		n, %
Length of time on service (months) Mean (SD)		16.0 (8.9)
Range		1-45
Gender	Male	67 (38.3%)
	Female	108 (61.7%)
Total number of ED visits		252
Reason for the ED visits Medical issues		221 (87.7%)
Behavioural issues		31 (12.3%)
Reasons for behaviour-related ED visits		
Aggressive/ violent behaviour		16 (51.6%)
Social issues		3 (9.7%)
Mood disturbance (anxiety, depression)		3 (9.7%)
Safety concerns		3 (9.7%)
Unusual behaviours (unspecified)		2 (6.5%)
Miscellaneous*		4 (12.9%)
Mean (SD) number of visits per patient		2.6 (3.9)
Range		1-36**
Gender	Male	44 (44.9%)
	Female	54 (55.1%)
Number of patients responsible for behavioural issue related ED visits		22 (6.6%)
Mean (SD number of visits per patient		1.4 (.59)
Range		1-3
Gender	Male	11 (50.0%)
	Female	11 (50.0%)

*Confusion, psychogeriatric assessment, failure to cope, unspecified
**One patient had 36 visits, when this outlier is removed, the mean (SD) number of visits=2.2 (1.9, range=1-13.

Table 4: Emergency Department (ED) Visits by Clients Served by Geriatric Mental Health Outreach Team between April 1, 2013 and March 31, 2014 (N=175).

the collaborative and integrated approach to service provision. This approach to care is somewhat unique in comparison to others described in literature, in which consultants assess residents, provide recommendations, and leave the LTCH to implement recommendation with minimal follow-up support [22,29,30]. Such model of service delivery would be analogous to a PCP referring a frail elderly resident with moderate cardiomyopathy with residual congestive heart failure and tachycardia to a cardiologist. The resident returns to PCP with recommendation for series of investigations and suggested changes to medications. The PCP will endeavor to do their best in following through with recommendations but does not possesses the professional training nor the skill set to appreciate all the nuances of such a complex case. Furthermore, is such an approach to care in the best interest of the resident? GMHOP is not only involved in implementation of the necessary investigations and drug recommendations but also remains involved in interpretations of the investigations and assessing outcomes from initial recommendations, suggesting new strategies when the initial ones are not as effective as anticipated. In this respect, integration of the GMHOP within the LTCH care team ensures constant assessment and reassessment of the efficacy of recommendations to ensure a prompt and proactive approach to resolving the issues that prompted referral to the service.

Within this care model, the HMHOP remains involved in the care of the patient until the resolution of the referred index problem while taking complete ownership of the index problem while working collaboratively with LTCH staff to implement recommendations and assess their efficacy. This model of care, in comparison to those models that limit involvement only to consultation and provision of recommendations, is more difficult to deliver for a number of reasons.

Firstly, it requires the attending psychiatrist to maintain medical skills at the same level as a PCP and seek specialty consultations as necessary. The identified medical issues are not simply re-referred to the PCP for 'medical clearance' on the issue. Instead, it is the primary responsibility of the attending geriatric psychiatrist to determine as to which of the medical variables are contributory to the behaviours and which ones are simply incidental findings. It must be the responsibility of then behavioral medicine specialist to determine if chronic electrolyte imbalance, glycemic dyscontrol or positive urine growth, as an example, are contributory to the index behavioural problem Seeking consultations with General Internal Medicine, Endocrinologist or Urologist, respectively, will assist in delivering the highest level of care in the management of these variables. However, the respective specialists, at best, can only speak to the theoretical underpinnings of the relationship between these variables and behaviors in general; not to the specific causality between the two. The behavioral specialist is, and should be, the most appropriate professional to deliberate on the specific causality between medical variables and behaviors and need to position themselves, accordingly.

Secondly, this model of service delivery requires building a strong working relationship between PCP and the HMHOP team to share the management of multiple co-morbidities as they contribute to psychological and behavioural issues. This shared care approach is essential to the process of implementing and evaluating the efficacy of treatment recommendations and revising the treatment plan based on initial outcomes.

There is limited evidence of the effectiveness of mental health outreach services in long-term care settings, both in terms of impact on reducing psychological and behavioural symptoms and impact on reducing use of acute care resources. In this CQI initiative, it was found that the majority of ED visits for residents being served by the HMHOP were for medical issues, with only 12% of ED visits within a 12-month period being due to behavioural issues. This is in direct contrast to other reports which identify the transfers from LTCH to the ED were more than double for mental health issues than medical issues [7]. While it is reasonable to accept that it is not possible to unequivocally attribute the lower proportion of ED visits in this study directly to involvement of the GMHOP. It is, however, reasonable to propose the unique model of delivery of care, open and easy access to every member of the team, and, particularly follow-up support to manage ongoing behavioural issues may have offered staff a viable alternative care option other than to transferto the ED. More research is needed, particularly using experimental methods, to elucidate the role of the GMHOP model of care in reducing acute care utilization and support LTCH to manage severe and complex mental health issues independently. Future evaluation of HMHOP will aim for a more comprehensive assessment of the structural properties and processes of care, consistent with recommended frameworks for assessing quality of care [31].

There are a number of limitations to this study. As the LTCH survey was administered in-person, limited resources precluded the inclusion of all 24 homes in this study. While this could potentially pose a threat to the validity of this study, this is likely minimal as the 15 homes participating in this study were randomly selected and represented a 63% of the homes in the area. Similarly, limited resources precluded a comprehensive review of the charts of all of the residents that received service from the GMHOP, though the charts were randomly selected and represented a little half of those served within the fiscal year. While it is acknowledged that more rigorous research methodologies such as randomized or quasi-experimental designs would provide more conclusive evidence on the outcomes associated the GMHOP, the use of these types of methodologies were not possible in this study and generally are lacking in the literature. Funding and resources allocation for the GMHOP as provided by the government is directed at service provision to this vulnerable population, which did not allow for formation of comparison or control groups not accessing the service or more in-depth evaluation of potential outcomes over time. Despite these limitations, this study provides a preliminary understanding of the potential effectiveness of the HMHOP model of care.

References

1. Kinsella K, He W (2009) An aging world: 2008. Washington, DC: National Institute on Aging and US Census Bureau.
2. http://www.un.org/en/development/desa/population/publications/pdf/ageing/WorldPopulationAgeing2013.pdf.
3. Smetanin P, Kobak P, Briante C, Stiff D, Sherman G, et al. (2009) Rising Tide: The Impact of Dementia in Canada in 2008 to 2038. Risk Analytica, Canada.
4. Mathillas J, Lovheim H, Gustafson Y (2011) Increasing prevalence of dementia among very old people. Age Ageing, 40: 243-249.
5. Savva GM, Zaccai J, Matthews FE, Davidson JE, McKeith I, et al. (2009). Prevalence, correlates and course of behavioural and psychological symptoms of dementia in the population. Br J Psychiatry 194 : 212-219.
6. Cerejeira J, Lagarto L, Mukaetova-Ladinska EB (2012) Behavioural and psychological symptoms of dementia. Front Neurol 3: 73.
7. Larkin GL, Claasen CA, Emond JA, Pelletier AJ, Camargo CA (2005) Trends in U.S. Emergency Department Visits for Mental Health Conditions, 1992 to 2001. Psychiatry Serv 56: 671-700.
8. Toot S, Devine M, Akporobaro A, Orrell M (2013) Causes of hospital admission for people with dementia: a systematic review and meta-analysis. J Am Med Dir Assoc 14: 463- 470.
9. Beeri MS, Werner P., Davidson M, Noy S (2002) The cost of behavioral and psychological symptoms of dementia (BPSD) in community dwelling Alzheimer's disease patients. Int J Geriatr Psychiatry 17: 403- 408.

10. Chan DC, Kasper JD, Black BS, Rabins PV (2003) Presence of behavioral and psychological symptoms predicts nursing home placement in community-dwelling elders with cognitive impairment in univariate but not multivariate analysis J Gerontol A Biol Sci Med Sci 58: 548-554.

11. http://strategy.mentalhealthcommission.ca/pdf/strategy-text-en.pdf.

12. http://www.advocacycentreelderly.org/appimages/file/Jury%20Recommendations%20-%20Casa%20Verde%20Inquest.pdf

13. http://www.southeastlhin.on.ca/uploadedFiles/Home_Page/Report_and_Publications/Building%20a%20Better%20System.pdf

14. Sinclair D, Rochon M, Leatt P (2005) Riding the Third Rail. The Story of Ontario's Health Services Restructuring Commission 1996-2000. Montreal, QC: Institute for Research on Public Policy.

15. Devons CA (2002) Comprehensive geriatric assessment: Making the most of the aging years. Current Opinions in Clinical Nutrition and Metabolic Care 5: 19-24.

16. Sullivan MP, Parenteau P, Dolansky D, Leon S, Le Clair JK (2007) Shared geriatric mental health care in a rural community. Canadian Journal of Rural Medicine 12: 22- 29.

17. Stolee P, Kessler L, Le Clair JK (1996) A community development and outreach program in geriatric mental health: four year's experience. Journal of the American Geriatrics Society 44: 314-320.

18. Rabbins PV, Black BS, Roca R, German P, McGuire M (2000) Effectiveness of a nurse-based outreach program for identifying and treating psychiatric illness in the elderly. JAMA 283: 2802-2809.

19. Kohn R, Goldsmith E, Sedgwick TW (2002) Treatment of homebound mentally ill elderly patients: the multidiscplinary psychiatric mobile team. Am J Geriatr Psychiatry 10: 469-475.

20. Grabowski DC, Aschbrenner K.A, Rome VF, Bartels SJ (2010) Quality of mental health care for nursing home residents: A literature review. Med Care Res Rev 67: 627-656.

21. Shea DG, Russo PA, Smyer MA (2000) Use of mental health services by persons with a mental illness in nursing facilities: Initial impacts of OBRA87. J Aging Health 12: 560-578.

22. Bartels SJ, Moak GS, Dums AR (2002) Models of mental health services in nursing homes: A review of the literature. Psychiatric Services 53: 1390-1396.

23. http://rgp.toronto.on.ca/PDFfiles/Outreachbenchmarkingreportfinalapril20072.pdf.

24. Seitz D, Puradnare N, Conn D (2010) Prevalence of psychiatric disorders among older adults in long-term care homes: A systematic review. Int Psychogeriatr 22: 25-39.

25. Fischer CE, Cohen C, Stephens A, Ross S, Hoch JS (2011) Determining the impact of establishing a psychogeriatric outreach team network in long-term care. Psychiatr Serv 62: 299-302.

26. https://www12.statcan.gc.ca/census-recensement/2011/as-sa/fogs-spg/Facts-csd-eng.cfm?LANG=Eng&GK=CSD&GC=3525005

27. http://brainxchange.ca/Public/Resource-Centre-Topics-A-to-Z/Psychogeriatric-Resource-Consultants.aspx.

28. Gutmanis I, Snyder M, Harvey D, Hillier LM, LeClair JK (2015) Health care redesign for responsive behavioiurs - the Behavioural Supports Ontario Experience: Lessons learned and keys to success. Canadian Journal of Community Mental Health 34: 45-63.

29. Streim JE, Oslin D, Katz IR, Parmalee PA (1997) Lessons from geriatric psychiatry in the long-term care setting. Psychiatr Q 68: 281-307.

30. Gupta S, Goldstein MZ (1999) Psychiatric consultation to nursing homes. Psychiatric Services, 50: 1547-1550.

31. Donabedian A (2005) Evaluating the quality of medical care. Milbank Q 83: 691-729.