

# An Academic Educational Program for Providing Eye Care to Older Individuals

Hélène Kergoat<sup>1,2</sup>, Marie-Jeanne Kergoat<sup>2,3</sup>

<sup>1</sup>École d'Optométrie, Université de Montréal, Montréal, Canada

<sup>2</sup>Institut Universitaire de Gériatrie de Montréal, Montréal, Canada

<sup>3</sup>Faculté de Médecine, Université de Montréal, Montréal, Canada

Email: [helene.kergoat@umontreal.ca](mailto:helene.kergoat@umontreal.ca), [marie-jeanne.kergoat@umontreal.ca](mailto:marie-jeanne.kergoat@umontreal.ca)

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## Abstract

The literature indicates that the prevalence of oculovisual problems increases with age and that it is higher in older individuals residing in long-term care facilities (LTCF) compared to those living in the community. It further indicates that eye care services in LTCF are sub-optimal. The objective of this article is to describe the university-based educational program we have developed and implemented to train optometry students in the eye care of older individuals, including those among the most vulnerable, i.e. those residing in LTCF. Our two university-based institutions, the Institut universitaire de gériatrie de Montréal and the École d'Optométrie de l'Université de Montréal, collaborated to implement this program. The program has three main components: formal didactic courses, clinical rotations and *in situ* clinical research. It allows the students to learn how to adapt their clinical interventions to a variety of older patients, taking into account their specific needs, potential complex health conditions, behavior, socio-economic and socio-cultural context, as well as their capacity to understand and collaborate to the oculovisual exam. The program further follows recommendations by leaders in public health, geriatrics and optometry in offering a discipline-specific program in geriatrics.

## Keywords

Dementia, Education, Geriatrics, Geriatric Optometry, Long-Term Care Facilities, Optometry

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## 1. Introduction

The advances in technology, scientific discoveries, improvement in health care and increased awareness of a healthy life style (Khaw et al., 2008) have all contributed to the increased longevity of older adults in developed

countries. However, the aging of the population is accompanied by an increased prevalence of multiple chronic diseases, leading to functional decline and disabilities ([www.phac-aspc.gc.ca/cphorsphc-respcacsp/2010/fr-rc/index-eng.php](http://www.phac-aspc.gc.ca/cphorsphc-respcacsp/2010/fr-rc/index-eng.php)). The high prevalence of dementia in the older population (The Canadian Study of Health and Aging, 1994), in particular, represents a growing public health concern. Unfortunately, the health care workforce is not prepared to take care of the complex health problems affecting older persons ([www.naap.edu/catalog/12089.html](http://www.naap.edu/catalog/12089.html)), and their health care needs will be further amplified by the massive arrival of all baby-boomers in the  $\geq 65$  yrs of age category in the next few years ([www.naap.edu/catalog/12089.html](http://www.naap.edu/catalog/12089.html)).

Within the last decade, leaders in geriatrics (Mankin LaMascus et al., 2005) and in public health ([www.naap.edu/catalog/12089.html](http://www.naap.edu/catalog/12089.html)) have made recommendations for increasing the number of researchers and health care practitioners in aging. The Institute of Medicine (IOM) report stated: “*Indeed, the education and training of the entire health care workforce with respect to the range of needs of older adults remains woefully inadequate. Recruitment and retention of all types of health care workers is a significant problem, especially in long-term care settings. Unless action is taken immediately, the health care workforce will lack the capacity (in both size and ability) to meet the needs of older patients in the future*” ([www.naap.edu/catalog/12089.html](http://www.naap.edu/catalog/12089.html)). This echoed the report by leaders in geriatrics who emphasized the importance of translating evidence-based advances into the clinic, encouraging and sustaining research, hiring and retaining academic researchers and mentoring the youngest ones (Mankin LaMascus et al., 2005). For patient care, they stressed the importance of increasing the number of practitioners trained in geriatrics within an interdisciplinary model and of integrating geriatrics training in the various health professions curricula, developing academic leaders in the field and offering discipline-specific as well as interdisciplinary continuing education (CE) programs in geriatrics.

Publications from various professions have also addressed some of these important issues. Hence, it was recently reported that general physicians were usually not as good as specialists for diagnosing Alzheimer’s disease, possibly delaying treatment (Nagle et al., 2013). Nursing staff are not well trained to work in geriatrics or with mental illness issues, and not well prepared to deal with problematic behaviors (Blair Irvine et al., 2012). In long-term care facilities (LTCF), this can lead to high risk of negative consequences, with distress and illness of the caring staff, avoidance of patients presenting these problems or increased prescription of psychotropic medications and restraints for the residents (Blair Irvine et al., 2012). An article targeting pharmacists indicated that the profession will need all pharmacists to have a minimal level of competence in geriatrics to care for older adults, as well as specialists to care for the frail elderly and to advance knowledge in the field (Gray et al., 2009). Possible solutions have been proposed, such as incorporating courses in geriatrics within the curricula, hiring and retaining a core of professors specializing in the field, and providing CE to active professionals (Struck et al., 2005; Morhardt 2006; Scherer et al., 2008; Gray et al., 2009). These solutions were addressed even more strongly in one of the IOM recommendations: “*All licensure, certification, and maintenance of certification for health care professionals should include demonstration of competence in the care of older adults as a criterion*” ([www.naap.edu/catalog/12089.html](http://www.naap.edu/catalog/12089.html)) and in the report recommending that credentialing and licensing boards include geriatric content on entry and recertification exams (Mankin LaMascus et al., 2005).

Similar concerns have also been raised for some three decades within the optometric profession. It was suggested that optometry should embark on the interdisciplinary model, in order to offer full optometric geriatric care, and not only eye care to older patients (Lightman & Rosenbloom, 1991). Hence, to adequately care for the elderly, optometrists need to understand who the frail older persons are before being able to apply their highly specialized skills and hope that recommendations will be followed. Without a good understanding of the frail patients, their vulnerability to iatrogenic problems and illnesses, as well as the status of their psychosocial environment, the best possible oculovisual therapy may well remain unsuccessful. Geriatric programs were even sponsored by Optometric Associations for optometric faculty and practicing optometrists (Aston, 1990).

In general, older individuals consulting their optometrist in office are still functionally independent (Kergoat et al., 2015) but among them, some may be affected by undetected cognitive deficits, falls, or other health issues more prevalent at an older age. Optometrists should be prepared to adapt their eye exam and treatment to best answer the needs of these patients. For those who are institutionalized, a recent survey indicated that eye care services in LTCF are not offered on a regular basis, neither to all residents (Kergoat et al., 2014), a situation that has prevailed for decades already (Horowitz 1997, Wingert & McAlister 1999). This is unfortunate, as clearly documented in a recent review (Armstrong and Kergoat 2015), knowing that old age, as well as cognitive or communication disorders, do not prevent eye examinations in these residents, that they have a high prevalence

of visual deficits and knowing that improving their vision increases their quality of life.

There are often misconceptions about caring for older patients, and ageism (Kergoat, 2009). However, negative perceptions can be improved through education, this also being the case for optometry (Rumsey, 1993). Probably as important as ageism is the fact that if health care professionals do not understand the specificity and heterogeneity of frail patients, they may not know how to adapt their interventions to the special needs of this population and therefore not be able to help them, as could be the case for an older person with dementia, aphasia or behavioral problems not being able to collaborate in a standard fashion. The important role optometrists can play in caring for the elderly in settings such as in long-term care (LTC), at the bed-side and within geriatric evaluation units has been described (Norden, 1988; Carter, 1996). It has also been recognized that “*Quality geriatric education can lead to knowledgeable and humane practitioners, improved patient services, and more effective health care*” (Aston, 1990) and, “*If optometrists are to provide care to the elderly as they must, it is imperative that every optometrist receive formal training in geriatric optometry*” (Verma, 1988). To achieve this, it has been proposed that each School should develop a core Faculty with the required expertise in gerontology/geriatrics, develop strong active research in the area, as well as CE programs (Eger, 1982; Verma, 1988; Swanson et al., 1994). It has also been suggested that professional associations, as well as credentialing, licensing and accreditation organizations should endorse an interprofessional model of education so that all health care professionals have the required competence to improve health care offered to older adults (Crocker Houde & Melillo, 2009; Goldberg et al., 2012), a model that should apply to optometry as well.

The objective here is to describe the university-based educational program we have developed to train optometry students in the eye care of older adults, including frail older adults residing in LTCF.

## 2. Creating an Educational Program in Geriatric Optometry

### 2.1. Settings

The Institut universitaire de gériatrie de Montréal (IUGM), a university-based geriatric hospital, comprises 446 beds: 28 for acute geriatric care, 45 for intensive rehabilitation, 24 transitional care beds, 19 transitional care beds with geriatric recovery, and 330 for LTC. It also includes six general and specialized geriatric outpatients’ clinics, a day care hospital and a day care centre. Its mission encompasses 3 domains: patient care, education and research. Students within the various health professions at the University can do clinical rotations in geriatrics in their area of training at the undergraduate or post-graduate level. The IUGM also hosts an internationally recognized research centre where students of all levels can pursue research in aging/geriatrics.

The École d’Optométrie de l’Université de Montréal (ÉOUM) is the only French University-based School of Optometry to offer a program in Optometry leading to the Doctorate of Optometry (O.D.) degree, and this, at the international level ([www.opto.umontreal.ca/ecole/portrait.html](http://www.opto.umontreal.ca/ecole/portrait.html)). It graduates some 42 students per year, representing about a third of all optometrists educated in Canada yearly. In 1990, the ÉOUM was relocated in a new building situated at a 10 minute walking distance from the IUGM. This offered a unique opportunity to open a dialogue with the director of professional services at the IUGM, to create a clinical rotation for optometry students. At that time, the ÉOUM curriculum did not have any formal theoretical or clinical training in geriatric optometry for its students.

In 1994, the clinical rotation in geriatric optometry was created within the IUGM. The hospital already had a fully equipped eye examination room utilized by an ophthalmologist consulting on an external basis, and two additional adjacent rooms were allocated for the clinical rotations. The second room was equipped with standard instrumentation and the third one hosted complementary equipment for special testing and/or patient overflow. With time and budget allocations, the clinic was able to acquire portable instruments and to adapt the existing equipment to be able to evaluate patients in any type of wheelchair. A coordinator ensured the smooth operation of all aspects of the clinic. An experienced optometrist-researcher supervised the clinical training of the students. In parallel, the optometrist developed a dialogue with the other professionals involved in the interprofessional care of the patients, as well as a clinical research program in geriatrics. The optometrist also got involved in the various CE activities of the hospital as well as the main geriatric organizations for advancing clinical care and research in aging/geriatrics.

### 2.2. Clinical Rotations

The rotations expose the students to patients with a wide variety of clinical presentations, including the full

spectrum of geriatric syndromes (e.g. recurrent falls, dementia, behavioral problems, multi-morbidities, poly-pharmacy, etc.). Most patients are 80 to 100 yrs of age (avg: ~85 yrs) with a high prevalence of cognitive and/or communication disorders. The hospital file offers considerable information on the overall health of the patient prior to the oculo-visual exam. Under careful guidance, the students learn to adapt their various diagnostic techniques to conduct their exam efficiently to maximize the quality of the responses obtained while minimizing the patient's fatigue and test duration. Although all regular tests are not performed on each patient in the problem-based oriented exam, all necessary tests required by the patient's condition will be attempted. Minimally, every effort is made to obtain a measurement of the visual acuity (VA), the ocular refraction as well as the ocular health, with pupillary dilation. The students are also exposed to the dynamics of caring for an oculo-visual condition while taking into account other dimensions of a patient's life, such as the interaction of the patient's family in the decision making process, the socio-economic aspects of the patient's life, the socio-cultural dimension (different ethnicity, values, religion or language), the impact of potential psychological or environmental distress on the patient's capacity to accept or not a proposed treatment recommendation, etc. Their rotations also teach the students that a standard of care treatment is not necessarily the optimal treatment for a given patient, in view of the patient's overall health and life situation. On the other hand, patients must be offered standard of care treatment if their overall health and life situation does not present contra-indications, as no assumption on the uptake of treatment should be made by the practitioner.

### 2.3. Formal Course in Geriatric Optometry

In 1999, when a curriculum review process was implemented at the ÉOUM, a formal course in geriatric optometry could be created to better prepare the students, prior to their entry in the geriatric optometry clinic. At that time, a review of what was offered in other optometry programs, academic guidelines, as well as book contents in the area was performed, as well as a revision of the various patient presentations seen in the clinical rotations. The principal objective of the course was to ensure that students understand who is the older adult, with strong emphasis on the frail older adult, what are the principal geriatric syndromes and age-related diseases as well as their impact on the person's life, and what are the various elements to take into consideration while examining these patients. Other objectives were to familiarize the students with the effects of aging on the eye and vision, and to teach them how to adapt their clinical interventions for caring for the older patient.

Another very important consideration was to ensure that the course was offered by health care practitioners working with elderly patients and having theoretical and clinical expertise in the course material to be provided. The course outline was then prepared and key persons were identified and invited to a preparatory meeting. It was agreed that each person would come up with a lesson plan and specific objectives for their section and that this material would be reviewed by the optometrist-professor responsible for the course. The same process would be implemented for the course material once ready. The topics of the course included: overview of the course and clinical setting, epidemiology, health status and clinical care of the older individuals including the frail elderly, normal/abnormal cognition, neurolocomotor aspects, vascular diseases, geriatric syndromes, depression/anxiety disorders, psychosocial aspects and health care/social support network, communication, specificity of the long-term care population, ethics, anatomical/physiological/functional oculo-visual changes with age, adapted oculo-visual exam, particular topics in vision relevant to the elderly. Each part of the course, whenever appropriate, also covered the physiological and pathological changes taking place during the aging process as well as diagnostic and therapeutic issues. The course content is continually updated with current literature and evolves with time, taking into consideration the various patient presentations seen in clinic, the feedback provided through discussions with the students, as well as their questions and comments.

### 2.4. Clinical Research in Aging/Geriatric Vision

The clinical interventions with patients and interactions with professionals involved in their care led to a clinical research program targeting the oculo-visual characteristics and special needs of this elderly vulnerable population. This program helps answer pragmatic issues encountered while testing patients in clinic, and for which the literature is either very limited or non-existent. The research results are then incorporated in the course curriculum and clinical care of patients. A few examples of research data that have been transferred in the clinical care of patients, as well as data showing the non optimal provision of eye care in LTCF, are presented briefly here. Each research protocol received approval from the Research Ethics Committee of the Institut universitaire de gériatrie

de Montréal. Hence, research has shown that an oculo-visual exam including minimally a measurement of the VA, ocular refraction and ocular health was possible in most frail patients, independent of age, cognitive status, or communication disorders (Carcenac et al., 2009). It was also shown that the majority of older residents without ocular disease retain a good level of VA when their ocular refraction is properly adjusted. Combined together, these data indicate that an oculo-visual exam should be attempted for these patients without any pre-conceived idea of who can or cannot undergo such an exam and without any pre-conceived idea of the level of VA that is achievable. Research data have also shown that for frail elderly residents with dementia, regular charts with letters or numbers provided a higher level of VA compared to charts with drawings, tumbling E's or Teller cards (Chriqui et al., 2013). Hence, these regular charts should be used first, and others attempted in patients for whom these don't initiate a response. Research data indicated that LTC institutions are generally satisfied with the eye care services they offer to their residents even if they are provided on a per request basis, mainly outside the institution, not to all residents and not according to current recommendations (Kergoat et al., 2014). These results show that eye care services offered to this important segment of the older population are not optimal and that they could and should be improved.

### 3. Discussion

#### 3.1. Facilitators to the University-Based Program

Caring for older patients, including those who are institutionalized, and enrolling them in research protocols is not always an easy task and certainly requires the will and collaboration of all involved (Rolland, Resnick et al., 2014; Morley et al., 2014; Rolland, Tolson et al., 2014; Armstrong & Kergoat, 2015). Many factors have contributed to the development and implementation of the program described here. Certainly, the support received by the administration of the ÉOUM, on the importance of creating such a program, was vital to its implementation. The recognition by the hospital's administration of the importance of eye care for its patient population, budget allocation for the clinic, as well as its strong support in welcoming the professional services of optometrists have been equally vital to the program. The enthusiastic participation of all professionals with theoretical and clinical expertise in their respective areas of gerontology/geriatrics has made the creation and delivery of the geriatric optometry course possible. The clinical and research training of the supervising optometrist, together with the interprofessional and interdisciplinary exchanges made possible within the hospital and its research centre, have facilitated the integration of clinical optometric services within the hospital and have contributed to the creation and consolidation of research in aging/geriatric vision. The expertise of the hospital Ethic's Committee and clear understanding by its President of the importance of conducting research aimed at improving clinical practice for the frail elderly have been instrumental in facilitating research with patients. The understanding of the importance of research by the patients and/or their families, and their active participation has made various research initiatives possible. Finally, the funding received by granting agencies has confirmed the importance and relevance of this area of research in the clinical care of older adults and has ensured its feasibility.

#### 3.2. Future Developments

Although the university-based program described here has been efficiently developed and implemented, it needs to continue evolving, to consolidate its achievements and make further progress. The number of clinical rotations available to the students needs to increase so that future optometrists gain more experience in examining challenging frail elderly patients. A residency in geriatric optometry provided in an interdisciplinary context needs to be implemented to train optometrists with expertise in the field. A stronger core of faculty and clinical supervisors with expertise in geriatric optometry and clinical research needs to be developed to strengthen the program and enhance the students' education in the field. Research needs to be intensified to keep improving the quality of care offered to this growing segment of the elderly population. Finally, it is also critical, as echoed by numerous professions and leaders for decades, that professionals, professional organizations, board examiners, and state licensing boards make it mandatory for practitioners, here optometrists, to demonstrate their continual ability to care for this population, as well as facilitate their uptake of quality CE in gerontology/geriatrics.

### 4. Conclusion

In conclusion, the university-based program has allowed the training of optometry students for the special care

of older patients, including residents in LTCF, many of whom suffer from dementia, and the development of a research program in aging/geriatric vision to improve the quality of clinical services. The program needs to continue evolving so that more optometrists can reach out to care for older adults wherever they reside.

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