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Abstract
Population ageing is affecting all Western countries. In order to cope with this challenge, governments focus mainly on ageing in place. Detection of frail or vulnerable older people becomes essential in order to provide appropriate support and prevent adverse outcomes. In this article we review the main paradigms on detecting frail or vulnerable older people living in the community, examine the theoretical gaps and develop new research possibilities. While there is increasing literature on frailty and vulnerability in later life, both concepts are still developing. The key question is: to what extent the actual concepts of frailty or vulnerability are appropriate to detect frail/vulnerable community dwelling older persons? The different concepts trying to capture frailty and vulnerability are criticized. Conclusively, the article highlights the need for a new integrated conceptual model for detecting community dwelling frail or vulnerable older persons including physical, psychological, social and environmental variables.

Key words aging, detection, frailty, older people, vulnerability

A Theoretical Perspective on the Conceptualisation and Usefulness of Frailty and Vulnerability Measurements in Community Dwelling Older Persons

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Introduction

The proportion of older people is growing rapidly in all Western countries and increasing demands on health care with advanced aging can be expected. In order to cope with the challenges of an aging population, governments have changed their vision towards health care provision.[1] This change in vision is twofold. On the one hand, there is actually a prevailing belief among policymakers that an aging population inevitably means increasing demands on health care resources, social support, informal networks, etc.[2] On the other hand, academic research has demonstrated that older people themselves prefer 'aging in place'. They like to age in their own natural environment, often even if they are in need of long-term care, have economic difficulties or live in inadequate houses or deprived areas.[3,4] Ageing in place is chosen not only for economic, but also for social (e.g., neighbours) and contextual reasons (e.g., house, environment). Vulnerable older people are often reluctant to leave their community dwellings, even when it is difficult for them to manage the household chores, mostly because the familiar home environment provides them with a strong sense of meaning and belonging.[5]

In order to cope with the expected rise of financial demands and to meet the preferences of older people themselves, Belgium's policy has shifted towards deinstitutionalisation. Older people are invited to age in their own homes supported by formal and informal care. Institutionalisation

in a nursing home will become restricted to situations where it is really necessary.

A policy with a focus mainly on 'aging in place' creates new challenges. A first challenge is the provision of adequate home care from both formal and informal sources.[1] Formal care in Belgium is, like in many other countries, threatened by staff shortages.[6] Informal care is jeopardised by a globalization process where for instance people no longer work in their place of birth. As a consequence, family and friends no longer live in close range of older relatives, thus forcing older individuals to confront the risks of aging alone. Consequently, growing old evolves to an individual rather than a collective experience.[7] As a consequence, a network of community care services, both public and private, is needed in order to provide necessary care and to support informal care.[8,9]

A second challenge is the early detection of frail or vulnerable older people so that appropriate support can be provided and unnecessary adverse outcomes may be prevented.

Indeed, aging in place confronts older people with the limits of their own resources; their informal and formal care framework and of their living environment. If there's an imbalance between resources and demands, people can become frail or vulnerable.[10] In order to identify these limits and to ensure that adequate care is provided to the right persons in time, detection of these limits seems essential, but not obvious.

Research in Belgium, for instance, has demonstrated that despite Belgium's well developed social security system, 6.4% of the community dwelling older people needing care do not receive any care at all.[11] This points to the fact that the actual detection mechanisms to identify frail or vulnerable older people only partly succeeds. In Belgium two measures are used: the KATZ-scale and BEL-scale.[12] The KATZ scale is a derivative of the original KATZ-scale developed by Katz and colleagues in 1963 and is used in both community and residential care to assess the dependency of patients and to determine the amount of care level one is entitled to receive.[13] The BEL-scale is used to determine if an individual is entitled to receive an allowance of long term care insurance. Although the use of both scales can be appreciated, they apparently fail to detect all the dependent, frail or vulnerable older persons.[12] Moreover, as both scales only focus on health and care, other needs are undetected and uncovered.

In this article we aim to review the main paradigms on detecting frail or vulnerable older people living in the community, to examine the theoretical gaps and to develop new possibilities for research in this area. From the literature, two applicable concepts can be retained: the concept of frailty, developed from within medical sciences and the concept of vulnerability, which originates from social sciences. The rationale to suggest these concepts is obvious. There is a wide agreement that old age involves a period of increased vulnerability.[10,14,15] As a consequence, identifying vulnerable older people and understanding the causes and consequences of their vulnerability is of human concern and an essential task of social policy.[14] While there is increasing literature on frailty and vulnerability in later life and both concepts have their merits in research, they are still developing. The key question of this contribution is: to what extent the actual concepts of frailty or vulnerability are appropriate to detect frail/vulnerable community dwelling older persons? This article consists of four sections. In a first section, four types of approaches regarding frailty in old age are provided. These frailty concepts are criticized in a second section. In a third section, the concepts of vulnerability are elaborated. The different concepts trying to capture vulnerability are criticized in section four. Conclusively, the article highlights the need for a new integrated conceptual model for detecting community dwelling frail or vulnerable older persons including physical, psychological, social and environmental variables.

Frailty and Vulnerability in older people

Frailty concepts, an overview

The word frailty is derived from the Latin word fragilitatem, which means frailness, weakness. Frailty is an often-used concept by clinicians to detect and classify elderly.[16,17] The term "frail elderly" has been a Medline MeSH-term since 1991 and is defined as "older adults or aged individuals who are lacking in general strength and are unusually susceptible to disease or to other infirmity.[18] In this section, without claiming completeness, we explore some historical and recent definitions and concepts of frailty.

The concept of frailty first emerged at the end of the seventies. In 1978 the Federal Council on Ageing (FCA) in the United States, introduced the term frail elderly to describe a specific segment of the older population. The FCA defines frail elderly as,

> "persons, usually but not always, over the age of 75, who because of an accumulation of various continuing problems often require one or several

> supportive services in order to cope with daily live". [19 p1]

In the 80s, frailty was associated with disability, the presence of chronic illness, old age and usage of geriatric services.[17] Later, more and more scholars became interested in the concept. Based on a review of Aminzadeh, Gobbens and colleagues found 17 different conceptual definitions of frailty.[19] According to Grenier[20] the way frailty is conceptualized and interpreted has profound implications for social responses, care practices and personal experiences of care. Moreover, researchers, policy makers, administrators and health care providers generally agree that frailty can have an important impact on affected individuals, their families (particularly those involved in care-giving), the health care system and society as a whole.[18] Karunanathan's[21] extensive literature review provided no signs of any consensus about the frailty concept. Moreover, roughly four types of conceptualizations of frailty can be distinguished: biomedical, bio-psychological, bio-psycho-sociological and integrative models. These four types will be explored in the next section.

A first conceptualisation of frailty is characterized by a purely biomedical approach. Frailty is seen as a collection of biomedical factors influencing an individual's physiological state and thereby reducing the individual's capacity to withstand environmental stress.[22] In this approach, frailty is measured by detecting physical problems. A wide range of physical problems have been linked to frailty: gait speed[23,24], a three meter walk test[25], a stand up test[24,25], endurance[26-28], weakness[26,27], reduced physical activity[26,27], weight loss[26,27], mobility[28], exhaustion[18], cardiac functioning[29], grip strength[25], balance[28], strength[28], slowness[18], neuromotor performance[28], sarcopenia[18,29], pulmonary peak flow[25] or lung functioning[29], renal and immune senescence[29].

Some scholars like Markle-Reid[30] and Hogan[17] criticized the lack of psychological or cognitive factors in assessing frailty. In order to meet these expectations, psychological or cognitive factors were added to the biomedical components.[31] These frailty models can be considered as bio-psychological. Puts and colleagues for example, measures the physical functioning but adds psychological markers such as cognition, mastery and depression in order to capture frailty.[32] Bravell and colleagues bring up anxiety, sadness, cognitive deficiency and management capacities as psychological variables besides the functional status of the individual.[33]

Besides the biomedical and bio-psychological, a third approach consists of the inclusion of social factors in addition to biomedical and psychological factors and thereby pointing to the interplay of bio-psycho-social factors in frailty.[34] The Edmonton Frailty Scale[35] for example uses social support besides cognition, general health status, functional independence, medication use, nutrition, mood, continence and functional performance in order to detect frail elderly.

At last, some conceptual models make an attempt to be integrative, as they aim to apprehend all four domains of functioning, i.q. physical, cognitive, social and psychological. The Groningen Frailty indicator[36] and the Tilburg Frailty indicator[37] can be classified among these models. The Groningen frailty indicator, consists of a physical (nine items), cognitive (one item), psychological (two items) and social (three items) dimension. The social dimension is measured by exploring respondents' experiences with emptiness, abandonment and missing people in their inner circle. The Tilburg Frailty Indicator[37] consists of eight physical measurements, four psychological components and three social components. The social component is captured by three questions: do you live alone, do you sometimes wish you had more people around you and do you receive enough support from other people.

Frailty: A critical insight

Although it's hard to deny that frailty research has it merits in research, there is still the emerging problem of a lack of consensus.[21] Moreover, the different approaches of frailty are criticized[20] as they are often based on a negative and stereotypical view of aging associated with becoming disabled[30], lack of hope[38] and loss or declining abilities[39]. Thereby they neglect the lived experiences of each individual[20], assuming that aging is a uniform process[39]. Walston recommends to go beyond the physical aspects of frailty[40] and according to Gobbens[41], addressing frailty exclusively on physical components jeopardises the attention for the individual as a whole.

Markle-Reid points to the fact that frailty is a multidimensional non age related concept that must consider the interplay of various physical, psychological, social and environmental factors. The fact that much biomedical research on frailty demonstrates great variations in frailty according to gender, socio-economic status, education, etc points to the social production of frailty.[30]

While some authors have elaborated their frailty instrument in an attempt to meet the aforementioned critiques (e.g.,

Groningen Frailty indicator, Tilburg Frailty Indicator), environmental aspects of frailty are still ignored. To our notice, only the operationalization of Nourhashémi[42] includes all domains as proposed by Markle-Reid[30]; a combination of biological, physiological social and environmental indicators. In such an approach, frailty shifts from a micro-level analysis focussing on the individual only to a macro-level analysis, where frailty is seen as a result of numerous intersecting factors, many of which are external to the individual. Additionally, some scholars[20] suggest to take the subjective perceptions of an individual into account, the so called lived experience. For example, social isolation, inadequate care and support[38] and living arrangements[43] are risks associated with aging, but all these factors can have both mutual and individual antecedents and are experienced in different ways.

Beside the criticism on the operational definition of frailty, some scholars expressed their concerns about the medicalization of aging due to the use of frailty measurements. For Robertson[44], the biomedicalization and gerontologization of old age is being reconceptualised as a new medical space requiring new supporting ideologies which protects the new created space, with over servicing as a consequence, and requiring new customers. As a consequence, the socially constructed dependency of older adults serves those structural interests.[44] Using functional and ill-health variables tends to a medical construction where older people are placed into classes (e.g. non frail, pre frail, frail, severely frail) and the distinction between normal and not normal is made. Those assigned with the status of frail become eligible for public and home-care services.[20] Not only does this approach overlook the social and emotional experiences, it also places elderly in competition with each other for the scarce resources.[39]

Kaufman[39] argues that frailty, constructed from within a health-care context, transforms the older people's lived and experienced problems to diagnosis, then to treatment plans and rules about what ought to be done, leading to negotiated compliance. This view ignores the role of the broader environment and neglects the cumulative disadvantages build up during the lifespan.[20] The implementation of frailty has no preventive aims, but corresponds with an increased professionalism and efforts to ration care and thereby neglecting government initiatives to include older people in the society. Problems of aging are reduced to an individual level, moving responsibility from the government to the individual.[45] As a consequence, the problem of frailty is depoliticized.

Frailty is a syndrome in older people which can be identified in clinical practice and in the community (46). However, only two instruments, the Tilburg Frailty Indicator[9,37] and the SHARE Frailty Index (26) are potentially suitable as screening instrument in primary health care but require validation in larger studies in primary health care settings.[47] In our opinion, broadening biomedical conceptual models with physical or social factors is a good attempt, but often ignores the preponderance of biomedical indicators. The reason for this dominancy lays in the medical origins of frailty. In developing the Clinical Global Impression of Change in Physical Frailty (CGIC-PF),[28] it was found that when clinicians were asked to rate the different factors of frailty, they rated mobility, stamina, and activities of daily living as most important and social and psycho-emotional factors as least important.

Some scholars point to the social construction of frailty (48). Therefore, in order to remain in the community, older individuals also rely on aspects in their social, psychological and physical resources. Consequently adjusting the frailty measures for home-care clients to a bio-psycho-social or more integrative approach may prove valuable (49). Furthermore, although social science literature acknowledges the merits of the frailty measurements in order to identify patient problems, it also points at a conflict between the biomedical conceptualisation and the older people's experiences. When older women were asked how they perceive frailty, most of the answers were not only linked to physical descriptions (being small, skinny, etc), but also to contextual, social and emotional problems, suggesting that elderly themselves have other definitions about frailty than clinicians (20).

Vulnerability

As mentioned in the previous section, the micro-level conceptualisation of frailty overlooks crucial aspects of lived-experiences when aging. These lived-experiences can only be understood by turning to other discourses then frailty.[20] Moreover, for each individual, the aging process takes place in a specific context, which is also ignored in frailty. In this section, we will elaborate on the concept of vulnerability, in order to determine whether it's a valuable alternative for frailty.

The word vulnerability is derived from the Latin word vulnerare, which means "to wound". In other words, vulnerability can be defined as "the capacity to be wounded". Vulnerability as a concept first emerged in the environmental sciences for the study of human impacts of

natural disasters,[14] and several scholar have tried to define vulnerability. Chambers was the first to describe vulnerability as "the exposure to contingencies and stress, and difficulty coping with them".[50 p1] Schröder-Butterfill describes vulnerability in old age as the interplay between biological and social threats, individual characteristics and resources, social relationships and wider economic, political and cultural structures, which are taking place on four domains; exposure (e.g. socio economic or marital status, region one lives in), threats (e.g. declining health, income loss), coping and outcomes.[14] Coping capacities are those individual capacities build up during the lifespan including wealth, social network and formal social protection which enables the older person to face the challenges. The outcomes are seen as the result of the whole process and include lack of healthcare, insecurity, social isolation, poverty, etc.

Grundy also points to coping in vulnerability and describes vulnerable elders as "those whose reserve capacity falls below the threshold needed to cope successfully with the challenges that they face".[10 p107] In this view, each individual ages with a build-up reserve capacity (income, material resources, family support, social support and health). If the challenges older people face exceeds these reserves, they become vulnerable. Crooks tries to capture both a lifespan and network approach by defining vulnerability as the end result of a cumulative process depending on the resources, including the networks older people have.[7] A lifespan approach is also found with Moser[51] as he describes labour, human capital/health, productive assets, household relations and social capital as assets against vulnerability.

Shi and Stevens' model has three dimensions on both an individual and an ecological level.[52] On the individual level, the predisposing factors include age, gender and health. The enabling factors are socio-economic status, human capital and mediating factors like access to healthcare and social protection and needs are defined as illness, poverty, lack of income. On an ecological level, the predisposing factors include demographic components, location, political, legal and economic systems, the enabling socio-economic status of the community and quality of the environment. Ecological needs are described as trends in health care status, mortality rates and age discrimination. Important in this model is that all factors influence vulnerability by interaction or convergence. As a consequence, vulnerability does not only represent personal deficiency but is also a result of multiple risks. Although developed for natural hazard vulnerability, the model of Schneiderbauer and Ehrlich contains an interesting social perspective.[53] Social vulnerability is linked at different social levels: individual, household, administrative community, cultural community, national and regional. For each level, parameters were developed in order to measure the vulnerability at the different levels. This model emphasizes the complexity of social vulnerability by suggesting that vulnerability is multi-layered, but also potentially cumulative on different social levels.[53] In a more recent approach vulnerability is measured via communication with others, living situation, social support and social activities, leisure activities, personal perceptions, socioeconomic status and the use of Ryff scales.[54] Ryff scales measure multiple facts of psychological well-being like autonomy, environmental mastery, personal growth, positive relations with others, purpose of life and self-acceptance.[55]

Critique of the vulnerability models

Although the vulnerability concept has it merits in research, it also lacks a consensus as many authors are seeking an operational definition.[56]

Some models derived from hazard research and implemented in social sciences adequately describe the social oriented complexity of vulnerability by capturing it on different levels, demonstrating its potential cumulative character. In contrast, the practical use in order to detect community dwelling older individuals is questionable. Sometimes variables like age and gender are used in order to detect vulnerability. Scholars following this approach must be very cautious not to assess vulnerable older people from a stereotype point of view.

As some models include illness, disease and disability in order to measure vulnerability, they tend to frailty measurements from a biomedical point of view and to a normal not normal debate disregarding an individual's coping capacities. For example, although an older person with a 20 year old paralysis of the right arm can be perceived as vulnerable by experts opinion, it's is possible he managed to cope with this paralysis and the vulnerability becomes less evident. With this example we elaborate our fourth critique regarding the actual vulnerability approaches. In order to capture the lived experiences of older persons and their assets/coping strategies, some scholars introduce terms like human and social capital, which are all operationalised differently. One might wonder whether those operationalisations really enclose the lived experiences of older people. Fifth, to our notion, the psychological well-being of older persons which is reluctantly introduced in the frailty concept

is underrepresented in most vulnerability approaches. Finally, some models try to capture the environmental living conditions. These measurements are often based on community, region or national level and thereby neglecting the lived-experiences of individuals in their environment. Moreover, the Belgian Ageing Studies[4] demonstrate that there are substantial differences, not only between individuals, but also between communities and regions. For example, De Witte et al.[11] demonstrated differences in the experienced care shortages between older persons living in rural regions or in cities. These findings suggest taking these individual, local and regional differences into account.

Discussion and conclusion

This paper examined frailty and vulnerability as approaches to detect older people in need. Based on the literature it can be concluded that both frailty and vulnerability have their merits in research. Because models of frailty and vulnerability are still in development and therefore incomplete, instruments based on these models only partly succeed in the detection of frail or vulnerable community dwelling older persons. On the one hand, the paper demonstrates that frailty is a concept dominated by medical science, disregarding the social and environmental context in which older people age. On the other hand, vulnerability tries to capture this context, but fails to do so on an individual level as environmental conditions are often measured on a regional level.

As a consequence, with population aging and aging in place as future challenges in mind, a new useful integral conceptual model for frail/vulnerable community dwelling older persons is needed and subsequently a related comprehensive and feasible instrument capable of detecting them.

First, this model must include all four domains of human functioning (i.e., physical, social and psychological functioning) and the quality of the broader environment in which this functioning takes place. In doing so, each domain should receive equivalent attention, thereby abandoning the prevailing preponderance of physical aspects. Second, it must acknowledge the complex interplay from both physical, psychological, social and environmental factors, thereby following Markle-Reid's point of view of the multidimensionality of frailty and vulnerability (30). As Schröder-Butterfill[14] stated, older people can currently be confronted with poor-quality housing and changing social networks on top of their health problems, which all can influence their well-being. As a consequence, the social network an elderly can rely on should be included as well, as suggested by Crooks.[7] Expanding the conceptual model beyond biomedical variables will withstand Robertson's remarks regarding medicalisation and gerontologisation of old age. Third, it is essential that the model comprises the lived experiences of the older persons themselves. As Kaufmann stated, the often reductionist and uni-dimensional view of clinicians may not be the true reflection of the lived experience and cannot capture the individual complexity of frailty.[39] As frailty may have a serious impact on ones quality of life,[57] it also requires taking the subjective perceptions of individuals into account. Fourth, the model necessitates rejecting the ubiquitous thought that frailty is age related[58] and approaching older persons as other individuals and not as dismantling human beings. Fifth, the new model must acknowledge that frailty can originate from life course determinants, which points to cumulative disadvantages build up during life. Finally, the conceptual model should clearly show the interactions within the domains of frailty as well as between frailty and other relevant factors.

On the basis of this conceptual model, an instrument can be developed for the broader detection of frailty in community dwelling older people. Using such an instrument will uncover the real needs of aging individuals on the different domains of human functioning and their environment instead of categorisation into frail-no-frail. This will, in our opinion, empower governments' policy of focussing on aging in place. Individuals are stimulated to age in their own environment, but they can be assured that if problems arise, these will be detected and remediated. Moreover, governments can gain a clear picture of what type of care or support is required and as a consequence, act upon adequately. In that way, successful aging in place can be optimised.

References

1.de Gooijer W. Trends in EU health care systems. New York: Springer, 2007.

2.Bond J, Cabrero G. Health and Dependency in Later Life. Ageing in Society: European perspective on gerontology. London, California, New Delhi: Sage, 2007; 113-41.

3.Means R. Safe as houses? Ageing in place and vulnerable older people in the UK. Social Policy & Administration 2007;41:65-85.

4.Verté D, De Witte N, De Donder L. Schaakmat of aan zet. Monitor voor lokaal ouderenbeleid in Vlaanderen. Guidelines for Local Policy Towards Older People in Flanders. [In Dutch] Brugge: Vanden Broele, 2007.

5.Wahl H, Scheidt R, Windley P KWS. Annual Review of

gerontology and geriatrics. Focus on aging in context: Socio-physical environments. New York: Springer, 2004.

6.Onkelinx L. Aantrekkelijkheid van het verpleegkundige beroep. Attractiveness of the nursing profession. Brussels: Ministerie van Sociale zaken en Volksgezondheid. Ministry of Social Affairs and Health, 2008.

7.Crooks D. Development and Testing of the Elderly Social Vulnerability Index (ESVI): A Composite Indicator to Measure Social Vulnerability in the Jamaican Elderly Population. Miami: Florida International University, 2009.

8. Wilmoth JR. Increase of Human Longevity: Past, Present and Future. The Japanese Journal of Population 2011;9(1):155-61.

9.Bonsang E. Does informal care from children to their elderly parents substitute for formal care in Europe? Journal of Health Economics 2009;28(1):143-54.

10.Grundy E. Ageing and vulnerable elderly people: European perspectives. Ageing & Society 2006(26):105-34.

11.De Witte N, Buffel T, De Donder L, Dury S, Verté D. Care Shortages in Later Life: The Role of Individual and Contextual Variables in Flanders, Belgium. International Journal of Social Sciences and Humanity Studies 2010;2(1):111-8.

12.Willemé P. The Long-Term Care System for the Elderly in Belgium. ENEPRI Research Report n°70. 2010. Available from URL: http://www.ancien-longtermcare.eu/node/27. Accessed on 1 December 2011.

13.Pepersack T. Evaluatie instrumenten voor een globale geriatrisch beoordeling. Belgian Minimum Geriatric Screening Tools for Comprehensive Geriatric Assessment. College voor Geriatrie, 2004.

14.Schröder-Butterfill E, Marianti R. A framework for understanding old-age vulnerabilities. Ageing and Society 2006;26(1):9.

15.Joseph AE, Cloutier-Fisher D. Ageing in rural communities: Vulnerable people in vulnerable places. In: Andrews G (Eds.).Ageing and Place: Perspectives, Policy and Practice. London: Routledge Studies in Human Geography, 2005.

16.Gobbens RJJ, Luijkx KG, Wijnen-Sponselee MT, Schols JMGA. In Search of an Integral Conceptual Definition of Frailty: Opinions of Experts. Journal of the American Medical Directors Association 2010;11(5):338-43.

17.Hogan DB, MacKnight C, Bergman H. Models, definitions, and criteria of frailty. Aging Clin Exp Res 2003;15(3 Suppl):1-29.

18.Bergman H, Ferrucci L, Guralnik J, et al. Frailty: An Emerging Research and Clinical Paradigm—Issues and Controversies. The Journals of Gerontology Series A: Biological Sciences and Medical Sciences 2007;62(7):731-7.

19.Gobbens RJ, Luijkx KG, Wijnen-Sponselee MT, Schols JM. Toward a conceptual definition of frail community dwelling older people. Nursing Outlook 2010;58(2):76-86.

20.Grenier A. Constructions of frailty in the English language, care practice and the lived experience. Ageing and Society 2007;27(3):425-44.

21.Karunananthan S, Wolfson C, Bergman H, Béland F, Hogan DB. A multidisciplinary systematic literature review on frailty: Overview of the methodology used by the Canadian Initiative on Frailty and Aging. BMC Medical Research Methodology 2009;9(1):68.

22.Lally F, Crome P. Understanding frailty. Postgraduate Medical Journal 2007;83(975):16-20.

23.Abellan van Kan G, Rolland Y, Bergman H, Morley J, Kritchevsky S, Vellas B. The I.A.N.A Task Force on frailty assessment of older people in clinical practice. J Nutr Health Aging 2008;12(1):29-37. Epub 2008/01/01.

24.Gill TM, Baker DI, Gottschalk M, Peduzzi PN, Allore H, Byers A. A Program to Prevent Functional Decline in Physically Frail, Elderly Persons Who Live at Home. New England Journal of Medicine 2002;347(14):1068-74.

25.Rosero-Bixby L, Dow WH. Surprising SES Gradients in Mortality, Health, & Biomarkers in a Latin American Population of Adults. The Journal of Gerontology Series B: Psychological Sciences and Social Sciences 2009;64B(1):105-17.

26.Romero-Ortuno R, Walsh CD, Lawlor BA, Kenny RA. A Frailty Instrument for primary care: findings from the Survey of Health, Ageing and Retirement in Europe (SHARE). BMC Geriatrics 2010;10(1):57.

27.Fried LP, Ferruci L, Darer J, Williamson J, Anderson G. Untangling the Concepts of Disability, Frailty, and Comorbidity: Implications for Improved Targeting and Care. Journals of Gerontology - Biological Sciences and Medical Sciences 2004;59(3):255-63.

28.Studenski S, Hayes RP, Leibowitz RQ, et al. Clinical global impression of change in physical frailty: development of a measure based on clinical judgement. Journal of the American Geriatrics Society 2004;52(9):1560-6.

29.Vaes B, Pasquet A, Wallemacq P, et al. The BELFRAIL (BFC80+) study: a population-based prospective cohort study

of the very elderly in Belgium. BMC Geriatrics 2010;10(1):39.

30.Markle-Reid M, Brown G. Conceptualizations of frailty in relation to older adults. Journal of Advanced Nursing 2003;44(1):58.

31.Monteserin R, Brotons C, Moral I, et al. Effectiveness of a geriatric intervention in primary care: a randomized clinical trial. Family Practice 2010;27(3):239-45.

32.Puts M, Lips P, Deeg D. Static and dynamic measures of frailty predicted decline in performance-based and self-reported physical functioning. Journal of Clinical Epidemiology 2005;58(11):1188-98.

33.Bravell M, Westerlind B, Midlöv P, et al. How to assess frailty and the need for care? Report from the Study of Health and Drugs in the Elderly (SHADES) in community dwellings in Sweden. Archives of Gerontology and Geriatrics 2011;53(1):40-5.

34.Nicholson C, Meyer J, Flatley M, Holman C. The experience of living at home with frailty in old age: A psychosocial qualitative study. International Journal of Nursing Studies. Available online 3 February 2012. 2012(0).

35.Rolfson DB, Majumdar SR, Tsuyuki RT, Tahir A, Rockwood K. Validity and reliability of the Edmonton Frail Scale. Age and Ageing. 2006;35(5):526-9.

36.Steverink N, Slaets JPJ, Schuurmans H M: Lv. Measuring Frailty. Development and testing of the Groningen Frailty Indicator (GFI). Gerontologist 2001;41:236-7.

37.Gobbens RJ, van Assen MA, Luijkx KG, Wijnen-Sponselee MT, Schols JM. The Tilburg Frailty Indicator: Psychometric Properties. Journal of the American Medical Directors Association 2010;11(5):344-55.

38.Brown DAV. Sociodemographic Vulnerability in the Caribbean: an Examination of the Social and Demographic Impediments to Equitable Development with Participatory Citizenship in the Caribbean at the Dawn of the Twenty-first Century. Retrieved november 15, 2010. Available from URL: http://www.cepal.org/publicaciones/xml/2/20812/L0026.pdf. Accessed on 15 November 2010.

39.Kaufman SR. The social construction of frailty: An anthropological perspective. Journal of Aging Studies 1994;8(1):45-58.

40.Walston J, Hadley EC, Ferrucci L, Guralnik JM, Newman AB, Studenski SA, et al. Research agenda for frailty in older adults: toward a better understanding of physiology and etiology: summary from the American Geriatrics Society/ National Institute on Aging Research Conference on Frailty in Older Adults. J Am Geriatr Soc 2006;54(6):991-1001.

41.Gobbens RJ, Luijkx KG, Wijnen-Sponselee MT, Schols JM. Toward a conceptual definition of frail community dwelling older people. Nursing Outlook 2009;58(2):76-86.

42.Nourhashémi F, Andrieu S, Gillette-Guyonnet S, Vellas B, Albarède JL, Grandjean H. Instrumental Activities of Daily Living as a Potential Marker of Frailty. The Journals of Gerontology Series A: Biological Sciences and Medical Sciences 2001;56(7):M448-M53.

43.Gavrilov LA, Heuveline P. Aging of Population: The Encyclopedia of Population. Retrieved November 25, 2003. Available from URL: http://longevity-science.org/Population_Aging.htm. 2003. Accessed on 25 November 2010.

44.Robertson ANN. Beyond Apocalyptic Demography: Towards a Moral Economy of Interdependence. Ageing & Society 1997;17(04):425-46.

45.Raphael D, Cava M, Brown I, Renwick R, Heathcote K, Weir N, et al. Frailty: a public health perspective. Can J Public Health 1995;86(4):224-7. Epub 1995/07/01.

46.Bergman H, Béland F, Karunananthan S, Hummel S, Hogan D, Wolfson C. Development of a framework for understanding and studying frailty. Gerontologie et Societe 2004;109(2):15-29.

47.Pialoux T, Goyard J, Lesourd B. Screening tools for frailty in primary health care: A systematic review. Geriatrics & Gerontology International 2012;12(2);189-97.

48.Lustbader W. Thoughts on the meaning of frailty. Generations 2000;23(4):21-4.

49.Armstrong JJ, Stolee P, Hirdes JP, Poss JW. Examining 3 frailty conceptualizations in their ability to predict negative outcomes for home-care clients. Age & Ageing 2010;39 (6);755.

50.Chambers R. Vulnerability: How the Poor Cope. IDS Bulletin 1989;20(2):1-7.

51.Moser CON. Reassessing urban poverty reduction strategies: The asset vulnerability framework. World development 1998;26(1):1-19.

52.Shi L, Stevens D, Pegah F. Rethinking Vulnerable Populations in the United States: An Introduction to a General Model of Vulnerability. Harvard Health Policy Review 2008;9(1):43-8.

53.Schneiderbauer SDE. (eds.) Social Levels and Hazard (In)

dependence in Determining Vulnerability. Tokyo: United Nations University Press, 2006.

54.Andrew MK, Rockwood K. Social vulnerability predicts cognitive decline in a prospective cohort of older Canadians. Alzheimer's and Dementia 2010;6(4):319-25.

55.Seifert TA. The Ryff Scales of Psychological Well-Being. 2005 [Mars 28th 2012]; Available from URL: http://www.liberalarts.wabash.edu/ryff-scales/. Accessed 28 March 2012.

56.Alwang J, Siegel PB, Jorgensen SL. Vulnerability: A View From Different Disciplines. Washington: Social Protection Unit Human Development Network The World Bank, 2001.

57.Walker A. A European perspective on quality of life in old age. European Journal of Ageing 2005;2(1):2-12.

58.Baars J. Philosophy and Aging. In: Cole T, Ray R, Kastenbaum R, editors. A Guide to Humanistic Studies in Aging. Baltimore: Johns Hopkins University Press, 2010.

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3

Abstract
Drawing upon the developing literature on dispositive analysis, we examine the effects of pharmaceutical industry discourse on the subjectivities of nurse opinion leaders in the field of Multiple Sclerosis (MS) who have taken on the role of advocates of disease modifying therapy. Specifically, we draw attention to the '*technologies of the self*' MS nurse opinion leaders engage in as they promote the financial interests of the pharmaceutical industry. Accordingly, we demonstrate how the *ordering* of the management and treatment of people with MS regulates the time, activities, and actions of nurse opinion leaders to promote disease modifying therapy despite less than convincing evidence for its efficacy and cost-effectiveness. By focusing our description on the '*self-technologies*' nurse opinion leaders in the field of MS engage in, we problematize the relationship between the pharmaceutical industry and nursing.

Key Words instrumentality, knowledge (*savoir*), pharmaceutical industry, subjectivation, '*technologies of the self*'

'Technologies of the Self' as Instrumentality: Becoming Instruments of the Pharmaceutical Industry through Normative Practices

RUSLA ANNE SPRINGER & MICHAEL E. CLINTON

Introduction

The primary focus of this paper is on how the subjectivities of opinion leaders among Multiple Sclerosis (MS) nurses become ordered in regularities of time, activities and actions that promote the interests of the pharmaceutical industry through participation in discursive practices that assume uncritically the efficacy and cost-effectiveness of disease modifying therapies. The paper draws upon a Foucauldian dispositive analysis of the discursive effects of pharmaceutical industry discourse on nurse subjectivities which revealed the '*technologies of the self*' nurses engaged in to modify themselves to become both object and subject of the pharmaceutical industry.[1] Our starting point is the following quotation in which Foucault clarifies how we are to understand 'ordering':

> …an order reigns in the simple sense of a never ending, permanent regulation of time, activities, and actions: an order which surrounds, penetrates, and works on bodies, applies itself to their surfaces, but which equally imprints itself on the nerves, and what someone called the "soft fibers of the brain". An order, therefore, for which bodies are only surfaces to be penetrated and volumes to be worked on, an order which is like a great nervure of prescriptions, such that bodies are invaded and run through by order.[2 p2]

In the early 1990s three classes of interferons (Avonex, Betaseron and Rebif), and glatiramer-acetate (Copaxone), collectively known as the disease modifying therapies (DMTs), were heralded into the marketplace as new '*breakthrough*' therapies that claimed to alter the fundamental course of MS by reducing disease activity and burden. However, despite extraordinary cost and the

elusiveness of long term protection from disability [3 - 13] the promulgation of the effectiveness of these therapies in the treatment of MS persists. Our empirical clarifications will bring out the relevance of Foucault's notion of order to demonstrate the subjectivation of MS nurse opinion leaders, and to reveal how they may be implicated in the drive of the pharmaceutical industry for evermore widespread use of DMTs. However, no grand narrative is intended, and we do not claim that every nurse opinion leader is subjectivized in the same way, or to the same extent. Rather, our more modest claim is that some opinion leaders among MS nurses are subjectivized in ways that perpetuate an unquestioned discourse about the advantages of DMT in the management and treatment of patients with MS.

We define MS nurse opinion leaders (NOLs) as those nurses in the field who are selected by the manufacturers of DMTs to play key roles at industry sponsored conferences and events and otherwise to engage in the education of MS nurses in the use of DMTs. Nurse opinion leaders are recruited following the direct observation of nurses who speak at company sponsored conferences and events about the treatment, care and monitoring of MS patients. Nurses who show sufficient affinity with DMT discourse are seduced into taking on leadership roles to facilitate a wide assortment of discursive mechanisms aimed at expanding the market for DMTs. For example, nurses may be approached and asked to speak at other conferences. They may also be asked to develop standard patient care plans and other similar materials for use by other MS nurses, or by patients. They might even be asked to host mini conferences or other educational events at their practice settings. Financial inducements in the form of honoraria are typically offered in return. Although the amounts involved are small in comparison to those paid to physicians, they are usually sufficient to encourage interest and maintain motivation.

Pharmaceutical company representatives are another source for the recruitment of NOLs. Nurses who are identified as suitable for further training and for taking on NOL roles are groomed by company representatives and encouraged to attend industry sponsored Speaker Training Bureaus and other like indoctrinating continuing education initiatives where further engagement of their interest can be developed. Although the NOLs actively engaged in promoting the interests of the manufacturers of DMTs are our main focus, we refer to MS nurses as well because they are the wider group from which NOLs are recruited by the pharmaceutical industry.

Theoretically speaking: Dispositive or apparatus?

Before continuing, we need to say something about our use of the term, dispositive analysis. What, it may be asked, is 'dispositive analysis'? And why do we prefer this formulation, which may at first sight seem somewhat idiomatic, to the more common translation of Foucault's 'dispositif' as 'apparatus'? We offer two points in our defense. First, far from being idiomatic the term 'dispositive analysis' is used increasingly in the secondary and tertiary literature on Foucault and discourse analysis. A simple Google search will return more than two million hits in a fraction of a second. A common characteristic of this literature is a preference for '*dispositive*' over 'apparatus' when translating the French, '*dispositif*' into English.

Our argument from common usage is sufficient for us to avoid accusations of idiomaticity. However, there is a more conceptual reason for our preference for 'dispositive'. Bussolini[14] has noticed that the appearance of new lectures by Foucault in translation has brought to attention a previously unnoticed conceptual distinction that has for the most part been passed over without comment in the secondary literature on Foucault's researches, writings and conversations. For Bussolini[14] there are strong reasons to favor the use of '*dispositive*' over 'apparatus' when translating the French '*dispositif*', or its Italian equivalent '*dispositivo*', into English. The problem with rendering '*dispositif*' as '*apparatus*' is that this translation collapses distinct etymological, and therefore conceptual lineages in French and Italian, thereby creating something of a false identity in English. Bussolini[14] points out that Foucault was careful to differentiate between '*appareil*' (*apparatus*) and '*dispositif*' (*dispositive*) when writing about power relations in *The History of Sexuality*. At this stage in his researches, Foucault used 'appareil' to refer to State and state affiliated power, and 'dispositif' to refer to the wider and changing relations of power that function beyond the State through normalization, law and control rather than punishment.[14] State systems and mechanisms of power conceived as 'appareil' are therefore a subset of wider relations among forces. In other words, to over simplify, to conflate '*appareil*'' with '*dispositive*' is to mistake a part for a whole, and to fix a conception of the wider relations, institutions, and practices of power in a less dynamic and strategic form than Foucault intended.[14]

Foucault's usage of '*dispositif*' in this sense was made clear in a conversation with Alain Grosrichard.[15] When asked specifically about the meaning or methodological function of the term '*dispositif*', inserted parenthetically immediately following the translators' "*apparatus*', Foucault replied:

> What I'm trying to pick out with this term is, firstly, a thoroughly heterogeneous ensemble consisting of discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral and philosophical propositions – in short, the said as much as the unsaid.[15 p194]

Our dispositive analysis is therefore focused on bringing

to the fore that heterogeneous ensemble that conditions DMT discourse, the institutions that produce it (science and scientific research, market economics, medical education, clinical practice, and consumer empowerment); and the organizations that are the sites for practice, (research laboratories, the pharmaceutical industry, medical and nursing schools, and sites of clinical practice). This focus on the non-discursive as well as the discursive permits us to bring to light the 'unsaid' in the management and treatment of people with MS. More particularly, our approach enables us to problematize the involvement of NOLs in promoting DMTs as an indispensable response to the urgent need to find more effective treatments for people with MS while serving the dominant strategic function of BigPharma profitability.

We use dispositive analysis, analysis of the dispositive; that is, our analysis of the wider formation that produces the discursive effects of pharmaceutical industry, to problematize the subjectivities of nurses engaged in uncritically promoting DMTs as effective in the management and treatment of MS.[1] Consequently, this paper unravels and reveals the '*technologies of the self*' NOLs as subjects engage in to modify themselves by what they know as they become both object and subject in DMT discourse. Using specific examples, the '*technologies of the self*' nurses as subjects apply to themselves as they become '*expert thought leaders*' and '*key opinion leaders*'[16] for the pharmaceutical industry will be made visible. At the same time, and importantly, we examine what these nurses, as agents of the pharmaceutical industry, want to become as subjects in the sense of the kind of clinicians, professional leaders and patient advocates they aspire to be. By revealing the performances NOLs engage in to become objects and subjects of DMT discourse, we demonstrate how 'BigPharma' works towards the imposition of social uniformity on the practices of health providers to achieve its fiduciary goals.

Raising ethical questions about the omnipresence of 'BigPharma'

The concerns we advance about NOLs in the field of MS raise ethical questions about the increasing presence and influence of the pharmaceutical industry in healthcare practice generally, despite over a decade of radical criticisms of its omnipresence and questionable practices by ethicists[17-20], economists[21] healthcare providers[22-26] and a number of other social commentators[27-38]. Our intention is to raise awareness among MS nurses, and the profession of nursing as a whole about the insidious infiltration of the pharmaceutical industry into nursing practice.[39-42] Our paper is intended to break the conspicuous silence on this topic on the part of the profession of nursing[25] as is reflected in the dearth of nursing literature available on the relationship between the pharmaceutical industry and nursing. Of the literature that is available, there is very little expressing concern about the role the pharmaceutical industry plays in influencing nursing practice and nursing behavior.[39] However, as nurses increasingly acquire prescriptive authority in their expanding roles as nurse practitioners, a deeper understanding of nursing's relationship with the pharmaceutical industry, and the effects of those relationships on the subjectivities of nurses is required.

Uncritical acceptance

Based on the empirical work that is available on pharmaceutical industry's infiltration into the practice of nursing, it appears that nurses accept promotional material produced by the pharmaceutical industry, sometimes with the assistance of nurses, uncritically.[39] This disconcerting finding suggests that nurses are ill prepared to deal effectively with the tactics and strategies the pharmaceutical industry engages in to promote its products. This lack of insight into these seemingly benign strategies and tactics positions nurses as extremely vulnerable to exploitation. As Thomas Beauchamp and James Childress[43] argue, the pressure for drug companies to find positive results of new medicines positions nurses as particularly vulnerable when working in industry sponsored research environments. In situations such as these, much of nurses' vulnerability stems from their relative meager training in pharmacology, statistical inference, and critical appraisal.[39]

Of particular relevance is that nurses generally have a poor understanding of the marketing and persuasion strategies used by the pharmaceutical industry.[39] As such, this paper attempts to remedy these knowledge deficits by increasing nurses' awareness of the mechanisms of persuasion employed by the pharmaceutical industry to achieve its goals. Moreover, the paper also represents an attempt to prevent, or at a minimum, to disturb the imposition of social uniformity upon the human practice of nursing by opening up a much needed space for dialogue about the place wealth creation occupies in the delivery of human care.

What follows is an overview of Foucault's conceptualizations of '*the subject*' '*subject positions*', '*subjectivation*' and '*subjectivity*', which will serve to provide the necessary theoretical foundation for the exploration of the '*technologies of the self*' the subject applies to itself to become an instrument of the pharmaceutical industry. The review of these conceptualizations will also provide the foundation for the exploration of what subjects actually do to themselves in terms of the regulation of their time, their activities, and their actions as they shape themselves into objects of instrumentality for the pharmaceutical industry; and importantly, as they shape themselves into the subjects they wish to become. By demonstrating what subjects actually do

to themselves to transform themselves into objects consistent with what the pharmaceutical industry requires it can be shown that an order, in Foucault's[2] sense, actually exits.[1] Moreover, it can also be shown that nurses' autonomy and authority in practice pales before the constraints of discursive determinism.[44]

The subject and subjectivity

To understand '*the subject*' from a Foucauldian perspective is to first understand that Foucault distinguishes between '*the subject*' and '*the individual*'. Foucault was not so much concerned with '*the individual*' as he was with the forms of power that transform the individual into '*a subject*'. From that perspective, '*the subject*' is to be understood as '*a form*', as opposed to '*a thing*'. Vital in understanding '*the subject*' as '*form*' rather than '*thing*' is to understand that '*the form*' ('*the subject*') is not constant even when attached to the same individual.[45] As Foucault explained, the subject is a form not primarily or always identical to itself.[45] To understand Foucault's conception of 'the subject' one has to be clear between the two different but interconnected meanings ascribed to '*the subject*'.[46] First, "human beings are made subjects",[46 p208] that is, they are made subject to. In other words, human beings are made to be subject to others by control and dependence. Second, the subjective identity of the subject, that is, who or what the subject understands itself to be is '*made*' or '*produced*' by being tied to a given identity through consciousness or self-knowledge.[46] However, notions of subjectivity arise through broad and complex social and historical contexts, the effects of which are unconscious. As Weedon[47] explains, conscious subjectivity, which is acquired through discourse, is inherently unstable inasmuch as subjectivity is constantly in process.

Subject positions and subjectivation

Subject positions can best be understood as ways of being within a particular social context, which call for different qualities or modes of being.[47] For example, one's subject position or way of being, as mother, father, child or sibling will be different from one's subject position as nurse, teacher, researcher, NOL, and so on for the myriad subject positions one subject occupies in any number of social contexts. Subject positions can also be understood as spaces from which one speaks and observes in a discursive formation.[48] A discursive formation is understood as occurring through the systems of thought and knowledge Foucault[38] argues operate beneath the consciousness of subjects. In other words, a discursive formation defines a system of conceptual possibilities that determines the boundaries of an individual's thought in a given domain or discipline.

Important in this understanding of a discursive formation as it relates to the treatment and care of individuals with MS is that it is precisely these discursive formations that constitute disciplines, and more importantly, it is these discursive formations that underpin the exercise of a discipline's techniques of control over individuals.[49] Put another way, subject positions have rules for the acceptance of certain individuals into those spaces from which one speaks (one's discipline). According to Akerstrom Andersen[48] these rules of acceptance also determine the situations in which the subject position can be used as a platform for speaking and observing, and they also determine the formation of statements once the subject has assumed a specific subject position.[48] Akerstrom Andersen[48] clarifies subject positions further by suggesting that subjecting arises when an individual or collective is proclaimed to be a subject within a specific discourse. As such, the individual or the collective is offered a particular position in the discourse from which they can speak and act in a meaningful way. On these basis subjecting signifies the space (the practice realm) in which the discursive individual (the nurse) receives itself as nurse, as expert, as key opinion leader, as collaborator, as partner, and so on.[48] Subjectivation on the other hand, occurs when individuals or groups are formed and transformed through discourse. Subjectivation must therefore be understood as occurring when the subject (individual or group) wishes to be that subject.[48]

As Akerstrom Anderson[48] points out, subjectivation signifies the space in which the individual gives itself to itself. Therefore, '*technologies of the self*' must be understood as the performances undertaken by individuals and groups within a particular space (the practice realm) to become what they want to become. Of significance to the context of MS treatment and care is that when a nurse accepts a particular subject position within the practice setting that nurse is transformed in such a way that he or she becomes a channel for the flow of power.[50]

'Technologies of the self' as instrumentality

'*Technologies of the self*' must be understood as arising through knowledge (*savoir*)[49] with '*savoir*' understood as the labour performed by the subject upon itself in order to know[49]. '*Technologies of the self*', as those have been described by Foucault[49], can therefore be understood as the performances the subject engages in to modify itself by what it knows. Put another way, '*technologies of the self*', are the modifications, formations and transformations that arise in the subject through unconscious ways of knowing. Indeed, it was this transformation that arose in the subject that was so striking to Foucault during his historical analysis of the discourses producing 'the criminal' and 'the prison'. So intrigued was Foucault by these transformations that demonstrating '*how*' human beings are made subjects,[50]

became the very central focus of his corpus[49] as his response to questioning about his book '*Pierre Riviere*', clearly indicates:

> It's a totally strange story. It can however be said, and this is what struck me, that in such circumstances writing one's life story, one's recollections and experiences, was a practice found in a fair number of cases, and particularly in the prisons… one also finds judges and doctors doing this. It was the first great burst of curiosity about the individuals whom it was desired to transform and for the sake of whose transformation it was necessary to acquire a certain savoir, a certain technique.[49 p48-49]

Indeed, Foucault's purpose in writing '*Pierre Riviere*' was not at all to do with exposing the crime committed. Rather, it was to "render visible the medical and juridical mechanisms that surrounded the story".[49 p49] It was in this writing that Foucault made visible the '*mechanisms*' and '*techniques*' required to transform the subject into what the prison system required it to become (prisoner). According to Foucault[39] the visibility produced at that time left the experts of the day completely silent. Indeed rendering visible how human beings are transformed into required subjects in any number of contexts leaves the experts "equally dumb today".[50 p49] Foucault cautions "not to regard the point in time where we are now standing as the outcome of some teleological progression".[51 p49] Rather, he asks that we make inquiries regarding ourselves; that we inquire as to what we are here and now.[52] Thus, the inquiry we undertake asks critical questions about ourselves as nurses, and about our nursing knowledge relative to our engagements with the pharmaceutical industry.

Rendering the effects of power/knowledge visible

As the foregoing clearly demonstrates, power/knowledge produces effects; effects which are rendered visible by the '*technologies of the self*' or the '*self-technologies*' the subject applies to itself to transform itself by what it knows. In this sense, because activities are actions taken in pursuit of some objective,[53] and because actions consist of the activity or process of doing something to achieve an aim, in the context of MS treatment and care, activities and actions will be understood as the performances and practices carried out by MS nurses involved in pharmaceutical industry discourse as a direct result of their participation in that discourse. In other words, the activities and actions carried out by MS nurses engaged in relationships with pharmaceutical industry through direct contact with company representatives, through the conduct of sponsored research, through the writing of journal articles and research reports, through the facilitation of treatment decisions, and the further facilitation of compliance and adherence to treatment can all be understood as the '*technologies of the self*' MS nurses engage in to become what the pharmaceutical industry requires them to become (instruments of persuasion and surveillance); and importantly, what they themselves wish to become (expert thought leaders and key opinion leaders in their fields). While how an individual takes up a subject position is not observable, 'how' a discourse demands the individual take up a subject position is observable.[48] As such, the following explanation of self-technology analysis, along with the specific example of the '*technologies of the self*' MS nurses apply to themselves in the context of authorship will make visible and observable '*how*' discourse demands individuals take up particular subject positions.

Self-technology analysis

Self-technology analysis speaks to 'how' individuals manifest themselves as subjects. The approach concerns the analysis of the technologies available to an individual's manifestation of itself as subject, and how subject positions are created.[48] As previously discussed, within self-technology analysis the distinctions Foucault makes between subjection and subjectivation must be viewed as much more than theoretical distinctions. Recall that "subjection means that an individual or collective is proclaimed subject within a specific discourse. The individual, or collective, is offered a specific position in the discourse from which it can speak and act meaningfully".[48 p24] Subjectivation, on the other hand arises "when the individual or collective has not only been made the subject, but also wishes to be so".[48 p24] This important distinction lies between the two different demands made of individuals who are to become subjects, demands that arise through discourse.[1] In other words, the subject doesn't simply receive itself passively. On the contrary, the subject receives itself actively by giving itself to itself.[48] This active giving of oneself to oneself is to be understood as not only a mode of subjecting, it is also to be understood as a mode of transformation.[49] Thus, in the context of MS treatment and care, in addition to the demands nursing discourses make of its subjects, the strategies and tactics the pharmaceutical industry employs cannot be underestimated.[1] As Rose reminds us, in analyzing relations between 'the self' and power, "it is not a matter of lamenting the ways in which our autonomy is suppressed… but in investigating the ways in which subjectivity has become an essential object and target of certain strategies, tactics and procedures of regulation".[54 p152]

As previously pointed out, subjectivities are both constituted and constrained through what Foucault calls the "great nervure of prescriptions" that arise in discourse.[55 p304] Important in the analysis of '*self-technology*' is to understand that utterances arising within specific discourses are never value free; they are always based on certain rules of acceptability. As Foucault argues, these rules of acceptability

"run through individual oeuvres, sometimes govern them entirely, and dominate them to such an extent that nothing eludes them".[56 p139] Discourses are therefore much more than what can be said and thought; discourses are also about who can speak, when, and with what authority.[49] As such not just anyone can speak about any subject. Only those possessing the qualifications, prestige and status to speak are afforded authority within a given discourse.[56] Due to the status the medical professions enjoy in modern society, all are afforded a certain status and therefore positioned as '*expert authorities*',[1] all with the privilege to speak based on their credentials and the status they enjoy within the hierarchy of those professions. Indeed, the pharmaceutical industry has come to appreciate the marketing value of engaging the medical professions in their marketing activities.[29] As Angell[22] argues, the price of medicines is determined by their value in preventing and treating disease, and it is the physician (and increasingly the nurse) who plays a central role in determining what that value will be. Thus, return on investment for the pharmaceutical industry has been contingent upon the prescribing behaviours of physicians,[22] and will increasingly become contingent upon the prescribing behaviours of advanced practice nurse practitioners and other health professions achieving prescriptive authority.

Self-work

We have mentioned several times NOLs as the subjects and objects of DMT discourse. Subjectivity, in this sense, involves the discourses NOLs participate in as a result of their involvement in promoting the interests of the pharmaceutical industry. Such involvement is not confined to those occasions when NOLs speak in favor of the advantages of DMTs; it is a consistent part of everyday practice in clinical settings. This is because the discourses a subject engages are biased in favor of the practices typically participated in by the subject.[1] In other words, those discourses that relate directly to current practice are the most influential on current practice. In the practice of nursing, discourses of science and medicine play a pivotal role.

However, there are any number of discourses that govern and influence the individual subjectivity of NOLs. The discourses in which they participate as they practice resonate with "personal history and biography; formal training and education; professional identity; practice relevant experiences; and with participation in the relevant plurality of the social apparatus"[1 p226-227], to which they belong. All of which contribute to what Springer[1,25] describes as the heterodiscursive space of subjectivity. Therefore, when determining the various '*self-technologies*', or the '*self-work*' that NOLs engage in, one must not fail to consider the heterodiscursive space of subjectivity; the relevant plurality of the social apparatus; the dispositive. The forms of consciousness NOLs engage in within the heterodiscursive space we have referred to can be made visible by attending to how NOLs act on themselves as objects from the subjectivity of the heterodiscursive space they occupy; that is, by attending to the '*self-work*' NOLs engage in. While there are any number of possibilities, our concern is with those '*technologies of the self*' that operate in favor of the pharmaceutical industry via '*self-work*' by acting on human vulnerabilities and professional and personal identities, such as those governed by aspirations for status, recognition, prestige and authority.

Technologies of the self and nursing subjectivities

When NOLs participate in DMT discourse their subjectivities are doubly impacted. As subjects, NOLs express subjectivities governed by the requirements of clinical practice in all its heterodiscursive complexity. In the following statement, Costello and Halper[57] link commitment to the importance of a 'trusting nurse-patient relationship', a central tenet of professional nursing discourse, and 'long-term adherence; a clinical prerequisite for remission in DMT discourse, and a pharmaceutical industry imperative linked in part to financial interests:

> An open, trusting nurse-patient relationship is critical to long-term adherence. Recent anecdotal evidence from the pharmaceutical industry supports the importance of nursing education and sustained nurse-patient relationships to patients receiving self-injected therapies.[57 p18]

Here the NOLs Costello and Halper instruct other MS nurses within the normative expectations of MS clinical practice to achieve the goal of 'long-term adherence' through the means of a 'trusting nurse-patient relationship. Such exhortations reinforce professional values understood from within subjectivities that leave DMT discourse unquestioned, while urging MS nurses to work at developing nurse-patient relationships of the trusting kind. In other words, the MS nurse is prompted to strive for, to work at, to apply '*technologies of the self*' that will cultivate a persona of trustworthiness consistent with the interests of not just the person with MS, the explicit focus of the statement, but also in the interests of the pharmaceutical industry that speak loudly from what is not and cannot be said. Such trustworthiness requires the application of '*self-technologies*' that allow the MS nurse to manage personal time to be wherever possible always available for unscheduled drop in visits or telephone contact so that any problem or concern the patient may have can be addressed without delay, thereby eliminating any resistance to treatment.[1] Such foundations of trustworthiness involve a transformation in clinical practice whereby surveillance[58] of treated patients takes precedence over other important

care practices the patient may require.

The point to be taken from this example is that '*technologies of the self*' are the means MS nurses adopt as they strive to meet the expectations set out for them in the dominant discourses of practice in which they participate. As such, MS nurses apply myriad '*self-technologies*' as they strive to practice in accordance with DMT discourse in those settings where it dominates clinical practice.

Thus, this unraveling of the '*technologies of the self*' MS nurses apply to themselves; can be taken as but one example of how the pharmaceutical industry inserts itself into nursing practice. Irrespective of context, when nurses consciously attend to the requirements of practice germane to medication, they develop expertise required of them by their professional subjectivity, while transforming themselves at the same time into instruments of the pharmaceutical industry; unless, in the absence of evidence, they bring a healthy skepticism to the unsubstantiated claims made for the benefits of DMT products. It is important to understand that in the '*self-technologies*' nurses apply, be it as authors, as experts, as NOLs, as relational and knowledgeable partners in decision-making, as enthusiastic, hopeful, empathetic, friendly and responsive supporters,[1] that without insight into the forms of subjectivation and instrumentality the pharmaceutical industry engages in, nurses believe they are being faithful in their practice to only their understanding of nursing. Fundamental to such beliefs is the commitment to actions that are in the best interest of the patient.[1,25] However, without suspicion, nurses will not realize that they may be unwittingly exploiting the fears and hopes of their patients as they (nurses) take up their subject positions as 'channels for the flow of power' from the pharmaceutical industry. Indeed, it is the '*ordering*' of the work nurses perform in their everyday clinical practice settings, as well as the work they perform upon themselves as they conform to the expectations of their discipline, as well as the expectations of the heterodiscursive spaces within which they work, that their subjectivities are formed and transformed.[1,25]

Discussion

There are frameworks other than dispositive analysis that we could have used in preference to finding insights and directions for inquiry from Foucault's problematizations and researches. Therefore an obvious question is why did we opt to conduct our studies of DMT discourse within a distinctly Foucauldian conceptualization. The strong reasons we have for our approach are motivated by two concerns. The first as already mentioned is to explore DMT discourse within a broad framework of the unsaid: the institutions, practices, and networks of changing an interactive relationship that influences conceptions of the management and treatment of people with MS. As we have mentioned, the notion of 'dispositif' (dispositive) we find in Foucault's researches and conversations provides a sufficiently challenging and enlightening framework in which to investigate our interest in the current dominance of DMT discourse in managing and treating MS. We deliberately exclude our usual formulation of people with MS here because we want to draw attention to the influences that impact MS patients as they participate in DMT discourse as the recipients of a relevant treatment regimen. However, we want as well to link our understanding of the conceptual contribution of the 'dispositif' with an exploration of how politics of the 'self' constitute a distinctive subjectivity among physicians, among nurses; and among MS patients who serve as extensions of the pharmaceutical industry within the changing dynamics of conditioning institutions, organizations, practices and discourses.

Our interest in the distinctive subjectivities to which we have drawn attention raises the challenging question of the relationship between our use of Foucault's concept, '*technologies of the self*' to his distinctly ethical concerns, especially those he researched in *The History of Sexuality*. What, it may be asked, links our account of DMT discourse within a dispositive to the sort of ethics that interested Foucault? The short answer in one word; freedom. We will explain.

Let us take it that what Foucault means by '*technologies of the self*' is essentially self-constitution through practices of freedom. We now have two things to reconcile, what we might call the techniques of domination, the strategies and tactics of the 'dispositif' that provides the historical and immanent context for understanding the '*how*' and '*why*' of DMT discourse; and the practices of freedom we refer to as 'technologies of the self' that have a positive influence on promoting the interests of the pharmaceutical industry. The '*technologies of the self*' we refer to are in a sense practices of freedom, but at the same time they involve self-transformation into the subjectivities we have described. With this, we arrive at a Foucauldian paradox. For Foucault, the self is not an objective entity standing outside the discourses in which it is constituted, but a political and therefore ethical entity. Therefore, those we have called NOLs are engaged in activities and practices that are conditioned by the power relations and much else that are the elements of the *dispositif* that produces, reproduces, develops, regulates, advances and promotes DMT discourse.

However, the subjectivities to which we refer, following Foucault's later work, involve a notion of the subject that is capable of self-transformation. The paradox we engage with therefore is that of accepting that strategies and tactics of domination that are entirely compatible with a self that has the capacity for self-transformation. This works to the advantage of the pharmaceutical companies to the extent

that the subjectivities of nurses, as well as physicians and people with MS are constituted by DMT discourse, but this also leaves open the potential for commitments, actions and consequences that will provide alternative forms of self-transformation. In his later writings, Foucault takes us some way towards overcoming the paradox of domination with freedom, but we still have conceptual work to do to reconcile his archeological and genealogical studies with his ethics.

We claim that Foucault's notions of '*dispositif*' and 'technologies of the self' give us indispensable conceptual, political and ethical resources in which to research what would be unsaid about the contemporary management and treatment of people with MS. Foucault stimulates us to research neurological, nursing, and self-care practices to begin to understand how and where the ideas come from that support the ascendancy and dominance of DMT discourse. We claim no privilege for our perspective. We steer clear of any totalizing notions. We have no grand narrative to relate, no definitive answers to the problematizations we have drawn attention to; rather we seek to understand what we have described. We problematize the subjectivities MS nurses and MS NOLs, as well as the subjectivities of physicians and MS patients. We encourage an agenda of seeking out the values, interests, organizations and institutions that intertwine in the domination and control of an important field of clinical practice.

We therefore propose a double reading of our final quotation from Foucault; a reading consistent with our usage of '*technologies of the self*' in the sense of self-transformation in accordance with the interests of the pharmaceutical industry, and the more positive ethical meaning Foucault intended:

> The task of testing oneself, examining oneself, monitoring oneself in a series of clearly defined exercises, makes the question of truth – the truth concerning what one is, what one does, and what one is capable of doing – central to the formation of the ethical subject.[59 p68]

We arrive at our double reading from what we have called the Foucauldian paradox, by reading the subjectivities of physicians, nurses and people with MS as objects, but also as subjects.

Conclusion

This demonstration of what MS nurses who become influential advocates and the first line contact with MS patients do to themselves in response to the knowledge generated by pharmaceutical industry presence and influence, and which in turn transforms them into instruments of persuasion and surveillance, demonstrates the forms of power involved in transforming nursing subjectivities into objects and instruments of the pharmaceutical industry. Not only do such transformations risk distorting the practice of nursing itself, it transforms nurses into allies, agents and marketers for the pharmaceutical industry. The result of that transformation raises patient motivation, compliance and adherence to the status of a nursing imperative and displaces the caring practices of nursing.

References

1.Springer RA. Pharmaceutical industry discursives & the subjectivities of physicians, nurses and multiple sclerosis patients: A Foucauldian dispositive analysis. Ottawa: Library & Archives Canada: Bibliotheque et Archives Canada, 2010.

2.Lagrange J, Ewald F, Fontana A. (eds). Michel Foucault: Psychiatric power. Lectures at the College de France 1973-1974. English Series Editor, AI Davidson. Translated by G Burchell. Palgrave MacMillan, 2003.

3.Ebers GC. Preventing Multiple Sclerosis? The Lancet 2001; 357:497.

4.Munari L, Filippini G. Lack of evidence for use of glatiramer acetate in multiple sclerosis. The Lancet Neurology 2004;3:641.

5.Goodin DS, Frohman EM, Germany GP, et al. Disease modifying therapies in multiple sclerosis: Report of the therapeutics and technology assessment subcommittee of the American Academy of Neurology and the MS Council for Clinical Practice Guidelines. Neurology 2002; 58(2):169-78.

6.Goodin DS. Disease-modifying therapy in MS: A critical review of the literature. Part I: Analysis of clinical trial errors. Journal of Neurology 2004; 1503: 3-11.

7.Rice GPA, Incorvaia B, Munari L, et al. Interferon in relapsing-remitting multiple sclerosis. The Cochrane Database of Systematic Reviews 2001; 4: CDOO202.

8.Rio J, Nos C, Tintore M, et al. Defining the response to interferon –B in relapsing-remitting multiple sclerosis patients. Annals of Neurology 2006; 59: 344-52.

9.Caon C, Din M, Ching W, et al. Clinical course after change of immunomodulating therapy in relapsing-remitting MS. European Journal of Neurology 2006; 13: 471-74.

10.Chaudhuri A. Interferon beta, progressive MS, and brain atrophy. The Lancet Neurology 2005; 4(4):208-9.

11.Filippini G, Munari L, Incorvaia B, et al. Interferons in relapsing remitting multiple sclerosis: A systematic review. The Lancet 2003; 362: 545-52.

12.Munari L, Lovati R, & Boiko A. Therapy with glatiramer acetate for multiple sclerosis. Cochrane Library 2004;1:1-25.

13.Pittock SJ, Mayr WT, McClelland RL, et al. Change in MS-related disability in a population-based cohort. Neurology 2004; 62(1):51-5

14.Bussolini J. What is dispositive? Foucault Studies, 2010; 85-106.

15.Foucault M. The confession of the flesh. In Colin Gordon (ed). Power/knowledge: Selected interviews & other writings 1972-1977. The Harvester Press; 1980; 194-228.

16.Canada's Research Based Pharmaceutical Companies (Rx&D). Code of ethical practices, Integrity, Trust. 55 Metcalfe Street, Suite 1220. Ottawa, ON, K1P 6L5; 2010. Retrieved from https://www.canadapharma.org/en/default.aspx.

17.Brett AS, Burr W, Moloo J. Are gifts from pharmaceutical companies ethically problematic? Archives Internal Medicine, 2003; 163: 2213-8.

18.Brody H. The company we keep: why physicians should refuse to see pharmaceutical representatives. Annals of Family Medicine, 2005; 3(1):82-6.

19.Katz D, Caplan AL, Merz JF. All Gifts large and small: toward an understanding of the ethics of pharmaceutical industry gift giving. American Journal of Bioethics 2003;3(3):39-47.

20.Schafer A. Biomedical conflicts of interest: a defense of the sequestration thesis- learning from the cases of Nancy Oliveri and David Healy. Journal of Medical Ethics 2004;30:8-24.

21.Hanley G, Morgan S. Chronic catastrophes: exploring the concentration and sustained nature of ambulatory prescription drug expenditures in the population of British Columbia, Canada. Social Science & Medicine 2009;68(5):919.

22. Angell M. The truth about the drug companies. Random House: New York, 2004.

23.Brennan, T.A., Rothman, D.J., Blank L., Blumenthal, D, Chimonas, S.C. & Cohen, J.J. et al. (2006) Health industry practices that create conflicts of interest: A policy proposal for academic medical centers. JAMA, 295(4), 429-433.

24.Landefeld CS, Steinman MA. The Neurontin legacy – marketing through misinformation and manipulation. New England Journal of Medicine 2009;360(2):103-6.

25.Springer RA. Pharmaceutical industry discursives and the marketization of nursing work: a case example. Nursing Philosophy. 2011; 12(3):214-28.

26.Brownlee S. Overtreated: Why too much medicine is making us sicker and poorer. Bloomsbury: New York, 2007.

27.Campbell EG. Doctors and drug companies – scrutinizing influential relationships. New England Journal of Medicine. 2007; 357(18):1796-7.

28.Drews J. Drug Research: Between Ethical Demands and Economic Constraints. In MA Santoro and TM Gorrie – Ethics and the Pharmaceutical Industry, Part I. Cambridge, UK: Cambridge University Press, 2005; 36.

29.Kassirer JP. On the take: How America's complicity with big business can endanger your health. New York: Oxford University Press, 2005.

30.Komesaroff PA, Kerridge IH. Ethical issues concerning the relationships between medical practitioners and the pharmaceutical industry. The Medical Journal of Australia 2002;176(3):118-21.

31.Morgan S. Ethics, Public Policy and the Pharmaceutical Industry - The Sheldon Chumir Foundation For Ethics in Leadership – Public Forum – Calgary, Alberta, November 2; 2005.

32.Moynihan R, Cassels A. Selling sickness: How the world's biggest pharmaceutical companies are turning us all into patients. Greystone Books. Vancouver, Toronto: Douglas & McIntyre Publishing Group, 2005.

33.Mintzes B, Moynihan R. Sex lies and pharmaceuticals: How drug companies plan to profit from female sexual dysfunction. Vancouver, Toronto, Berkeley: Greystone Books D & M Publishers Inc., 2010.

34.Mintzes B, Lexchin J. Do higher drug costs lead to better health? Canadian Journal of Clinical Pharmacology. 2005; 12(1):22-7.

35.Robinson J. Prescription games: Money, ego and power inside the global pharmaceutical industry. London: Simon & Shuster, A Viacom Company, 2001.

36.Steinman MA, Baron RB. Is continuing medical education a drug-promotion tool? Canadian Family Physician 2007;53:1650-3.

37.Turner EH, Matthews AM, Linardatos E, Tell R A, & Rosenthal R. Selective publication of antidepressant trials and its influence on apparent efficacy. The New England Journal of Medicine 2008; 358(3):252-60.

38.Williams S J, Gabe J, Davis P. (eds). Pharmaceuticals and society: Critical discourses and debates. West Sussex, UK: Wiley-Blackwell, 2009

39.Jutel A, Menkes DB. Soft targets: Nurses and the pharmaceutical industry. PLoS Medicine. 2008; 5(2):0193-0198.

40.Kmietowicz Z. Drug company influence extends to nurses, pharmacists, and patient groups. British Medical Journal 2004; 329:1206.

41.Crock E. Ethics of pharmaceutical company relationships with the nursing profession: No free lunch… and no more pens? Contemporary Nurse 2009; 33(2): 202-9.

42.Lakeman R. Mental health nursing is not for sale: rethinking nursing's relationship with the pharmaceutical industry. Journal of Psychiatric and Mental Health Nursing. 2010; 17:172-7.

43.Beauchamp T, Childress JF. Principles of biomedical ethics (6th ed). New York: Oxford University Press, 2009.

44.Latimer J. Organizing context: Nurses' assessments of older people in an acute medical unit. Nursing Inquiry 1998; 5:43-57.

45.Foucault M. Afterword: The subject and power. In Hubert L. Dreyfus and Paul Rabinow (eds). In M Foucault, Beyond Structuralism and Hermeneutics. Chicago: The University of Chicago Press, 1982.

46.Roberts M. The production of the psychiatric subject: power, knowledge and Michel Foucault. Nursing Philosophy 2005; 6:33-42.

47.Weedon C. Feminist practice & poststructuralist theory. Oxford: Basil Blackwell, 1987.

48.Akerstrom Andersen N. Discursive analytical strategies: Understanding Foucault, Koselleck, Laclau, Luhmann. Bristol: The Policy Press; 2003.

49.Foucault M. The order of things: archaeology of the human sciences. New York: Vintage Books, 1994.

50.Foucault, M., Prison talk. In Colin Gordon (editor). Power/knowledge: Selected interviews and other writings 1972-1977. Briton: The Harvester Press, 1980; 37-54.

51.Foucault M. Two Lectures. In Colin Gordon (editor). Power/knowledge: Selected interviews and other writings 1972-1977. Brighton: The Harvester Press, 1980; 78-108.

52.Foucault M. Collloqui con Foucault. Interview with Duccio Trombadori (Italian). Translated from Italian by R. James Goldstein and James Casaito as Remarks on Marx (NY: Semiotext (e));1978. Retrieved from http://www.csun.ed/~hfspc002/fouc.B4.html

53.Pearsall J. (ed). Concise Oxford English Dictionary. Tenth Edition, Revised. Oxford: Oxford University Press, 2002.

54.Rose N. Investigating Our Selves: Psychology, Power and Personhood. Cambridge: Cambridge University Press, 1992.

55.Foucault M. The Archaeology of Knowledge. Translated from the French by A. M. Sheridan Smith. New York: Pantheon Books, A Division of Random House, 1972.

56.Foucault M. The Birth of the Clinic: Archaeology of Medical Perception. New York: Pantheon Books. A Division of Random House, 1973.

57.Costello K, Halper J. Multiple Sclerosis: Key issues in nursing management – adherence, cognitive function, quality of life, 2nd ed. Bioscience Communications, 2004.

58.Purkis M.E. The "social determinants" of practice? A critical analysis of the discourse of health promotion. Canadian Journal of Nursing Research 1997; 29(1):47-62.

59.Foucault M. The history of sexuality, Volume 3: The care of the self. London: Penguin Books, 1984.

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