

ORIGINAL ARTICLE

Nursing Shortage: A Comparative Analysis

Lauren Littlejohn ^{*a}, Jacquelyn Campbell^b, Janice Collins-McNeil^c, ThembisileKhayile^d



Lauren Littlejohn

- a. Winston Salem State University, Winston Salem, NC
- b. John Hopkins College of Nursing, John Hopkins University, Baltimore, MD
- c. Winston Salem State University, Winston Salem, NC
- d. University of the Western Cape, Bellville, South Africa

ABSTRACT

Background: The nursing shortage is a global challenge, affecting every country in the world. With this shortage, patients are suffering because the healthcare workforce is not prepared to deal with their health needs. Within each country, the nursing shortage is caused by numerous factors that ultimately cause a decrease in the quality of health care received. However, little is known about the global causes of a shrinking professional nurse workforce.

Objective: The purpose of this paper is to describe what the nursing shortage means in three countries: United States (US), Philippines, and South Africa. In addition, the paper will provide useful information specific to the three countries to further understand global issues affecting the nursing shortage

Population: Nursing shortage in the United States, Philippines, and South Africa.

Methods: A literature review was performed by four researchers using a peer-reviewed search strategy. Published literature was identified by searching the following bibliographic databases: with in-process records via OVID; Sage; PubMed; and CINAHL (2002–present). The main search concepts were global nursing shortage, international nursing, nurse migration, brain drain, and health care systems.

Results: The nursing shortage in the US, Philippines and South Africa are each different however, they all share similar effects on health care systems in each country.

Conclusion: The global nursing shortage is relevant and warrants further investigation and appropriate interventions to ultimately alleviate the nursing shortage and prevent an international public health crisis.

Keywords: *Nursing; Shortage; Comparative.*

*Corresponding Author

Lauren Littlejohn, BSN, RN, Winston Salem State University, 601 S. Martin Luther King Jr Dr, Campus Box 18792, Winston Salem, NC 27110, e-mail: lblittlejohn@bellsouth.net

Article Info:

Submitted: Jan 30, 2012;
Accepted: Mar 31, 2012;
Published: Jul 01, 2012.

© 2012 International Journal of Nursing

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/2.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited

Introduction:

According to the International Council of Nurses (ICN) (2004), the dearth of healthcare professionals is one of the major obstacles to achieving the United Nation's Millennium Development Goals (Buchan & Aiken, 2008; Hancock, 2008). The United Nation's Millennium Development Goals are to: "1) eradicate extreme poverty and hunger, 2) achieve universal primary education, 3) promote gender equality and empower women, 4) reduce child mortality, 5) improve maternal health, 6) combat HIV/AIDS, malaria and other diseases, 7) ensure environmental sustainability, and 8) develop a global partnership for development" (2011). According to the High Level Forum on Health Millennium Development Goal stated, "There is a human resources crisis in health, which must be urgently addressed" (High Level Forum on the Health MDG, 2004, p.4). The global health care workforce is experiencing a major nursing shortage (Buchan & Aiken, 2008; Institute of Medicine, 2011; Oulton, 2006; Institute of Medicine, 2011; Solidarity Research Report, 2009).

A nursing shortage is usually defined and measured in relation to a country's historical staffing levels, resources and estimates of demand for healthcare services (Buchan & Aiken, 2008). Thus, nursing shortages are not easily quantifiable, and they may be defined in terms of professional capacity standards (shortage of nurses that are needed to provide quality services) or from an economical perspective (not enough nurses available to fill open positions) (Buchan & Aiken, 2008; Institute of Medicine, 2011; Oulton, 2006; Fox & Abrahamson, 2009; Zurn, Dal Poz, Stilwell, & Adams, 2002). However, within each country, United States (US), Philippines, and South Africa, there is a difference in the definition of nursing shortage and how it plays a role in the production of health care workers.

Purpose

This paper will describe what the nursing shortage means in three countries: US, Philippines, and South Africa. In addition, the paper will provide useful information about the three countries to understand global issues affecting the nursing shortage and strategies that have been employed by each country to address the nursing shortage. Further, the paper concludes with a discussion of factors that should be changed in order to correct nursing shortages to ultimately, alleviating the global nursing shortage.

Background

In order to understand nursing shortage, one must understand how it came about. According to Oulton (2006), the nursing shortage today is more complicated because "there [is] both [greater] supply and demand issues" than before. Oulton further explains that previous nursing shortages were caused by either an increase in

demand or decrease in supply (2006). But today, society is affected by a "decrease in supply that can not meet the increased demand" (Oulton, 2006). Examples of increased demand and decreased supply are "an aging workforce, shrinking applicant pool, and unfavourable work conditions" (Buchan & Aiken, 2008; Institute of Medicine, 2011; Oulton, 2006). In addition, there is a shortage of other health professionals as well as nurses occurring simultaneously (Oulton, 2006).

Understanding the definition of nursing shortage is important (Buchan & Aiken, 2008; Institute of Medicine, 2011; Oulton, 2006; Fox & Abrahamson; Zurn et al., 2002). According to Zurn et al (2002), there are both "economic" and "non-economic" definitions of skill imbalance, and that these imbalances may be "static" or "dynamic". In addition, Buchan and Aiken (2008) mentions that the nursing shortage can be caused by "a shortage of nurses willing to work as nurses under the present conditions." The shortage can further be defined in definition of absolute and relative terms. An absolute shortage is a situation where skilled people are not available for a specific vacancy (Wildschut & Mqolozana, 2008). In contrast, a relative shortage is a situation where qualified people are available for the vacancy; however, they do not meet other employment criteria (Wildschut & Mqolozana, 2008). Other examples of relative shortage may include; geographical location, equity considerations, recruitment and retention challenges and meeting the demand for replacements (Wildschut & Mqolozana, 2008).

United States

According to the Bureau of Health Resources and Services Administration (HRSA) 2006 report, the U. S's nursing shortage will grow to more than one million nurses by the year 2020. Within the U.S., the nursing shortage is not caused by lack of qualified potential applicants (Fox & Abrahamson, 2009; Oulton, 2006). According to the American Association of Colleges of Nursing (AACN) 2010-2011 report, 67,563 qualified applicants were turned away from baccalaureate and graduate nursing programs because of lack of available faculty and resources (AACN, 2011). One factor that is affecting the U.S. nursing shortage are nursing schools' inability to increase enrollment due to scarcity of nursing school faculty (Oulton, 2006; Buchan & Aiken, 2008; Institute of Medicine, 2011; Ellenbecker, 2010; Clark & Allison, 2011; Rosenkotter & Nardi, 2007). Additional factors affecting the US shortage are: the average age of registered nurses (RN's) increasing, changing patient demographics, insufficient staffing raising stress level, and high nurse turnover and vacancy rates (Oulton, 2006; Buchan & Aiken, 2008; Institute of Medicine, 2011; Ellenbecker, 2010; Clark & Allison, 2011; Rosenkotter & Nardi, 2007).

In the 21st century, there has been a major focus of the health care system from acute illnesses and injuries to chronic illnesses (Institute of Medicine, 2011). In 2005,

one of every two Americans suffered from at least one chronic condition such as diabetes, hypertension, arthritis, cardiovascular disease, and mental health (CDC, 2008-). In addition, there has been increase in number of Americans suffering from obesity, which is linked to cause many chronic conditions (CDC, 2008-).

According to Beechinor and Fitzpatrick (2008) the U. S. will need more than 800,000 new nurses for 22-36% nursing positions available by year 2020. The U.S. has tried to offset the nursing shortage by hiring international nurses (Rosenkotter&Nardi, 2007).The U.S. has largest professional nurse workforce of any country in world, numbering almost 3 million in 2004 (Aiken, 2007). With industrialized nations, such as the U.S., importing so many nurses from developing countries there is a “depletion of a country’s [developing] most experienced and well-qualified nurses” (Perrin, Hagopian, Sales, & Huang 2007; Aiken, Buchan, Sochalski, Nichols, & Powell, 2004). This is compromising the ability of those countries to adequately address their own health care needs.

Philippines

The Philippines is the primary exporter of nurses employed overseas(Perrin, Hagopian, Sales & Huang, 2007). The Philippine government actually supports migration of the nurses by training a surplus of nurses to be employed outside of Philippine borders(Perrin et al., 2007; Masselink& Lee, 2010). According to International Labor Organization (2006), the labor migration was intended to serve as temporary procedure to ease domestic labor market in Philippines thus to “stabilize the country’s balance-of-payments position” (p.). However, this has not come to be, because of the increase in dependence on labor migration and change in demographic in “agricultural economy to largely service-driven economy” (International Labor Organization, 2006).

In the Philippines, they are educating more nurses than they need (International Labor Organization, 2006; Masselink& Lee, 2010). In 2005, an estimated 26,000 new nurses graduated compared to 27,000 graduates produced between the years 1999-2003 (Masselink& Lee, 2010). Lorenzo, Galvez-Tan, Icamina, & Javier (2007) asserts “Philippines has a net surplus of registered nurses.” Yet, the country loses its trained and skilled nursing workforce much faster than it can replace them due to migration (Lorenzo et al., 2007). According to Masselink and Lee (2010), 85% of Filipino nurses worked overseas. Thus, the Philippine health service is hurting their integrity and quality due to increasing number of nurses leaving the country to work overseas(Lorenzo et al., 2007).

“Brain drain” ultimately will lead to the destruction of the Philippine nursing education sector, health system and nurse migration (Masselink& Lee, 2010). Brain-drain is defined as “phenomenon of well-

educated professional who permanently migrate from developing to industrialized countries” (International Labor Organization, 2006). When professional individuals leave a country permanently, then the source country loses a valuable, skilled professional (International Labor Organization, 2006). The nursing schools in Philippines actively advertise nursing migration by suggesting slogans of “your cap is your passport”, “we nurse the world”, “Be a nurse ... and work abroad” as just few (Masselink& Lee, 2010). The nursing shortage in the Philippines is in need of transformation in order to bring about change within the country.

Another factor that is affecting the nursing shortage in the Philippines is that the healthcare system is poorly funded (Masselink& Lee, 2010). In 2005, the Philippine health spending was only 3.2% of the gross domestic product compared to 16% of the gross domestic product in the U.S.(Masselink& Lee, 2010; Baker, 2007). Moreover, the Philippine shortage is worsened by serious mal-distribution of physicians, nurses, and other health workers (Masselink& Lee, 2010). Additionally, the Philippine’s health care providers have “rapid turnover” in which nurses work long enough to get work experience so they can then travel abroad (Masselink& Lee, 2010).

The source country, the Philippines, benefits from migration by “substantial remittances that boost the country’s GNP as well as enhance quality of life and earning capacities of the health workers themselves” (International Labor Organization, 2006, p. 27). Furthermore, the increase in migration of nurses serves to increase the incentives for nurses to obtain higher education, increasing the stock of education in the Philippines (Bach, 2006). In addition, migration is an alternative to unemployment and underemployment in country (International Labor Organization, 2006). However, migration has negative factors that affect the source country. Most professionals who migrate are highly skilled and when they migrate to other countries, they leave behind a skills void that is hard to be replaced (International Labor Organization, 2006). In addition, with the nursing staff shortage patient outcomes are compromised (International Labor Organization, 2006).

South Africa

According to Munjanja et al., the International Nurses Council (INC) identifies factors contributing to the nursing shortage in South Africa as : “migration of health workers from SSA[sub-Saharan Africa]; a limited supply of new nurses and other health workers coming into the workforce in SSA; poor HHR [health human resources] management systems; attrition due to HIV/AIDS now thought to be affecting health workers in serious numbers; limited career and professional opportunities resulting in frustration and consideration of health professions” (2005).

The National Human Resource Plan (NHR) of the Department of Health (DoH) (2006) reported that South Africa is experiencing a serious crisis due to the increasing nursing shortage and proposed a need for the national production of 21000 nurses by 2011. According to Hall and Erasmus (2003) in the Human Science Research Council (HSRC) Human Resources Development Review the estimated overall gap between nursing supply and demand was 18,758 nurses between 2001 and 2011. The Provincial Government of the Western Cape (PGWC) Department of Health (DoH) identified a shortage of 1000 trained nurses in all nursing categories in the public sector in 2002. The National Department of Health has also reported that in recent years there was a shortage of RN's in general and speciality nursing respectively, and developed a Provincial Nursing Strategy aimed at addressing provincial nursing challenges, such as nursing education and practice (George, Quinlan & Reardon, 2009).

In contrast, the South African Nursing Council (2011) indicated that there has been a growth of 21.9 % of professional nurses in the period 2001-2010. In 2005 there were approximately 100,000 professional nurses registered with South African Nursing Council (SANC), these numbers increased to 115, 244 in 2010. Further, in a study conducted by Subedar (2005) focused on the production and distribution of professional nurses in South Africa, and identified that for the period 1996-2004 approximately, 19, 400 professional nurses were trained and registered with SANC. A major concern for the nurses was the trend in the declining numbers of professional nurses trained annually.

Subedar (2005) also identified that nursing colleges produced the majority (81.6 %) of professional nurses, where 15,824 professional nurses were registered after completing the four year diploma program. Universities indicated a number of 3,576 trained professional nurses for the period 1996-2004, but the graduation rate increased from 360 in 1996 to 428 nurses in 23,004, an increase of 19 %.

The SANC register (2011) indicates that professional nurse output in 2005 at Western Cape universities were 81 and increased to 168 in 2010, while college output in 2005 was 79 and increased to 101 in 2010, which indicates an improvement of professional nurse output from universities in the Western Cape province, which also shows an improvement from Subedar (2005) study for period 1996-2004.

According to the SANC registry, the country is producing adequate numbers of professional nurses; however, the South African health system is still experiencing a shortage of nurses. Additionally, in order to address the declining numbers in professional nurses in South Africa is to verify the accuracy of the SANC registry data. For, instance not all professional nurses who are registered as professional nurses are working as nurses and delivering care. Most of these nurses have left the country

but have maintained active registration with the SANC.

Moreover, Dovlo (2007) points out that World Health Organization (WHO) estimates that South Africa has 25% of disease burden of world, stating that Africa has 1.3% of the health workforce. In addition, Africa has highest prevalence of HIV/AIDS rates in world (Brier, Wildschut, & Mgqolozana, 2009; Munjanja, Kibuka, & Dovlo, 2005). South Africa is not training nor producing sufficient nurses to deal with its health needs, which affects the quality of service delivery (Wildschut & Mgqolozana, 2008). There has not been increased in numbers of training schools available thus limiting countries with poor availability of nurses (Munjanja et al., 2005).

South Africa's nursing shortage will ultimately have negative impact on the quality of care delivered to South African population (Munjanja et al., 2005). One factor that has played an increasing role to nursing shortage has been out-migration of nurses (Munjanja et al., 2005). Munjanja et al. (2005) states that reasons for emigration are "need for further professional training, social unrest/conflict, low salaries, and poor working conditions." Another factor that influences nurses is increase burden of disease, HIV/AIDS, TB, malaria (Munjanja et al., 2005). In addition, there are many recommendations for increasing the responsibilities of nursing in providing HIV/AIDS patient care and prevention and in addressing other chronic health problems (IOM HIV/Aid workforce report 2011). More job responsibilities translate to a need for more nurses in a time of existing shortage.

The International Council of Nurses has identified seven critical areas that attention should be given in Sub-Saharan Africa: "curriculum relevance, training methodologies, retention, staffing models that would allow for decisions on categories, ratios, competencies of RN workforce, curriculum and content to be made meaningful, identification and implementation of required changes in regulation, strengthening of workforce information and management systems as well as supply and demand studies that will inform decision-making, and collective responsibility on the part of both source and destination countries to ensure supply of well-trained nurses in adequate numbers in both the developing and the developed countries" (Munjanja et al., 2005).

Recommendations

With research available on global nursing shortage, there are core recommendations that have been identified to alleviate the nursing shortage in order to improve global health workforce. Fox and Abrahamson (2009) states that increase in quality of reimbursement process would increase the value of nurse. Another recommendation would be to increase recruitment of new nurses and to improve retention (Fox & Abrahamson, 2009; Buchan & Aiken, 2008; Oulton, 2006). In addition, many

countries need to create a unified workforce across occupation and disciplines to identify the skills and roles needed to meet identify services (Buchan & Aiken, 2008; Institute of Medicine, 2011).

According to the ICN (2005) major reform needs to take place within five key areas for policy intervention to improve the global nursing shortage. The five key areas of reform are: 1) macroeconomic and health sector funding policies, 2) workforce policy and planning, including regulation, 3) positive practice environments and organizational performance, 4) retention and recruitment, and 5) leadership (Oulton, 2006; ICN, 2006).

According to Little and Buchan (2007), all countries must strive to attain self-sufficiency in their health care workforce without generating adverse consequences for other countries. According to the Merriam-Webster's online dictionary, self sufficiency is defined as the quality or state of being self-sufficient, which it subsequently defines as able to maintain oneself or itself without outside aid: capable of providing for one's own needs. When used to define a market that has sufficient domestic production to meet the needs or consumption. A market that is self-sufficient does not require the importation of products to meet needs (Little & Buchan, 2007). According to Little and Buchan (2007) transference of the concept of self-sufficiency to nursing human resource planning leads to a plausible definition of a "sustainable stock of domestic nurses to meet service requirements". These authors have also identified several existing models of self-sufficiency in the health workforce. The examples are Iran, Australia, Oman, Malawi, and Caribbean region (Little & Buchan, 2007). Since Iran establishment of National Ministry of Health and Medical Education program, the country has been able to reduce number of foreign medical workers from 3,153 to zero and reduce number of patients sent abroad for treatment from 11,000 to 200 since transformation in 1984 (Little & Buchan, 2007). The establishment of the ministry has led to improvement in the "development of human resources for health to better meet population health needs" (Little & Buchan, 2007). According to the ICN (2006) report, the importance of building national self-sufficiency to manage domestic issues of supply and demand in rich and poor countries alike is critical (ICN 2006, p 12). However, planning efforts should require that the United States establish a national system that monitors the inflow of foreign nurses, their countries of origin, the states and setting in which they work, and their impact on the nursing shortage (IOM, 2011). In order to ensure that the nursing care needs of the public are met, a broader workforce policy is needed that balances foreign nurse recruitment and domestic needs (IOM, 2011).

Conclusion

In conclusion, the nursing shortages in each country are different but ultimately they have share similar effects on health care systems in each country. The U.S. must develop incentives to increase the number of nursing

faculty to accommodate the existing high demands for nursing enrollment. Further, the U.S. needs to establish recruitment of younger nurses into the profession and retention of older nurses to remain in the profession. The Philippines should establish competitive workforce planning to sustain its own health care systems and domestic supply of nurses to improve healthcare. Similarly, South Africa should establish competitive healthcare systems and improved access to nursing education to increase employment opportunities for nurses to discourage nursing migration. The magnitude of the nursing shortage is negatively affecting the goals of improving health systems globally (Oulton, 2006; Buchan & Aiken, 2008). Ultimately, the failure to deal with the nursing shortage whether it be local, regional, national, or global will lead to failed healthcare systems and poor healthcare outcomes (Buchan & Aiken, 2008). The recommendations presented in this paper are not all inclusive and exceed limitations of this paper. Further research in workforce planning and global health policy to enhance the profession of nursing worldwide is warranted.

References

1. *Tips Dan kiat Hidup sehat*
<http://tipsdankiathidupsehat.blogspot.com>
2. American Association of Colleges of Nursing (AACN). (2011, April 14). Nursing shortage fact sheet. Retrieved from <http://www.aacn.nche.edu/media/factsheets/nursingshortage.htm>
3. Bach S (2006). International Mobility of Health Professionals: Brain Drain or Brain Exchange? United National University – World Institute for Development Economics Research. ISBN 92-9190-860-6. Research Paper No. 2006 (82), August 2006
http://www.wider.unu.edu/publications/working-papers/research-papers/2006/en_GB/rp2006-82/_files/78091786133112658/default/rp2006-82.pdf
4. Brier, M., Wildschut, A., & Mgqolozana, T. (2009) Nursing in a new era: The profession and education of nurses in South Africa. Cape Town: HRSC press
5. Buchan, J., & Aiken, L. (2008). Solving nursing shortages: a common priority. *Journal of Clinical Nursing*, 17(24), 3262-3268. Retrieved from EBSCOhost.
6. Bureau of Health Professions, National Center for Health Workforce Analysis Reports. What is behind HRSA's projected supply, demand, and shortage of registered nurses? Washington, DC: U.S. Department of Health and Human Services; 2004.
<http://bhpr.hrsa.gov/healthworkforce/reports/behindnprojections/index.htm>.
7. Centers for Disease Control and Prevention. Chronic Disease Prevention and Health Promotion. 2009 Available from: <http://www.cdc.gov/chronicdisease/overview/index.htm>
8. Clark, R., & Allison-Jones, L. (2011). Investing in human capital: An Academic-Service Partnership to Address the nursing shortage. *Nursing Education Perspectives*, 32(1), 18-21. Retrieved from EBSCOhost
9. DoH (2006) Hall and Erasmus (2003) A National Human Resources of Health Planning Framework. Pretoria: DoH
10. Dovlo, D. (2007). Migration of nurses from sub-Saharan Africa: A review of issues and challenges. *Health Services*

- Research. 42(3): 1371-1388.
11. Ellenbecker, C. (2010). Preparing the nursing workforce of the future. *Policy, Politics, & Nursing Practice* 11(2) 115-125. Doi:10.1177/15271544103080142
 12. Fox, R., & Abrahamson, K. (2009). A critical examination of the U.S. nursing shortage: contributing factors, public policy implications. *Nursing Forum*, 44(4), 235-244. doi:10.1111/j.1744-6198.2009.00149.x
 13. George, G., Quinlan, T. And Reardon, C. (2009) Human Resources of Health: A Needs and Gaps Analysis of HRH in South Africa: Health Economics and HIV/AIDS Research Division (HEARD), University of KwaZulu-Natal.
 14. Hall, E. & Erasmus, J. (2003) Medical practitioners and nurses. In Human resources development review 2003: Education, employment and skills in South Africa. Cape Town: HSRC Press
 15. Hancock, P.K. (2008). Nurse migration: the effects on nursing education. *International Nursing Review* 55(3), 258-264. Doi: 10.1111/j.1466-7657.2008.00637.x
 16. High Level Forum on the Health MDGs (2004) Summary of Discussions and Agreed Action Points. High Level Forum, Geneva. Retrieved from: <http://www.who.int/hdp/en/summary.pdf>
 17. Institute of Health Policy and Development Studies (2006). Migration of health workers: Country case study Philippines. International Labour Office, Geneva. <http://www.ilo.org/public/english/dialogue/sector/papers/health/wp236.pdf>
 18. International Council of Nurses (2006). The Global Nursing Shortage: Priority Areas for Intervention. International Council of Nurses, Geneva, Switzerland.
 19. IOM (Institute of Medicine). 2011. The Future of Nursing: Leading Change, Advancing Health. Washington, DC: The National Academies Press.
 20. Jamieson, I., & Taua, C. (2009). Leaving from and returning to nursing contributing factors. *Nursing Praxis in New Zealand*, 25(2), 15-27. Retrieved from EBSCOhost.
 21. Little L, Buchan J. Nursing Self Sufficiency/Sustainability in the Global Context. Geneva: International Centre on Nurse Migration and the International Centre for Human Resources in Nursing. International Council of Nurses; 2007. Retrieved from http://www.intlnursemigration.org/download/SelfSufficiency_EURO.pdf.
 22. Lorenzo, F. M. E., Galvez-Tan, J., Icamina, K. and Javier, L. (2007), Nurse Migration from a Source Country Perspective: Philippine Country Case Study. *Health Services Research*, 42, 1406-1418. doi: 10.1111/j.1475-6773.2007.00716.x
 23. Masselink, L. & Lee, S. (2010). Nurses, Inc: expansion and commercialization of nursing education in the Philippines. *Social Science & Medicine* 71(1), 166-172. Doi:10.1016/j.socsimed.209.11.043
 24. Munjanja, O., Kibuka, S., & Dovlo, D. (2005). The nursing workforce in sub-Saharan Africa. International Council of Nurses, Jean Marteau: Switzerland. ISBN: 92- 95040-27-9
 25. Oulton, J. (2006). The global nursing shortage: an overview of issues and actions. *Policy, Politics & nursing Practice*, 7(3), 345-395. Doi:10.1177/15271544062893968.
 26. Perrin M.E., Hagopian A., Sales A. & Huang B. (2007) Nurse migration and its implications for Philippine hospitals. *International Nursing Review*, 54 (3) , 219-226. DOI: 10.1111/j.1466-7657.2007.00567.x
 27. Pittman, P, Folsom, A., & Bass, E. (2010). US-Based recruitment of foreign-educated nurses: implication of an emerging industry. *American Journal of Nursing*, 110(6), 38-48. Doi: 10.1097/01.NAJ.0000377689.49232.06
 28. Rosenkoetter, M., & Nardi, D. (2007). American academy of nursing expert panel on global nursing and health: white paper on global nursing and health. *Journal of Transcultural nursing*, 18(4), 305-315. Doi:10.1177/1043659607305188
 29. Subedar, H. (2005) Nursing Profession: Production of nurses and proposed scope of practice. In Health Systems Trust South African Health Review 2005. Durban: Health Systems Trust. Pretoria.
 30. United Nations (2011). The Millennium Development Goals Report 2011. United Nations, New York. www.un.org/millenniumgoals/11_MDG%20Report_EN.pdf
 31. Victorino Beechinor, L. A. and Fitzpatrick, J. J. (2008). Demands of immigration among nurses from Canada and the Philippines. *International Journal of Nursing Practice*, 14: 178-187. doi: 10.1111/j.1440-172X.2008.00680.x
 32. Wildschut A & Mgqolozana T (2008) Shortage of nurses in South Africa: Relative or absolute. Case study report compiled for the DoL study: A multiple source identification and verification of scarce and critical skills in the South African labour market. HSRC/ DoL. To be made available on CD with Erasmus and Breier (in press).
 33. Zurn P, Dalpoz M, Stilwell B & Adams O. (2002) Imbalances in the Health Workforce. WHO, Geneva.