



EMPOWERING KNOWLEDGE A WAY TO MINIMIZE HEALTH SPENDING: A REVIEW OF EMPIRICAL STUDIES

Toms K Thomas*, Dr. Satish Kumar & Dr. D. Jayalakshami*****

* Ph.D Scholar, Rajiv Gandhi National Institute of Youth Development (RGNIYD), Chennai, Tamilnadu

** Dean of School of Public Health, SRM University Chennai, Tamilnadu

*** Head of the Department, Department of Gender Studies, Rajiv Gandhi National Institute of Youth Development (RGNIYD), Chennai, Tamilnadu

Cite This Article: Toms K Thomas, Dr. Satish Kumar & Dr. D. Jayalakshami, "Empowering Knowledge A Way to Minimize Health Spending: A Review of Empirical Studies", International Journal of Scientific Research and Modern Education, Volume 2, Issue 1, Page Number 114-121, 2017.

Copy Right: © IJSRME, 2017 (All Rights Reserved). This is an Open Access Article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Introduction:

Diabetic type II is known as a silent illness exhibiting no symptoms until it develops very severe. Early and timely case detection therefore require active and opportunistic screening (Rema, Deepa & Mohan 2000). The untimely treatment and delay in diagnosis often increase the cost of diabetic care. The increasing spending on diabetic management and growing incidence of hospitalization led to think about alternative ways to best manage diabetics. Healthcare expenditures on diabetes account for 11.6% of the total healthcare expenditure in the world in 2010. About 80% of the countries spend between 5% and 13% of their total health expenditure on diabetes in 2010 (IDF, 2011). Hospital admission spending for diabetic inpatients with no complications ranged from 11 to 75% of per-capita income. Spending for patients with complications ranged from 6% to over 300% more than spending for patients without complications (Goldhaber-Fiebert JD, Li H, Ratanawijitrasin S, Vidyasagar S, Wang XY, Aljunid S, Shah N, Wang Z, Hirunrassamee S, Bairy KL, Wang J, Saperi S, Nur AM, Eggleston K 2009). Median cost per hospitalization, length of stay during admission, and cost of inpatient admission were all significantly higher for diabetic patients with a co-morbid condition (Tharkar S, Satyavani K, Viswanathan V, 2009). Increase in diabetic patients point to economic burden due to declining work productivity, early retirement, and sometimes premature death (WHO, 2002). An estimate by the International diabetic federation report suggest that more than half of the diabetic deaths are before 60 years of age (IDF, 2012) resulting in loss of productive work years. The prevention and cost effective ways to manage diabetics and non-communicable disease in general is gaining importance. Can countries spend more on health in changing global economic scenario is a question. India is facing an epidemic of diabetes, with growing prevalence (Ramachandran et.al, 2008). This study in this present health scenario is an attempt to understand if the health spending and quality of life are related to empowering knowledge.

Research Methods:

The research goal was to find rationale for Empowering Patient Education Interventions in diabetic care. Main objective was to understand the relationship between relationships between Empowering Knowledge, Health Expenditure among diabetic patients. The study followed descriptive literature review and analysis of empirical studies done on patient empowerment and cost studies.

Background:

The Chronic problems account for 60% of all deaths worldwide, with 80% of those taking place in developing countries taking a disproportionate toll mostly during the prime productivity age (Narayan, Ali & Koplan 2010) bringing huge financial loss to households and to the state economy. In 2004, deaths due to non-communicable diseases in India were twice that of due to communicable diseases (WHO 2010). It is important to note that 40% of all hospital stays and 35% of all outpatient visits globally account for non-communicable diseases (Mahal, Karan & Engelgau 2009). Since many are premature deaths this pose a threat to the economy and the labor market and also put lots of burden on the economy through increasing health expenditure leading to even catastrophic health expenditure (Engelgau, Karan, Mahal 2012). This also influences the poverty incidence due to health care spending, and it has been found that health care spending is an important reason for poverty in India (The Times of India 2010)

Indian Scenario:

Diabetic is one among the four top chronic diseases in India (Tayler, 2010). India is the second most populous country in the world with over 1.2 billion people (Census of India 2011). India is the home for huge number of diabetic population the second largest in the world after china (IDF Diabetic Atlas 2012). Overall, Non Communicable Disease (NCD) is emerging as a leading cause of deaths in India accounting for over 42% of all deaths (Registrar General of India, 2011). It is expected that there will be 69.9 million diabetic patients in India by 2025 (King, Auburt & Herman, 1998) increasing the economic burden. Diabetes is rapidly emerging as

a major health problem in India, particularly in urban areas (Ramachandran & Snehalatha, 2010). Not only in Urban areas a recent study done by the ministry of Health Government of India suggest that there is an increasing incidence of diabetics in rural areas also (MOH,GOI, 2012). International Diabetes Federation (IDF) 2009 report reveals that the total number of diabetic subjects in India is 50.8 million .All chronic conditions require continuous medical care complemented by long-term support from healthcare services. However responding to the care demands of people with chronic conditions is a challenge in most low- and middle-income countries, including India, where the health system is primarily oriented towards the management of infectious diseases and maternal and child healthcare (Reddy, Shah, Varghese & Ramadoss 2005; Venkataraman, Kannan & Mohan, 2009). It is estimated that the overall prevalence of diabetes, hypertension, Ischemic Heart Diseases (IHD) and Stroke is 62.47, 159.46, 37.00 and 1.54 respectively per 1000 population of India (MOH GOI, 2012).The greatest number of people with diabetics is in the age group of 40 to 59 years which is the peak of professional productivity pausing lots of economic implications (IDF, 2012).

Kerala Scenario:

Kerala is a state located in the South West part of India. It is one of the smallest states in terms of geographic area. Kerala as per the 2011 population census has a population of 30.5 million. Kerala has the highest literacy rate (93.91%) and the highest life expectancy (74 Years) in the country. Kerala also stand highest in the number of diabetic patients. Kerala reported a prevalence of diabetes at 20% (Menon, Kumar, Gilchrist, et al, 2006) which is nearly double the diabetic incidence of the whole of India. The studies done in Kerala among the diabetic patients suggest poor adherence to medications and also growing private expenditure on diabetic care (Uma V. Sankar, Kasia Lipska, G. K. Mini, P. S. Sarma, K. R. Thankappan, 2012), pointing to the need of looking at ways to fill the knowledge gaps.

The Need of this Research:

Financial Burden:

By 2030, India's diabetes burden is expected to cross the 100 million mark as against 87 million earlier estimated (Times of India 2011). Poorly managed diabetes leads to serious complication and early death (IDF, 2012). Poorly treated and managed diabetic is also the reasons for increase in the cost of diabetic care. From the present literature it is clear that diabetics is going to make severe burden on the under resourced health care system in India. The literature available on economic evaluation of diabetic or cost analysis of diabetic is very limited in India. Managing complications of diabetes account for nearly 60% of diabetic related direct health care costs and almost 80 to 90 per cent of indirect costs (WHO, 1997). Diabetes also leads to loss in productivity and economic growth and lots of cost on economy and family because of heavy spending (IDF 2010). Epidemiological transition globally and in India particularly made the spending on non-communicable and chronic care an important component of health expenses both private and public.

Economic loss due to chronic ill health is associated not merely with the cost of care but takes a heavy toll in terms of loss in productivity and life years (Wild, Roglic, Green, Sicree & King 2004).Of the total health expenditure 11% is spent on diabetics care in India (IDF, 2011). It is important to note that Indians develop diabetics at an early age that is those younger than 45 years of age account for 36% of diabetics in India (Ramachandran and Snehalatha, 2010). In India, the poorest people with diabetes spend an average of 25% of their income on private care. Most of this money is used to stay alive by avoiding fatally high blood sugar levels (The Indian Express, 2009).On an average people with diabetes are three times more likely to be hospitalized compared to non-diabetic individuals (ADA, 1997).The excess cost is related to higher cost of treating late diabetic complications and the economic loss due to lost man-days or lost economic opportunity. Diabetic complications account for 60% of diabetic related health care costs (Direct costs) and almost 80-90% of indirect cost.⁹ Recent studies have shown that health care expenditures are as much as five times as high for individuals with diabetes compared to individuals without diabetes (Gray A, Raikou M, McGuire A, Fenn P, 2000).

Health Spending and Poverty:

The private spending on health care is high in India compared to other neighboring Asian countries and a major share of private spending is out of pocket spending (World Bank, 2005). Heavy out of pocket Spending on health is also a cause for poverty in India (World Bank 2005). 72% of health care expenses in India are financed through out of pocket payment by households at the point of use of a health service (National Health Accounts 2005). Borrowing is an important strategy for meeting health care expenses in India (World Bank, 2005). In this scenario an increasing economic burden because of the Non Communicable Diseases is an important concern. It is important to understand the most effective spending methods to best address the NCD to minimize economic burden on household and on the economy as a whole. Lower-income groups spent a higher proportion of their income on diabetes care. The highest increase in percentage of household income devoted to diabetes care was in the lowest economic group (Ramachandran A, Ramachandran S, Snehalatha C, Augustine C, Murugesan N, Viswanathan V, Kapur A, Williams R, 2007). The average Indian with diabetics spends US\$575 annually out-of-pocket. Indirectly, it will also cost the diabetics patients another US\$100 or more annually in lost effective work hours while seeking and undergoing diabetic treatment. An estimate done in a

study conducted by MV Hospital for Diabetes and Diabetes Research Centre , in Chennai conclude that for India in 2010 costing US\$31.9 billion to manager diabetics.

A recent study conducted by Kerala Sastra Sahitya Parishad suggest that average annual out-of-pocket spending by a person with chronic illnesses is about Rs.38,000 (The Hindu, 2011). More simply, the substantial money spent on outpatient treatment by households precludes spending on other consumption items thereby diminishing welfare. Many poor households are unable to cope with outpatient spending; around 20% (25%) of untreated illness episodes in urban (rural) areas are untreated due to financial constraints (Selvaraj and Karan 2009). A greater proportion of private health expenditure is for outpatient care than for inpatient care (Bhojani, Devadasan et al. 2012).

Theoretical Framework:

Theory of Empowerment:

Emphasis is increasingly being placed on encouraging patients to play a more active part in their health care (NHS, 1996). The goal of patient empowerment is to prepare patients to make informed choices about their own health (Feste & Anderson, 1995). The Ottawa Charter for Health Promotion (WHO 2008) notes that "people cannot achieve their fullest health potential unless they are able to take control of those things which determine their health". The Ottawa Charter for Health Promotion (WHO, 1986) has made empowerment a key issue in the theory of health-promotion, which focuses on positive health enhancement rather than only ill-health prevention, mainly through the improvement of social conditions (Labonte 1994). The theory of empowerment is becoming more and more important in health care. Health empowerment emphasizes facilitating one's awareness of the ability to participate knowingly in health care decisions (Shearer, 2004). It talks more about the patient autonomy and ability to make decisions about their health care. People understand their needs far better than anyone else and as so should have the power both to define and act upon (Cochran, 1986). In order for people to take power, they need to gain knowledge about themselves and their environment and be willing to identify and work with others for change (McClelland 1975). Empowerment also is about power and power relations (Moscovitch and Drover, 1981). Powerlessness could be understood at the individual level as the expectation of the person that the actions will be ineffective in influencing the outcome (Keiffer, 1984). Empowerment may be considered as a health enhancing process (Jones and Meleis 1993). In the field of health-care, empowerment has been acknowledged as an alternative to compliance in order to guide the provider-patient relationship (Etzwiler 1997, Glasgow, 1999).

Empowering Knowledge:

The empowering knowledge is comprise of patients' previous knowledge, knowledge expectations and received knowledge (Leino-Kilpi & Vuorenheimo, 1994, Leino-Kilpi, Mäenpää & Katajisto, 1999, Heikkinen et al., 2007, Rankinen et al., 2007). The empowerment model promotes a bio psychosocial approach to diabetes care, conceptualizing the state of being empowered as having knowledge about the disease, and self-awareness of values in managing diabetes, personal goals, needs, expectations and priorities—sufficient to make informed decisions in caring for diabetes (Feste C, Anderson RM 1995, Feste CC 1991 & Anderson RM, Funnell MM, Arnold MS 1991). The empowerment approach argues that in caring for their disease diabetic patients make choices each day that affect, and are affected by their emotions, thoughts, values, goals, and other psychosocial aspects of living with this chronic disease (Anderson RM, Funnell MM, Barr PA, Dedrick RF, Davis WK, 1991). The empowering knowledge is divided into six dimensions: bio-physiological (i.e. illness, symptoms, treatment and complications), functional (i.e. mobility, rest and nutrition), experiential (i.e. emotions and hospital experiences), ethical (i.e. rights, duties and participation in decision-making), social (i.e. families, other patients and patients unions), financial (i.e. costs and financial benefits) (Leino-Kilpi & Vuorenheimo, 1994, Leino-Kilpi et al., 1999, Rankinen et al., 2007).

Empowering Knowledge & Diabetics:

Awareness about and understanding of the disease is less than satisfactory among patients, leading to delayed recognition of complications. The cost of treatment, need for lifelong medication, coupled with limited availability of anti-diabetic medications in the public sector and cost in the private sector are important issues for treatment compliance (Venkataraman, Kannan, and Mohan, 2009). Patients' lack of knowledge about diabetes care can impede their ability to manage their disease. This is important as better patient self-management ability is related to improved diabetes control (Heisler M, Smith DM, Hayward RA, Krein SL, Kerr EA, 2003). The awareness about the disease and its complications is also less than satisfactory among patients. Only 23% of self-reported diabetics, in a population based sample in Chennai, knew that diabetes could lead to foot problems, while only 5.8% knew that it could cause a heart attack (Deepa M, Deepa R, Shanthirani CS, Dutta M, Unwin NC, Kapur A, et al, 2005). Compliance to medical advice, for a condition like diabetes, is an expensive affair, with the average cost per annum ranging from Rs 3000 to 10,000 in different studies (Shobhana R, Rao PR, Lavanya A, Williams R, Vijay V, Ramachandran A, 2000) In 2005, the median per annum cost for diabetes care was estimated to be Rs 10,000 for urban, and Rs 6,260 for rural patients (Ramachandran A, Ramachandran S, Snehalatha C, Augustine C, Murugesan N, Viswanathan V, et al, 2007). A recent study suggests in Kerala on diabetic patients suggest diabetic patients receive limited diabetes management knowledge from health

professionals and so poor adherence to treatment. Poor adherence is likely to lead to increased complications of diabetes resulting in increased costs of health care and increased morbidity and mortality for the population in the long term (Uma V. Sankar, Kasia Lipska, Mini G. K., Sarma P. S., Thankappan K. R., 2013). The ultimate goal of patient education is to empower patients to make decisions and participate in their own care and the knowledge can be understood as the basic element in the empowerment process (Gibson 1991, Leino-Kilpi et al. 1993, 1998, 2005). The concept of Empowerment in health care means the functional entity through which patients experience control over their health problems and the consequences (Leino-Kilpi et al. 1998). Participatory learning strategies that treat people as active subjects of their own learning can have the effect of changing pattern of dependence by providing and reinforcing empowering experiences (Roter et al. 2001).

Conclusion and further Research:

Designing culturally-sensitive personalized interventions is essential to sustain patients' involvement in their treatment, and encourage patients to take an active role in their own health and health care. We consider patient activation and empowerment as a cyclical process defined through patient accumulation of knowledge, confidence, and self-determination for their own health and health care. We propose a patient-centered, multi-level activation and empowerment framework (individual-, health care professional-, community-, and health care delivery system-level) to inform the development of culturally informed personalized patient activation and empowerment (P-PAE) interventions to improve population health, and reduce racial and ethnic disparities. We discuss relevant Affordable Care Act payment and delivery policy reforms, and how they impact patient activation and empowerment. Such policies include Accountable Care Organizations and Value Based Purchasing, Patient Centered Medical Homes, and the Community Health Benefit. Challenges and possible solutions to implementing the P-PAE are discussed. Comprehensive and longitudinal data sets with consistent P-PAE measures are needed to conduct comparative effectiveness analyses to evaluate the optimal P-PAE model. We believe the P-PAE model is timely and sustainable, and will be critical to engaging patients in their treatment, developing patients' abilities to manage their health, helping patients to express concerns and preferences regarding treatment, empowering patients to ask questions about treatment options, and building up strategic patient-provider partnerships through shared decision making

References:

1. ADA (1998), Economic Consequences of Diabetes Mellitus in the US in 1997. *Diabetes care* 1998; 21:296-309.
2. Ahuja MMS (1979). Epidemiological Studies on Diabetes Mellitus in India. In: Ahuja MMS, editor. *Epidemiology of diabetes in developing countries*. New Delhi: Interprint; 1979 p. 29-38.
3. American Diabetes Association (2003). Economic Costs of Diabetes in the U.S. in 2002. *Diabetes Care* 2003, 26: 917-932
4. Anderson RM, Funnell MM, Barr PA, Dedrick RF, Davis WK (1991). Learning to empower patients. *Diabetes Care* 1991; 14:584-90.
5. Anderson RM, Funnell MM, Arnold MS (1991). Beyond compliance and glucose: educating for patient empowerment. In: Ribken H, Caldwell JA, Taylor SI, editors. *Diabetes*. New York: Elsevier, 1991. p. 1285-9.
6. Anil Kapur (2007): Economic Analysis of Diabetes Care. *Indian J Med Res* 125, March 2007, pp 473-482
7. Balagopal Padmini, Kamalamma Thakore N, Patel G, Misra Ranjita (2008). A Community-Based Diabetes Prevention and Management Education Program in a Rural Village in India, American Diabetes Association, Inc., 2008.
8. Bhojani Upendra, Thriveni B S, Devadasan Roopa, Munegowda CM, Devadasan, N, Kolsteren Patrick, Criel Bart (2012). Out of pocket health care payments on chronic conditions impoverish urban poor in Bangalore, India. *BMC Public Health*, 2012.
9. Chew LD (2004). The Impact of Low Health Literacy on Diabetes Outcomes. *Diabetes Voice* 2004; 49:30-2.
10. Cochran, M. (1986). The parental empowerment process: Building on family strengths. In J. Harris (Ed.), *Child psychology in action: Linking research and practice* (pp.12-33). Brookline, MA: Croon Helm Publishers.
11. Copanitsanou, P., Sourtzi, P., Johansson, K. & Lemonidou, C (2009). Pilot study on the existence of empowering education of orthopaedic patients in Greece. *Journal of Orthopaedic Nursing* 13(4), 211-212.
12. Cornell Empowerment Group. (1989, October). Empowerment and family support. *Networking Bulletin*, 1(1)2.
13. Deepa M, Deepa R, Shanthirani CS, Dutta M, Unwin NC, Kapur A (2005). Awareness and knowledge of diabetes in Chennai – The Chennai Urban Rural Epidemiology Study (CURES.-9) *J Assoc Phys India*. 2005;53:283

14. Diabetes Research Centre, M.V. Hospital for Diabetes, WHO Collaborating Centre for Research, Education and Training in Diabetes, 4 Main Road, Royapuram, Chennai 600 013, India.
15. Drummond MF, O'Brien B, Stoddart GL, Torrance GW (1997). *Methods for the Economic Evaluation of Health Care Programs*, 2nd. Ed. Oxford: OUP.
16. Engalgau M M, Karan A, Mahal A (2012). The Economic impact of Non-communicable Diseases on households in India. *Global Health*. 2012 Apr 25; 8:9.
17. Etzwiler DD (1997). Chronic care: a need in search of a system. *Diabetes Educ* 1997; 23:569–73.
18. Feste Catherine & Anderson Robert M (1995) *Empowerment: from philosophy to practice*, Patient Education and Counseling 26 (1995)
19. Feste CC (1991). A practical look at patient empowerment. *Diabetes Care* 1992; 15:922–5.
20. Funnell, MM, Anderson, RM, Arnold MS, Barr PA, Donnelly MB, Johnson PD, Taylor-Moon D, White NH (1991). Empowerment: an idea whose time has come in diabetes education. *Diabetes Educ* 17:37–41, 1991
21. Garber A M, Phelps CE (1997). Economic Foundations of Cost-Effectiveness Analysis. *Journal of Health Economics* 1997, 16:1-31
22. Glasgow RE, Anderson RM (1999). In diabetes care, moving from compliance to adherence is not enough. *Diabetes Care* 1999; 22:2090–2.
23. Goldhaber-Fiebert JD, Li H, Ratanawijitrasin S, Vidyasagar S, Wang XY, Aljunid S, Shah N, Wang Z, Hirunrassamee S, Bairy KL, Wang J, Saperi S, Nur AM, Eggleston K (2009). Inpatient treatment of diabetic patients in Asia: evidence from India, China, Thailand and Malaysia. *Diabet Med*. 2010 Jan; 27(1):101-8.
24. Gold MR, Siegel JE, Russel LB, Weinstein MC (1996). *Cost-Effectiveness in Health and Medicine*. NY and Oxford: OUP 1996.
25. Gray A, Raikou M, McGuire A, Fenn P (2000). United Kingdom Prospective Diabetes Study Group. Cost effectiveness of an intensive blood glucose policy in patients with Type 2 diabetes: economic analysis alongside randomized controlled trial (UKPDS 41). *BMJ* 2000; 320: 1373- 1378.
26. Heisler M, Smith DM, Hayward RA, Krein SL, Kerr EA (2003). How well do patients' assessments of their diabetes self-management correlate with actual glycemic control and receipt of recommended diabetes services? *Diabetes Care*. 2003; 26:738–43. [PubMed]
27. Heikkinen K, Helena LK, Taina N, Anne K, Sanna S (2008). A comparison of two educational interventions for the cognitive empowerment of ambulatory orthopaedic surgery patients. *Patient Educ Couns*. 2008 Nov; 73(2):272-9. doi: 10.1016/j.pec.2008.06.015.
28. International Diabetic Federation (2011). *Economic Impact of Diabetics*. IDF Diabetic Atlas Fourth Edition.
29. Jones P.S and Meleis A.I (1993). Health is empowerment. *Adv Nurs Sci*, 15 (1993), pp. 1–14
30. Johansson, K., Hupli, M. & Salanterä, S (2002). Patient's learning needs after hip arthroplasty. *Journal of Clinical Nursing* 11, 634–9.
31. Johansson, K., Salanterä, S., Katajisto, J. & Leino-Kilpi, H (2004). Written orthopedic patient education materials from the point of view of empowerment by education. *Patient Education and Counseling* 52, 175–81.
32. Johansson, K., Nuutila, L, Virtanen, H., Katajisto, J. & Salanterä, S (2005). Preoperative education for orthopaedic patients: systematic review. *Journal of Advanced Nursing* 50, 212–23.
33. Keiffer, C. (1984). Citizen empowerment: A developmental perspective. *Prevention in Human Services*, 3(16),
34. Kutty VR, Soman CR, Joseph A, Pisharody R, Vijayakumar K (2000). Type 2 Diabetes in Southern Kerala: Variation in Prevalence among Geographic Divisions within a Region. *Indian Journal of Medical Research*. 2000; 13(6):287-292.
35. Labonte R (1994). Health promotion and empowerment: reflections on professional practice *Health Educ Quart*, 21 (1994), pp. 253–268
36. Leino-Kilpi H & Vuorenheimo J. 1994. The Patient's Perspective on Nursing Quality: Developing a Framework for Evaluation. *International Journal for Quality in Health Care* 6(1), 85–95.
37. Leino-kilpi H, Maenpää I, Katajisto J (1993). Nursing study of the significance of rheumatoid arthritis as perceived by patients using the concept of empowerment. *Journal of Orthopedic Nursing* 1993.3.
38. Leino-Kilpi H, Luoto, Katajisto J (1998). Elements of empowerment and MS patients. *Journal of Neuro science Nursing* 1998.
39. Leino-Kilpi H, Mäenpää I & Katajisto J (1999). Nursing study of the significance of rheumatoid arthritis as perceived by patients using the concept of empowerment. *Journal of Orthopedic Nursing* 3, 138–145.

40. Leino-Kilpi H, Johansson K, Heikkinen K, Kalijonen A, Virtanen H, Salanterä S (2005). Patient education and health related quality of life. Surgical hospital patient as a case in point. *Journal of Nursing care Quality* 2005;20 307.
41. Leino-Kilpi H(2012). Empowering patient education – a challenge for the future. 25th Anniversary Symposium of the University of Akureyri, Iceland, 25.5.2012. Keynote presentation.
42. Lopez-Stewart G, Tambascia M, Rosas-Guzmán J, Etchegoyen F, Ortega-Carrión J, Artemenko S (2007). Control of Type 2 Diabetes Mellitus among General Practitioners in Private Practice in nine countries of Latin America. *Rev Panam Salud Pública* 2007; 22:12-20.
43. Mahal, A., Karan, A., Engalgau, M (2009). The Economic Implications of Non-Communicable Disease for India. The International Bank for Reconstruction and Development / The World Bank, Washington DC.
44. McClelland, D. C. (1975). *Power: The inner experience*. New York: Irvington Press
45. Menon VU, Kumar KV, Gilchrist A (2006). Prevalence of known and Undetected Diabetes and Associated Risk Factors in Central Kerala – ADEPS. *Diabetes Res Clin Pract.* Dec 2006; 74(3):289-294.
46. Moscovitch, A. and Drover, G. (1981). *Inequality: Essays on the political economy of social welfare*. Toronto: University of Toronto Press.
47. Montin, L., Johansson, K., Kettunen, J., Katajisto, J., Leino-Kilpi, H (2010). Total joint arthroplasty patients' perception of received knowledge of care. *Orthopaedic Nursing* 29(4), 246-253.
48. MV Hospital for Diabetes and Diabetes Research Centre (2010). *The Socio-Economics of Diabetes from a Developing Country: A Population Based Cost of Illness Study*, Chennai, India, 2010.
49. Narayan, K. M. V., Ali M. K., Koplan J.P (2010). Global Non-Communicable Diseases – Where Worlds Meet. *N Engl J Med* 2010, 363:1196-1198
50. National Health Accounts (2005). *National Health Accounts India 2004–05*. New Delhi: Ministry of Health and Family Welfare, Government of India.
51. NHS (19996). *Quality and consumers branch. Patient partnership: building a collaborative strategy*. NHS Executive. Leeds; 1996.
52. Pradhan, M., and N. Prescott. 2002. “Social Risk Management Options for Medical Care in Indonesia.” *Health Economics* 11: 431–46.
53. Ramachandran A, Jali M V, Mohan V, Snehalatha C, Vishwanathan M (1988). High Prevalence of Diabetes in Urban Population in South India. *British Medical Journal*, 297 (1988), pp. 587–590
54. Ramachandran A, Snehalatha C, Baskar ADS, Mary S, Kumar CK, Selvam S (2004). Temporal Changes in Prevalence of Diabetes and Impaired Glucose Tolerance Associated with Lifestyle Transition Occurring in the Rural Population in India. *Diabetologia* 2004; 47: 860-5.
55. Ramachandran A, Ramachandran S, Snehalatha C, Augustine C, Murugesan N, Viswanathan V, et al (2007). Increasing Expenditure on Health Care Incurred by Diabetic Subjects in a Developing Country – A study from India. *Diabetes Care.* 2007; 30:252–6. [PubMed]
56. Ramachandran A, Mary S, Yamuna A, Murugesan N, Snehalatha C (2008). High prevalence of diabetes and cardiovascular risk factors associated with urbanization in India. *Diabetes Care.* May 2008; 31(5):893-898.
57. Ramachandran A, Wan Ma RC, Snehalatha C (2010). Diabetes in Asia. *Lancet*;375:408–18, 2010
58. Ranson, M. K. 2002. “Reduction of Catastrophic Health Care Expenditures by a Community- Based Health Insurance Scheme in Gujarat, India: Current Experiences and Challenges.” *Bulletin of the World Health Organization* 80(8): 613–21.
59. Rankinen S, Salanterä S, Heikkinen K, Johansson K, Kalijonen A, Virtanen H & Leino-Kilpi H (2007). Expectations and received knowledge by surgical patients. *International Journal of Quality in Health Care* 19(2), 113–119.
60. Rantanen, M., Kallio, T., Johansson, K., Salanterä, S., Virtanen, H. & Leino-Kilpi, H (2008). Knowledge expectations of patients on dialysis treatment. *Nephrology Nursing Journal.* 35(3), 249-255.
61. Rayappa, PH, Raju KNM, Kapur Anil, Bjork Stefan, Sylvest Camilla, Kumar Dilip KM (1999) Economic Cost of Diabetic Care: The Bangalore Urban District Diabetic Study. *Int. J. Diab. Dev Countries* (1999), VOL. 19
62. Reddy KS, Prabhakaran D, Chaturvedi V (2006). Methods for Establishing a Surveillance System for Cardiovascular Diseases in Indian industrial populations. *Bull WHO.* Jun 2006; 84(6):461-469.
63. Reddy KS, Shah B, Varghese C, Ramadoss A (2005). Responding to the Threat of Chronic Diseases in India. *Lancet* 2005, 366:1744–1749.
64. Rema M, Deepa R, Mohan V (2000). Prevalence of Retinopathy at Diagnosis among Type 2 Diabetic Patients Attending a Diabetic Centre in South India. *British Journal of Ophthalmology.* 2000; 84:1058 60. (PMC Free Article, PUBMED)

65. Roter L debra, Margalit Ruth Stashefsky, Rudd Rima (2001). Current Perspectives on Patient Education in the US. *Patient Education and Counseling* 44 79 – 86 (2001)
66. Russell, S. 2004. "The Economic Burden of Illness for Households in Developing Countries: A Review of Studies Focusing on Malaria, Tuberculosis, and Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome." *American Journal of Tropical Medicine and Hygiene* 71(Supp. 2): 147–55.
67. Schulper M (2001). The Role and Estimation of Productivity Costs in Economic Evaluation. Chapter 5 in: Drummond M, McGuire A (eds.): *Economic Evaluation in Health Care –merging theory with practice*. Oxford: Oxford University Press.
68. Selvaraj S, Karan AK (2009). Deepening health insecurity in India: evidence from National Sample Surveys since 1980s. *Economic & Political Weekly* 2009; 44:55-60.
69. Shah B, Mathur P. Surveillance of Cardiovascular Disease Risk Factors in India: The Need & Scope. *Indian Journal of Medical Research*, Nov 2010; 132(5):634-642.
70. Shearer NBC (2004). Relationships of contextual and relational factors to health empowerment in women. *Research and theory for nursing practice*. 2004; 18:357–370.
71. Shobana R, Augustine C, Ramachandran A, Vijay V (2005). Improving Psychosocial Care: The Indian experience. *Diabetes Voice* 2005; 50:19–21.
72. Shobhana R, Rao PR, Lavanya A, Williams R, Vijay V, Ramachandran A (2000). Expenditure on health care incurred by diabetic subjects in a developing country – a study from southern India. *Diab Res Clin Pract*. 2000; 48:37–42. [PubMed]
73. Simmons R.K, Unwin N, Griffin SJ (2011) International Diabetes Federation: an update of the evidence concerning the prevention of type 2 diabetes. *IDF Diabetes Atlas fourth edition, Prevention of Type II diabetics* 2011.
74. Spero David (2007): *Motivating and Enabling Self-Care in Diabetes*, *Alternative Journal of Nursing* March 2007, Issue 13
75. Strong K, Wald N, Miller A, Alwan A (2005). Current Concepts in Screening for Non Communicable Diseases: World Health Organization Consultation Group Report on methodology of Non Communicable Disease screening. *Journal Of medical Screening* 2005;12:12–9. (Pub Med).
76. Taylor Wayne, D (2010). *The Burden of Non-Communicable Diseases in India*. The Cameron Institute, Oct. 2010.
77. *The Indian Express* (2009). India has largest number of diabetes patients: Report, by Teena Thacker, New Delhi, Oct 29, 2009.
78. *The Hindu* (2011). Out-of-pocket health expenditure rising in State, Reported by C Maya, *The Hindu Daily*, Thiruvananthapuram, Dec 14, 2011
79. Thankappan K R, Shah B, Mathur P (2010). Risk Factor Profile for Chronic Non-Communicable Diseases: Results of a Community-Based Study in Kerala, India. *Indian Journal of Medical Research*, Jan 2010; 131:53-63.
80. Tharkar S, Satyavani K, Viswanathan V (2009). Cost of medical care among type 2 diabetic patients with a co-morbid condition--hypertension in India. *Diabetes Res Clin Pract*. 2009 Feb; 83(2):263-7. doi: 10.1016/j.diabres.2008.11.027. Epub 2008 Dec 31.
81. Uma V. Sankar, Kasia Lipska, Mini G. K., Sarma P. S., Thankappan K. R (2013). The Adherence to Medications in Diabetic Patients in Rural Kerala, India. *Asia-Pacific Journal of Public Health* XX(X) 1–11
82. Vaartio-Rajalin, H. & Leino-Kilpi, H (2011). Nurses as patient advocates in oncologic care – considerations based on literature. *Clinical Journal of Oncologic Nursing* 15(5), 526-532.
83. Venkataraman K, Kannan AT, Mohan V (2009). Challenges in Diabetes Management with Particular Reference to India. *Int J Diabetes Dev Countries* 29(3):103–109.
84. Virtanen Heli , Leino-Kilpi Helena, Salanterä Sanna (2007). Empowering discourse in patient education, *Patient Education and Counseling*, Volume 66, Issue 2, May 2007, Pages 140–146
85. Wagstaff, A., and E. van Doorslaer. 2003. "Catastrophe and Impoverishment in Paying for Health Care: with Applications to Vietnam 1993–98." *Health Economics* 12: 921–34.
86. WHO (1997). *The Economics of Diabetes and Diabetes Care - A Report of Diabetes Health Economics Study Group*. Gruber W, Lander T, Leese B, Songer T, Williams R, editors. An IDF,WHO Publication; 1997.
87. WHO (2002). *The World Health Report 2002: reducing risks, promoting healthy life*. Geneva: World Health Organization; 2002.
88. WHO (2007). *Everybody's Business: Strengthening Health Systems to Improve Health Outcomes: WHO's framework for action*. Geneva: WHO Press; 2007.
89. WHO (2010). *World Health Statistics*. World Health Organization, Geneva.
90. WHO, 2012. *World Health Statistics*, World Health Organization , Geneva

91. WHO (1986). The Ottawa Charter for Health Promotion; WHO, Geneva, 1986.
92. WHO (19916). Health and Welfare Canada, Canadian Public Health organization. Ottawa Charter for Health Promotion. Proceedings from International Conference on Health Promotion. Ottawa.
93. Wild S, Roglic G, Green A, Sicree R, King H (2004). Global Prevalence of Diabetes, Estimates for The year 2000 and Projection for 2030. *Diabetes Care* 2004; 27: 1047-53.
94. Wallerstein N (1992). Powerlessness, empowerment and health: implications for health promotion programs, *Am J Health Promot*, 6 (1992), pp. 197–205
95. Xu, K., D. E. Evans, K. Kawabate, R. Zeramdini, J. Klavus, and C. J. L. Murray. 2003. "Household Catastrophic Health Expenditure: A Multi country Analysis." *Lancet* 362: 111–17.