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Conference on Ageing and health economics

Introduction

The conference communications published in this issue of the journal were presented at Conference on Ageing and Health Economics organized by Deusto University in October 2012 within the framework of the Masters "Sustainable Regional Health Systems". REGHEALTH. This masters programme's theme and approach is important for European competitiveness. Regional economies are the building blocks of Europe and world's competitiveness. The REGHEALTH programme focuses on issues concerning managing and planning of the regional health systems in different regions of the EU thus striving to achieve the Lisbon agenda goals and to develop the comprehensive health systems based on quality in order to reach the objectives set by the knowledge based society

Economy is a social science where politics, figures and reflexion have always as much influence as rationality and markets. Until recently most economists have not been aware of the impact of health policies in the sustainability of GDP beyond the health levels. Nowadays is been recognized the key role of the health sector in employment. Health sector employs 10% of the total workforce in Europe and appears as a stabilizing sector. The health sector also is crucial in capital investments, has an important purchasing process, and is totally influential in the technology innovation of the production system in general, and most of all in the knowledge based production system where European Unions is willing to become the most competitive region in the World.

In the other side aging is now the core change of this entire scenario. Europe is going to have a challenging problem of the aging population in the coming decades. The prospective percentage of those aged 65 years or over will count for 29.5% of the population in 2050 while they count now close to 20% (19.51% in Basque Country). Just now this demographic situation is one of the keys of the socioeconomic crisis we are living. The direct effects of this multidimensional crisis on health are still unclear and few changes in health system expenditure have been observed to cope with it. The crisis may lead to less healthy lifestyle choices or riskier behaviour and evidence from past crises calls for determination in action.

In this Conference we reflect about four aspects of this scenario within a positive and proactive position. Until now theories – what exists concerning our understanding of growing older – the discipline of social gerontology is still characterised by being "data rich and theory poor". Social gerontology is a multidisciplinary field of inquiry; it needs to understand individual (changing) lives in the context of (changing) social structures and institutions. We need to understand better life course transition to the older age. The heterogeneity of people in the third age is a distinguishing characteristic. Older adults possess different forms of cultural capital. There are many ways to view growing older – young-old, old-old which will impact upon health systems. In the "third age" the person exercises a more autonomous position having made the transition from taking responsibility for others. Older people are a resource and can contribute to the vision and ways that systems operate.

But older population is the most frequent user of health care resources and more than 50% of farmaceutical budget is going to cope with the needs of people over 70 y.o. Information on the age sttructure of the costs of acute health care and long-term care indicate that health-care costs increase sharply with age. In this Conference we reflect about some of the chalenges of this situation, and we are dealing with some of the strategies been developed to cope with them. Many European countries have adopted home care as a cost-effective solution (prevention of reliance on institutionalized care and hospitalization) aimed at tackling the health problems of elderly and disabled people with more satisfaction of the clients while they are maintained in their homes and communities. Mental health is the problem with higest incidence in elderly. The growing prevalence Alzheimer's disease and other related dementia are showing must be considered in the moment of organizizng health resources. All these questions present a challenge to the production of commodities system that we want to deal with also in this conference.

J. Agustin Ozamiz,
Academic Director of the master REGHEALTH

SUSTAINABLE REGIONAL HEALTH SYSTEMS

Ageing and chronic, severe, mental illness

Javier I Escobar*

MD, Associate Dean for Global health and Professor of Psychiatry and Family Medicine, UMDNJ-Robert Wood Johnson Medical School

A B S T R A C T

This paper outlines the background and introductory comments that I provided as chair of the session "Chronic, severe mental disorders: Impact of ageing on the course and management of mental disorders" that took place at the Universidad de Deusto, Bilbao, Spain, October 1st, 2012. The speakers, besides myself, were Professors Roberto Zarate from UCLA and Jose Guimon from Universidad del Pais Vasco.

Introduction

Mental disorders are among the most disabling medical problems in the world. The WHO includes four major mental disorders among the top 10 most costly and disabling diseases. These include depression, bipolar disorder, addictions and schizophrenia. In this presentation, I will highlight the impact of ageing on the clinical and therapeutic aspects of these disorders.

Consequences of the Ageing Process

Ageing is a developmental process whose perspectives, expectations and outcomes are affected by generational shifts and scientific advances. Unfortunately, there is little large-scale international research in the area of ageing and mental disorders. One of the best studies available is a study of community seniors in San Diego, California. This study provides important insights on the ageing process as well as the mental consequences of ageing (Montross et al, 2006). This study assessed more than 3,000 individuals between the ages of 60 and 102 years and found, among other things, that "healthy" ageing, meaning absence of major disease, is present in less than 20% of all elders.

Ageing, Health and Mental Health

In the above study of seniors, it was observed that while the "physical component" of health-related quality of life progressively declined with age, curiously, the "mental component" (psychological satisfaction and absence of major "stress") actually improved, with those over 90 years indicating greater satisfaction. Besides the maturity, resilience and realism attained with advancing age, this finding may reflect unique socio-demographic factors operating in this middle class population of a rather wealthy North American city.

Ageing "Celebrities"

The news media often displays "celebrities" that boast about the positive impact of ageing and experience in their lives. In our field of neuroscience, these include the famed neurologist and Nobel laureate Rita Levi Montalcini who died recently at the age of 103 years and who was quoted in her 100th birthday as saying: "My mind is sharper today than when I was 20 years of age". Also, Eric Kandel, a neuroscientist and also Nobel laureate stated at his 77th birthday: "I think I do science better now that I did when I was younger". Kandel recently wrote "the age of insight", a remarkable book covering his experiences from Vienna in the early 1900's to the present (Kandel 2012).

The term "chronic, severe mental disorders" refers to disorders such as chronic recurrent depression and its consequences (e.g., suicide), bipolar disorder, psychotic disorders (e.g., schizophrenia) and dementias (e.g., Alzheimer's disease). Below, I will provide brief reviews of studies examining the impact of ageing on clinical and therapeutic aspects of these disorders.

* Corresponding author: escobaja@umdnj.edu

Chronic Depression

In older people, depression is most common in the presence of chronic medical illness (e.g., arteriosclerosis, inflammatory, endocrine, immune changes) and psychosocial adversity. Research in this area shows that clinically, similar symptoms occur as in other age groups and that treatments for depression appear to be as effective in the elderly as in the case of younger adults (Alexopoulos 2005).

Bipolar Disorder in Older Adults

Overall, little systematic information is available on ageing and bipolar illness. A review of 61 studies by Depp and Jeste (2004) suggests that prevalence of bipolar disorder decreases as people age. However, it still comprises 8-10% of "late life" psychiatric admissions. In older people, bipolar disorder appears to be associated with neurological problems and it tends to be a heterogeneous life-long illness. There is no consistent evidence for impact of age on treatment response.

Suicide in Older Adults

In the United States, people over the age of 65 are 12% of the total population but comprise over 16% of those who die from suicide. For each 100,000 individuals, 15 of those over the age of 65 die from suicide compared to 11 for the general population. 50/100,000 individuals over the age of 65 dying from suicide are non-Hispanic Whites. Ethnic minorities (e.g., Hispanics) appear to have lower suicide rates than Whites, although rates for minority groups have been increasing.

Schizophrenia

Another Nobel laureate, John Nash, currently in his 80's, is one of the best-known individuals with schizophrenia that had high levels of attainment (Nasser 1998).

Clinically, his illness, his adherence and response to treatment appeared to improve with age. Professor Nash has been invited to many international conferences and I personally joined him at a meeting of Spanish psychiatrists in Madrid about a decade ago.

The study of the University of California San Diego Group (Jeste et al, 2003; Folsom et al, 2009) stands out in the field. They recruited over 1200 people with schizophrenia and have followed them prospectively since 1987.

Their data shows that schizophrenia tends to have a relatively stable, non-deteriorating course in older people, and that there is progressive improvement in adherence to treatment and psychotic symptoms as people age. About 10% of the older patients with schizophrenia are able to live independently. Predictors of sustained remission are social support, marital status (being married) and higher levels of cognitive functioning (Auslander and Jeste, 2004).

Alzheimer's Disease

This is the psychiatric/neurological disorder most commonly associated with ageing as symptoms typically start after age 60. It is the most common form of dementia in the elderly (about one half of all dementias) and its incidence rises dramatically as the population ages. About one out of each individuals age 65 or older have AD. After age 85, nearly 50% of individuals will have AD.

Unfortunately, treatments for AD are few (only 3 drugs currently approved for use) and not very effective. However, new developments stimulated by global collaborations look promising. A $ 100 million prevention trial in Colombia, South America, with crenezumab, an amyloid inhibitor, is being carried out on a unique population ("paisa" population) with early onset Alzheimer's due to a genetic mutation (The New York Times 2012).

Conclusions

Due to their life-long course, chronic, severe mental disorders continue to affect populations during their senior years. While for most disorders, symptoms and prevalence may decline with age, management of these disorders adds significantly to the cost of health care. Clearly, systematic, global studies are badly needed on ageing and mental disorders.

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SUSTAINABLE REGIONAL HEALTH SYSTEMS

Finland and challenges of the ageing population

Esko Hänninen*

Senior Expert at J&EH Services Ltd

The paper is based on the article of *Veli Laine* and Mart *Maiväli* and the material of the Ministry of Social Affairs and Health in Finland.

A B S T R A C T

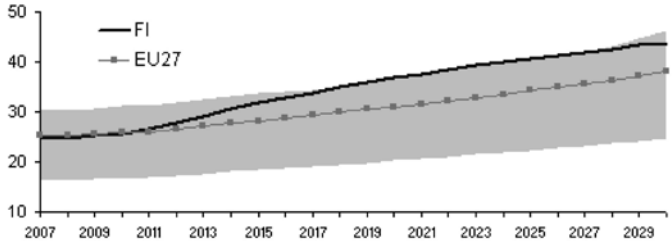
The ageing is especially pressing in Finland, where the demographic shift will take place sooner and initially also more rapidly than in the other EU Member States. The population ageing challenge is multifaceted, having repercussions on the labour market, economic growth potential and public finances. Finland has already taken action over the past decade to prepare for the demographic shift and provides useful lessons for other Member States. Given that - even within an integrated EU - the setup of public services, the labour market and the structure of the economy show large variations among countries; the appropriate policy responses to the population ageing challenges will have to be custom designed.
The main features of the Finnish strategy to counter the effects of population ageing have been extensive and long-lasting pre-funding of future pension expenditures, as well as actions to postpone retirement and to increase the productivity and efficiency of ageing related services, which in the Finnish case are primarily provided by the local governments. However, given the still large sustainability gap, additional measures are needed. Further increases in the length of working lives and productivity & enhancing reforms to public services would alleviate the pressures from population ageing at both the national and the local-government levels.

The population ageing challenge in Finland

Although in a European comparison Finnish public finances appear relatively strong, Finland will be one of the first member states where the adverse effects of an ageing population will kick in and start to erode the strength of public finances (Graph 1).

The Finnish welfare system consists of two main elements, the pension system and publicly-financed services, where many principal services related to ageing (like healthcare and old age care) are provided by the local governments. The projected increase in age-related expenditure is higher in Finland than on average in the EU and is mainly driven by pension and long-term-care expenditures (increasing by 2.6 p.p. and 2.5 p.p. respectively in 2060 relative to 2010), while the ratio of health care expenditure to GDP increases by 0.8 p.p. Public finances will come under additional stress due to weaker tax revenues in a setting of lower economic growth potential.e

The available long-term projection in the 2009 Ageing Report shows that, in the absence of an early and ambitious effort to consolidate government accounts and structural reforms, there would be high increases in pension expenditure, costs of age-related services and inevitably public debt. Rising government expenditure and prospects of an ever-increasing debt would pose an obstacle to a sustained and long lasting recovery from the present crisis and the achievement of balanced economic growth. The crisis-related fiscal expansions and the ageing of the population raise questions about the sustainability of public finances. Sustainability relates to the ability of a government to assume the financial burden of its debt both currently and in the future.



Source: Eurostat, EUROPOP 2008

Graph 1: *Old-age dependency ratio in Finland and the EU27*

* Corresponding author: hanninen.esko@gmail.com

The most widely used indicator in the EU to measure the sustainability challenges that Member States face, the S2 indicator, shows the durable adjustment of the current primary balance required to comply with the infinite horizon budget constraints, including paying for any additional expenditure arising from an ageing population. The sustainability analysis shows that on the basis of the budgetary position of 2009, the 2010 Commission services' spring forecast, and the projected increases in age related expenditure, Finland has a sustainability gap (S2) of 4.2% of GDP, which is below the EU average (7.4% of GDP).2 This means that to put public finances on a sustainable path, Finland would need to improve its structural primary balance in a durable manner by 4.2% of GDP. In principle, this adjustment could take place via both an increase in revenues, including the pension contributions, and cuts in expenditure. Alternatively, the social protection system would have to be reformed in order to decelerate the projected increase in age-related expenditure.

Adjusting the pension system in Finland

Finland's earnings-related pension system is a partially pre-funded, defined-benefit system in which the benefits are determined according to the length of employment and the level of earnings. Due to extensive prefunding, pension funds have accumulated assets amounting to over 60 % of GDP in 2009. This will somewhat alleviate the pressures on financing rising pension expenditures. The pre-funding is collective and it does not directly affect the level of pension; rather it is intended to even out the pension contribution rate over time.

The change in pension expenditure is most rapid in the private sector pension scheme, where the earnings-related pensions in relation to GDP are projected to increase from 4.7 per cent in 2007 to 7.6 per cent in 2030, after which the rise becomes very modest. By contrast the public sector (local and central government) pensions (% of GDP) are projected to increase only slightly by 2029 and decrease thereafter. Pension reforms3 have reduced the generosity of pensions in the public sector, where the average level of pensions will gradually converge to that of private sector.

A major reform in the Finnish private-sector earnings-related pension system came into effect in 2005. The reform rewarded the postponement of retirement and restricted access to early retirement, thereby resulting in increased labour supply and higher employment rates of older workers with consequently positive welfare effects. The reforms aimed to curb the foreseen increase in the contribution rate without endangering the adequacy of replacement rates. Due to the so called "life-expectancy coefficient", a parameter that reduces the level of new pensions as longevity increases, the new system also responds rather well to uncertain future demographics. Despite the apparent successes of raising the retirement age and curbing the required increase in contribution rates, the rise in pension expenditure is still projected to be above the EU average.

Adjusting the local governments

Municipalities play a relatively large role in the Finnish economy and in the public sector. International comparisons show that the expenditure-to-GDP ratio of Finnish local governments is the third highest in the EU, surpassed only by Denmark and Sweden. In Finland municipalities have the responsibility of providing most of the public services, like healthcare, long-term care, education, social and cultural services. Consequently, they account for about 75% of general government employment (ca 20% of total national employment) and they largely determine the overall public sector employment trends. Wage costs account for about a half of municipal expenditure. Nevertheless, in terms of aggregate expenditure, municipalities spend slightly less than the central government, largely because social transfers are part of the central government budget.

Due to the setup of public service provision in Finland, all the major ageing-related services fall under the responsibility of local governments. Output in the age-related services should grow to match population ageing, which would entail pressures to increase staff numbers proportionately. The evolution of both municipal staff numbers and wages is a significant determinant of public expenditure pressures. Over the past decade, even in the absence of population ageing costs, expenditure has already consistently grown faster in local governments than in the central government. Local government expenditure growth has accounted for close to half of the general government expenditure increases.

The local governments (municipalities), having been constitutionally granted self-governance rights, cannot be bound by similarly concrete targets set by the central government. The re-organisation of municipal services and structures is intended to take place through soft enforcement and incentives. To this end, a framework law promoting the reform of the structure of local governments and their service provision was passed by the parliament in the beginning of 2007. The reform aims to achieve an increase in productivity and efficiency through both economies of scale (forming larger municipalities) and innovations in service provision. An important facet of the reform is redesigning the state transfer system to local governments aimed at enhancing productivity and cost-efficiency incentives within the transfer system.

Currently, most progress has been made in forming larger municipal entities. The smaller municipalities are obliged either to merge with other municipalities or alternatively to form municipal partnership areas (joint municipal boards). However, as roughly one tenth of the largest municipalities account for two thirds of population and expenditure, it is not the mergers per se, but the service reforms in the biggest municipalities that will determine the overall outcome. While some concrete changes are already evident in many municipalities, for the most part the service provision reforms still have to move to the implementation phase. In practice this means various innovations in service provision, more effective use of ICT, possibly a greater involvement of the private and non-profit sectors, identification and dissemination of best practices, etc.

Act on Care Services for Older People to ensure a high standard of quality nationwide

The Act on Care Services for Older People enters into force in July 2013. The purpose of the Act is to ensure that older people will obtain individual care services and caring according to their needs on an equal basis throughout the country by means of quality social and health care services.

The Act gives precedence to services provided at home. Institutional long-term care can be provided only if it is medically justified or if it is otherwise appropriate to ensure a dignified life and safe care for an older person. Permanence of care arrangements must be ensured. Persons in long-term care need to be provided with opportunities for social interaction and meaningful activities. Elderly couples, whether married or not, have to be offered the option of cohabitation in long-term care.

The Act guarantees older persons the right to a comprehensive evaluation of service needs without delay. The evaluation will then be used to draw up an individual service plan. Options must be discussed with the older persons themselves, and their opinions must be recorded in the service plan. A

case worker must be assigned to each older person in case they need help in matters related to the provision and coordination of services. In urgent cases social welfare services must be provided without delay and in other cases within three months of a decision.

The purpose of the Act is to ensure that local authorities prepare for the forthcoming demographic changes. Older people must be provided an opportunity to take part in the preparation of decisions concerning their living conditions and development of services. Local authorities must plan their activities so as to ensure as healthy ageing and as good functional capacity at old age as possible for the local residents.

Local authorities are required to draw up for each electoral period of the municipal council a plan for supporting the wellbeing of the ageing population and the availability of social welfare and health care services for older people. Moreover, the sufficiency and quality of the services has to be evaluated on an annual basis. Local authorities must allocate sufficient resources to the support of wellbeing and the providing of services. Local authorities are obliged to consult the local council for older people in the planning, preparation and monitoring of any activities concerning older residents in the municipality.

The Act also provides for a standard of quality for services for older people provided by service providers. The number of personnel and their qualifications and job duties must be consistent with the number of older persons being provided services by the service provider and the level of service that their functional capacity requires. Service providers must engage in self-monitoring in order to maintain and further develop the quality of their services. Self-monitoring will involve obtaining regular feedback from employees.

The government will evaluate the staffing in the way required in the Act on Care Services for Older People during the year 2014 and, if the recommended level of staffing has not been achieved in 24-hour care, submit to Parliament a bill to add more detailed provisions on that to the Act. The Government will monitor and evaluate the implementation of the objectives of the Act and its influence in particular on the wellbeing, health and functional capacity of the older population, the availability of social and health care services as well as the costs caused to local authorities.

Conclusions

Ageing population puts pressure on Finland's public finances both through its effect on age-related expenditure and on potential economic growth. Improving the budgetary position in the medium-term and further reforms to the social security system are needed to bring public finances back to a sustainable path. Increasing the length of working lives would stem the decrease in potential GDP growth and decelerate the projected increase in age-related expenditure at least in the short- to medium-term. The age-related expenditure pressures are distributed unevenly across government sectors, with local governments facing the strongest challenge. Apart from adjustment needs at the local government level, it will be crucial to mitigate the ageing expenses also at the level of other government sectors and the pension system, notably reducing the burden from rising pension costs and expanding the tax base by lengthening working careers. If the solution at the local government level were to fail, the local governments would most likely seek alternative ways to improve their finances and might in effect transfer the fiscal burden to other sectors.

This would probably lead to higher local tax rates, a boost in the existing central government transfers, cost cuts in some other expenditure categories (for example investments), curbs in public services, rises in customer fees and privatization of some services. Obviously, while this would avoid building up debt at the local governments and allow municipalities to fulfill the obligation to balance their finances over a 3-year period, it would not solve the problem on a national scale. The commonly used indicators, like local government deficits and debt, can thus be misleading in identifying underlying performance and fiscal strain.

The central government attempts to bring about municipal service reforms through guidance, soft enforcement and incentives, allowing the local governments a high degree of self-determination. Currently the reforms are at an early stage of implementation and have in the aggregate not yet yielded notable productivity gains. Close monitoring of progress of the reforms will be required in order to make timely adjustments if the goals are not met.

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SUSTAINABLE REGIONAL HEALTH SYSTEMS

Growing old at home: how a French department both encourages and supports just this

Stéphane Colliard*

Conseiller général chez Conseil général des Pyrénées-atlantiques

France is divided into 101 departments, local authorities with considerable social budgets. For instance, the Pyrénées Atlantiques spend some 170 million EUR a year for the elderly and the disabled. Part of this money goes to residential centers, part to the disabled as monthly benefits for home help, technical or financial aid.

In 2012, the department voted a plan, devised by all the social actors in this field to analyze the needs and prioritize the actions. Until 2017, the plan aims to develop three main policies: home care through better coordination between health and social services, host families dedicated to the elderly and the disabled, adaptive housing with e-technologies. The real change is to accommodate each individual's project, basing the response on family and relatives possibilities', on local resources. The department's goal is to increase its efficiency through integrated information and training enabling all the social actors (family and home help included) to use a common language, to analyze the person's situation in its entirety and evolution, to assess their actions regarding the wishes of the person concerned.

How did our department come to conceive this project? We have first of all to address the question of ageing by considering the real needs of the elderly. In 2008, a survey entitled "Handicap and health in ordinary couples" showed that dependency is negligible between 60 and 79 years of age. In this age group, fewer than 3% are dependent (273 000 persons) and less than 1% needs help to wash themselves. Amongst people over 80, a little more than 11% is dependent and 2.5% is very dependent (bedridden, in an armchair or with dementia). If more than 1.2 million persons over the age of 60 (without a handicap) benefit from an old-age pension, only 60 000 of them are very dependent. The future is more worrying. The baby-boom and increasing life expectancy could double this number by 2060.

In the Pyrénées-Atlantiques department, like throughout southern France, the percentage of the elderly is much higher than the national average. And as nationwide, the functions of old age homes have deeply changed. If 60 % of the people with an old-age pension live in retirement-homes, they now enter one on average at 84 and live there more or less three years. The main wish has become to stay at home as long as possible and even end one's life there. Policies have to adjust. The aims, then, are to adapt the housing and coordinate house and care services to allow this choice.

The question of the disabled is really different. Two facts have changed it. First of all, life expectancy has considerably increased: whereas a person suffering from Down's syndrome could live more or less 20 years during the 70's, this person can now still go on to after 50 and even live longer than their parents. Secondly, the disability act 2005 (called the equality of rights and opportunities act) gives the disabled a right to compensation for their handicap. The department can allocate human and technical help, a guide dog, a special pension or adapt their home or car.

This law imposes also that all public buildings and means of transport be made accessible to the handicapped, no matter what their handicap may be. If today, many disabled people live in residential centers, this situation could rapidly change. For different reasons, the wishes of elderly persons and handicapped persons are increasingly identical; that is why we had to link both points of view in one single plan called the independence plan. Voted for a period of four years, it features four different policies. First of all, it aims at gathering home and health services in one single mix for each person to avoid 5 or 10 different domestic workers rotating every day. And we want every one to be trained in the listening and understanding of the real and specific needs of every person. Then, keeping the dependent at home means improving the competences of relatives through training and information, offering them temporary solutions through short-term residence in nursing-homes and back-up employees. Thirdly, the department chose to develop the host families' service as a compromise solution between isolation at home and old-people's homes. But the decrease in number of foster families housing elderly or disabled persons (one hundred in the Pyrénées-Atlantiques) has led us to create a specific department to employ directly some of these families, and provide them with guidance and accompaniment. Finally, it is necessary to reconsider the housing issue by hiring specialized technicians, financing the building of adapted homes, by

* Corresponding author: s.coillard@wanadoo.fr

technology watch to improve life in inner city areas. These ambitions won't be fulfilled without the many associations which help the elderly and handicapped persons in their daily lives and without local innovations in our territory. For example, "santé service" (health service) provides the Bask Country with hospital at home for those whose autonomy decreases or who want to end their life at home.

To conclude, keeping elderly people at home remains a complex and challenging task because the prevailing culture in France is to send these persons to retirement-homes. Home help services are very numerous, competitive et unevenly distributed through the country. The more actors there are, the more specialized they are, the more difficult it is to coordinate them and the more conflicts appear between the elderly or disabled person, their family, their doctor and the home help services. Lastly, it becomes even more complex when life accidents happen (a bone broken, death of a relative) or when the home is old and not adapted. Nevertheless, keeping elderly and handicapped people at home is necessary because public finances won't meet all the needs, relatives will need more and more help and people will wish more every day to grow older and die at home.

SUSTAINABLE REGIONAL HEALTH SYSTEMS

Innovation in chronic care towards a more sustainable model

Roberto Nuño-Solinís*

Director of O+berri, Instituto Vasco de Innovación Sanitaria

A B S T R A C T

According to the theory of diffusion of innovation, time for mass implementation of new chronic care models is coming, and this is recognized in the agendas of innovation in European Union. The transformation started in the Basque Country can be regarded as a pioneering experience.
Despite the profound economic and financial crisis, as well as political and institutional complexity in social sphere and heath care sector, the Basque experience has demonstrated that change is possible and marked its direction, which is being recognized internationally.
Still a lot is left to be done in order to achieve a more proactive health care system, integrated and innovative, truly centred in the needs of citizens and users. The chronic care strategies indicate a strategic direction, but without a doubt, it is the diversity of clinical experiences ranging from returning to community care in primary care, new role of citizens in self-care, emerging alliances between general practitioners, internal and geriatric care etc., innovative approaches to deal with multi-morbidity and end-of-life care, new forms of multidisciplinary cooperation, advanced use of IT…. where the model of the future will emerge from, and it will be built from the most efficient experiences that contribute to the sustainability of the health care system.

If to take as a reference the estimations that 17 years on average are needed in order that research provides its impact on the practice in health care system (Balas, 2000), 2013 should be the year of the Chronic Care Model developed by Wagner et al. (Wagner, 1996).

Obviously, diffusion of innovation is not linear and the Spanish National Health System is relatively slower compared to other sectors who can be referred to as "early adopters", despite the fact that there was a clear leadership of Spanish authors in development of this area of knowledge (such as, for example, Innovative Care for Chronic Conditions [Nuño, 2012]). But talking about the innovation that, following that classic attributes by Rogers (Rogers, 2003), presents an obvious "competitive" advantage, is compatible with organization culture, feasible and with demonstrated benefits, it was clear that it's time was coming disregarding the known complexity of the changes it was bringing.

On this line, the Strategy of transformation of the Basque health care system (Nuño, 2010) that addresses the challenges of chronicity and multi-morbidity assumes a substantial change is focuses on the re-invention of the health care model with the aim to achieve more integrated care.

The path6 started by the Basque Country in 2010 is being followed by other regions such as Andalucia, Valencia, Catalunya, Galicia and, since recently, Murcia and Castilla y Leon. Moreover, in other regions, plans and strategies regarding the "chronicity" are being developed. The spanish Health Ministry has also developed its Strategy in 2012 (García-Goñi, 2012).

First of all, we must remark the extent of the ambition. We are not talking about the incremental change or a try to modify the isolated pieces of the current system. On the contrary, we are in front of the re-invention, or transformation, of this system. In front of a great cultural change, multi-agent and multi-facet (Best, 2012).

Secondly, such a change requires a new style of shared leadership, capable to mobilize organization of different levels, defining the direction and transmitting passion and being opened to compromise. Facilitating leadership from top is a key to activate those who are to explore the new ways of work. It is important to invest in capacities and skills, as well as creating room for reflection and learning; protect and reward those who take the risks; accept the diversity of the focuses and solutions. However, this should come under a shared vision and well aligned communication. Moreover, change agents are needed that would stimulate and articulate the communication, add dynamics to the projects through the barriers traditionally presented by centres, levels, hierarchies.

Monitoring of progress and periodic evaluations is another key aspect. It is important to accept the political risk that not

* Corresponding author: nuno@bioef.org

all changes will be successful and the necessity to confront those who believe that the reason of failure is that not enough was done – without learning from it - thus wasting resources. The evaluation should not be underestimated and is very demanding in resources, capacities, methods, information systems and measurement instruments, many of which should be developed ad-hoc (for example the instrument IEMAC (Nuño-Solinís, 2013) (www.iemac.org) that allows the systems and organizations to self-evaluate and measure their progress in re-orienting their model to better care delivery for chronic patients). Evaluation is not the goal per se, creating rankings is not always worth the effort, but is rather meant to be used for learning and to guide the changes. It should be part of benchmarking processes that would allow to not only get to know the results, but also how those were achieved.

Furthermore, the achievements should be incentivized with mechanisms that are appropriate for each particular context and culture. There is a large variety of those ranging from different monetary or non-monetary incentives to groups and/or individuals. Finally, one should be aware that measure, evaluate, compare are not neutral activities, they require consensus about the rules, organizational maturity, respect towards the judges and appropriate space for performance; otherwise, the effects could become counterproductive.

The new project cannot be developed from scratch; it requires recognition and appreciation of the history of the organization and its achievements, which means building upon its values and cultural pillars. This appears to be a key aspect that does not get sufficient attention, and this in turn generates misunderstanding, mistrust, and as a result barriers to change, while it could have been smoothened if the change initially was adapted to the organization. It is of particular importance to analyse the real-life change processes, and without overlooking the possible negative consequences those can have, evaluate the new elements that were successfully incorporated in professional practice.

Following the rule "no decision about me without me", the change cannot happen without participation of patients, caregivers, patient associations and citizens in general. This implies a great challenge, because the current technocratic model lacks the effective systems of citizen participation, first of all, at the stages of creating ideas and designing the necessary changes. However, having accepted this rule with its risks and implications for the speed of the process, one will harvest in the future at the stage of implementation, having less necessity to explain things a posteriori as those have been clarified and agreed a priori. Furthermore, an essential pillar of the new model is an increased responsibility of citizens in respect to their health, for example, chronic patients taking an active role in controlling their condition. While being the key element, it is the most underused one in the current health care model, where self-care is not seen as a part of the treatment process.

Transformation initiated in the Basque Country was not equally successful in all the areas described; and this can be explained by many reasons. One of those – severe economic and financial crisis, election cycle and the necessity to demonstrate results in a short term, complexity of political and institutional structures in the social and health care sectors, etc. But even in this context, it was shown that change is possible opening the path that was recognized by EIP/AHA (European Innovation Partnership on Active and Healthy Ageing) initiative of European Union.

We share the goals to build a more proactive, integrated and innovative health care system that would be truly centred on the needs of the citizens and users. There is still a long way to go. Fortunately, the chronic health strategies in various autonomous communities and the strategy recently presented by MSSI, recognize and indicate the direction of change. But it is without any doubt the diversity of clinical experiences ranging from returning to community care in primary care, emerging alliances between the general practitioners, internists, geriatric specialist etc., innovations that deal with the challenge of multi-morbidity and end of life care, new forms of multidisciplinary cooperation, advanced use of IT etc., those are the ones that create the future. Lastly, it is essential to never stop learning from others, such as, for example, from Scotland that has developed the vision for 2015 of integrated health care with a clear step towards shifting the institutionalized care to community environment.

In conclusion, we live in the time of transition that can be seen as a moment of conception of a new model or resignation towards stagnation. We all have a role in defining the future that we want for our health care systems.

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SUSTAINABLE REGIONAL HEALTH SYSTEMS

DenokInn: Entrepreneurship in health

Javier Fínez*

DenokInn

A B S T R A C T

The objective of DenokInn, Basque center for social innovation, learning and entrepreneurship, is to identify innovative iniciatives in response to the current social needs. Among the strategies for the future, DenokInn has identified the health sector as an emerging niche for the entrepreneurship initiatives in response to the increased burden of diseases in western society resulting from to ageing, stress and sedentary life-styles. Among on-going initiatives that we would highlight in this article, three should be particularly emphasized: home assistance program (SAIATU) initiated with an objective to offer help at the household that would complement the pure medical palliative care in order to improve the integral care for both patients in advanced stage of disease and their families; REHUB, DenokInn operated company, which commercializes the "assisting robot" for tele-rehabilitation in stroke patients whose motoric disability could be amended through the muscular activation therapy; last but not least, the initiative SIEL BLUE EUSKADI has as an objective to promote the health prevention programs through the adapted physical activity to stimulate healthy ageing.

SAIATU – palliative care at the households

SAIATU is a pilot program initiated with an objective to offer help at the household that would complement the pure medical palliative care in order to improve the integral care for both patients in advanced and terminal stage of disease and their families. In this way, SAIATU aims to aid patients in terminal stages to remain at home by offering adequate specialized care to complement palliative treatments, when the clinical condition permits and patient wishes to do so.

This service is a an additional social care to the primary and secondary medical services offered by public health service in Basque country (Osakidetza): SAIATU offers an active service to respond the needs of patients receiving the palliative care at home, and this complimentary character to the medical services guarantees an adequate and integral care at the end of life, and furthermore reduces the medical costs while improving the quality of life and satisfaction of patients and their families.

SAIATU started on February, 1st 2011 in the province Gipuzkoa and aims at expanding its services to the rest of Basque Country in the future. The users of the program are the persons who suffer from the terminal stage of the disease, independent of the pathology, such as oncological or advanced non-oncological conditions, but that result in the limited lifetime prognoses (usually about 100 days of life) or special cases of patients who partially or totally limited in performing the Basis Daily Activities.

In brief, one could summarize the services offered by SAIATU as following:

- Accompanying: each patient and family have an assigned "carer" who continuously helps the patient as well as the family members, giving space for developing a closer relationship, trust and ensuring that all the members are feeling comfortable and meaningful. This help is offered in person and by telephone, 24/7.
- Support in controlling the symptoms: as the condition of the patient progresses, the consultations about doubts regarding the symptoms and medication as well as panic attacks are becoming more frequent. With the help of the "carer" is it possible to assist a certain number of cases with the advice regarding the actions a patient and his or her family should be undertaking, reducing the number of urgent care episodes, which often result in the fact that patient ultimately dies in the hospital.
- Family relief: "carer" substitutes the main carer from the family in certain occasions, in a way that the relationship between the patient and the family stops being completely as the one of complete dependency and transforms in a more normalized relationship which allows the presence of other persons with similar level of trust.
- Assistance in mourning: Support in resolving the practical issues, and making appointments and telephone calls when the patient dies, in order to help the family to overcome the state of emotional stress that is naturally being experienced by each family member. In the future, it is expected to create a community of families that could share the experience of emotional shock and help each other to cope with it.

* Corresponding author: jfinez@denokinn.eu

SAIATU team

The SAIATU team is led by Urbegi group with the leader Naomi Hasson, nurse from Northern Ireland, settled in Basque Country. The group has a multidisciplinary expertise with seven professionals (social workers, nurse assistants, nurses and doctors) who received a special education in end-of-life palliative care.

The results of the first pilot experience in Guipúzcoa allow some optimistic conclusions and recommendations:

- The initiative favours the patient remaining at home till the end of life. Currently, approximately 70% of patients with terminal disease in Europe die in the hospitals, and the rest at home. SAIATU managed to reverse the numbers, achieving that 71.4% of patients with terminal stage disease die surrounded by the family members.
- Patients and family members showed to be highly satisfied with SAIATU services
- SAIATU services increase the household activities that the Primary care develops, reducing the consumption of the emergency care services and associated costs.

REHUB –Mechatronic equipment for rehabilitation

Rebub is an entrepreneurship initiative started by DenokInn in collaboration with Maser Mic (electronic equipment company), Grupo Sallén (advanced prototypes) and software developer for commercialized tele-rehabilitations products for rent. The initiative is essentially focused on the neuro-rehabilitation of upper limbs - hand and shoulder (disability due to stroke or head injuries).

The number of strokes is estimated to double by 2020 while health care budgets are becoming scarcer. This presents yet unresolved societal problem due to high costs of rehabilitation, including both human labour demands as well as expensive rehabilitation equipment that is necessary.

With the exclusive licence for Rehub on the development by Technology Center Tecnalia, ArmAssist is able to replicate 80% of functionality of more advanced rehabilitation equipment, but at only 1% of their cost. Moreover, patient benefits from not having to leave the house, saves on transportation and thus enjoys more comfort.

ArmAssist is a robot which consists of a mobile module, a small carpet for soft and precise movement on the surface of the table and controllers of hard- and software that enable communication between the device and standard PC. The device is connected to the arm of the user through an arm orthosis that uses various software modules to develop and measure complex tasks of reaching, grabbing, turning etc. guided by entertaining visual gaming software and movement tests.

This allows developing the rehabilitation exercises in a virtual space and stimulate the movement of the shoulder and elbow to rehabilitate the upper limbs. The data about the movement are available for the user and the rehabilitation specialist who guides the user on distance. It is possible to extract short- and long-term reports, analyses of tendencies, clinical evaluation, treatment plan etc.

ArmAssist was validated in various trials with real patients in specialized centres including Aita Menni Euskadi, La Fe in Valencia,and Institut Guttmann de Cataluña, and was deemed medically valid, and patients experienced substantial improvement and highly appreciated the "entertaining environment" and the possibility to use the system independently. At the same time, the physicians positively assessed the possibility to be able to plan the tasks that the patient will be performing independently, and further receive personalized feedback reports about the level of progress.

Finally, these are the three steps of the value chain of Arm Assist:

- The rehabilitation specialist diagnoses the necessity for systematic rehabilitation and creates a new user for Arm Assist and requests the rent of the equipment.
- Rehub delivers and installs the equipment at the household of the user and in case of need provides the maintenance of the equipment, invoicing the costs on a monthly basis to the patient of the centre of the rehabilitation.
- Patient performs the exercises planned by the rehabilitation specialist that appear automatically on the screen of the equipment every time that it is turned on. Specialist follows the progress of the rehabilitation on the distance. As soon as the specialist considers that patient has reached the optimal level, Rehub removed the device from the household.

SIEL BLEU EUSKADI – Solutions for better ageing

Siel Bleu is a non-profit association that emerged in France in 1997 and whose aim is to use the adapted physical activity as a mean to enable independent living and better ageing. The wellbeing and new life conditions have added years to our lives and the objective of Siel Bleu is to ensure that these years are full of life for elderly people.

Siel Bleu offers individual and group prevention programmes and only in France has a team of 270 qualified professionals who developed over 135,000 interventions during 2011. Siel Blue España, with an ample experience in Catalunia and relatively new in Basque country, developed 520 interventions between October and December 2011.

Services offered by Siel Bleu are available to six different audiences.

- Siel Blue GPS Santé, targeted at the employees of the companies. Prevention programs include prevention of musculoskeletal injuries and occupation injuries, as well as advice on improvement of labour life.

- Siel Blue Formación, targeted at the universities, health care specialists and family carers. Conferences and co-operation in the academic world such as specialized education for health specialists and family carers, especially for carers in case of Alzheimer.
- Siel Blue Domicilio, targeted at prevention of falls at home, includes programs of return from hospital and action against the sedentary behaviours.
- Siel Blue Personas Minusválidas (for disabled persons), adapted group sessions for people with physical and/or mental disabilities.
- Siel Blue Enfermedades Crónicas (chronic diseases), group sessions dedicated to prevention (secondary and tertiary) and assistance
- Siel Blue Personas Mayores (elderly), group programs in order to enable maintenance of the autonomy, prevent falls and improve social connections.

Through these programs a triple effect on target populations is reached:

- Impact on physical health through maintenance of independence of movement and personal autonomy (motoric devices, inferior and superior muscles, etc.) as well as disease and injuries prevention, such as osteoporosis, falls, obesity. On the other hand, these programs facilitate the rehabilitation after hospitalization, disease or fall.
- Cognitive impact through promoting good state of humour, satisfaction and personal training (better sleep, emotional support) as well as education towards independency, pedagogic skills, promotion of more active life and changes in lifestyles. Finally, the mental and physical states of mind are improved through stimulation of mental vitality, curiosity, motivation etc.
- Social impact through stimulation of social networks between similar groups (similar mobility, age, origin), interactions in groups and sense of belonging to the social groups. This creates opportunities for people to obtain sense of achievement and own value, as well as reach recognition by others.

Currently, Siel Blue Euskadi is in its initial phase. It disposes the services of a professional who has been educated in France and started to develop the activity in Bizkaia in 3 residences for elderly. We hope that this is a beginning of "adding years to life and life to years" for elderly people.

SUSTAINABLE REGIONAL HEALTH SYSTEMS

Practical examples about innovation for active ageing. New challenges

Ph.D. Begoña García Zapirain*

Head of DeustoTech-LIFE Lab. Engineering Faculty, University of Deusto. 48007, Bilbao, Spain

A B S T R A C T

This paper presents several real life examples of innovative applications of information and communication technologies (ICT) implemented in order to support the elderly. Examples described include application of mobile technology to support autonomous life and computer games as a therapy to develop healthy habits in older people both in terms of physical health and mental well-being.

Introduction

Created in 2001 within the Faculty of Engineering of Deusto University, the research group DeustoTech-LIFE (eVIDA) works on the processing of biomedical signals, being a leader in telemedicine projects, so-called Computer Games for Health and services for mobiles, tablets and television targeted at persons with special needs. These will become the subject of the present paper, but with a specific focus on older persons.

Longer life expectancy is one of our main achievements and, at the same time, one of the biggest challenges we face. Global ageing implies important changes in economy and social and health care services all over the world.

Active ageing is about optimizing health, social participation and security in order to improve the quality of life of those who are getting older. This process is relevant for both individuals and groups of individuals who is given an opportunity embrace their physical, social and cognitive potential during the whole life cycle, in order to participate in the society in accordance with their needs, preferences and capacities, while being supported and protected when necessary.

In this respect, from the technological point of view, there are various opportunities to provide support in this process. The following paragraphs will illustrate few of those.

Innovative projects for elderly people

This paragraph presents several examples of projects where the ICT were applied in order to support the older people.

Mobile based services

This initiative helps the elder people to perform the daily activities independently both in and outside the house, while carrying the mobile that would supervise and guide the activities. It is based on the system of monitoring and localization of activities that supports the elder person and allows more independency from other family members.

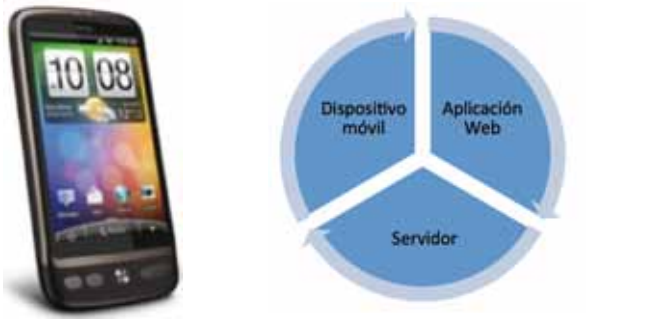


Figure 1. *Architecture of the localization system*

* Corresponding author: mbgarciazapi@deusto.es

The system consists of the 3 main elements: web application, mobile device and server (Figure 1).

Web application: The coordinators can see the routes that the users have walked through obtaining the coordinates via GPS of the mobile device. The common routes and areas of the user can be walking route till the elderly association, park, house of the family members or own house. In case the user has not followed the planned route on a planned time, coordinator receives an automatic alarm informing that the user has not taken the planned route. Web application also includes the options to manager users, mobile devices and routes.

Figure 2. *Registered trajectory*

Server application: The module is used to store the received coordinates, compare those with the associated routes of the users, and generates appropriate alarms.

Mobile device includes an application that runs on the background of the mobile (i.e. without the user being aware of it). This application obtains the GPS coordinates and sends them to the server. It is independent of other applications, and allows the user to use the mobile as usual. It only becomes visible when the alarm goes off: at this moment, an image and a message appear, together with the option to press the button to confirm that the message was read.

Computer Games as Therapy

The Computer Games for Health are games that, being based on ICT, are used in the therapy to improve certain skills or health aspects in persons that require rehabilitation or special care. The games in this case present an alternative to conventional therapy, and can be used in patients with special care needs, older people, children suffering from autism, persons with cognitive disorders and many others. We will particularly focus on those aimed at supporting older people.

eTangram

The objective of this Project, developed in cooperation with Zuentzat y Bilbomatica, is to train the physical capacity and memory in older people. It is based on the game tangram, that consists in placing pieces of various shape and colour, in order to build certain figures.

One of the ready versions has a tangible interface and "enhanced reality" functions in order to improve the interactive qualities, in addition to the function to monitor the process and create relevant reports for the specialists.

Through the option "enhanced reality", the user places with the real pieces, while looking at the screen of the computer. Instead of colours, the pieces has a unique symbols placed on each side. Through these pieces and a web-camera connected to the computer, the application is able to evaluate where each piece is currently placed, assign them a colour and decide whether the user has passed the level (Figure 3).

Figure 3. *eTangram with "enhanced reality"*

Kinect for rehabilitation and healthy life

Persons on a Wheel-chair tend to have fewer opportunities for leisure compared to general population. This can have different reasons, such as feeling of not being capable to do so or lack of access.

To address this, the system based on the sensor Kinect for Windows was developed that recognized the physical movements of the body, thus allowing the user to interact with the computer without the need to use the distant control device (Figure 4).

Figure 4. *Skeleton recognition*

Majority of the physical disabilities, and in particular those affecting the lower limbs, prevent older people using hardware required for the interaction, and therefore effectively play games based on Kinect. The game can resolve this problem through removing the necessity to use the distant control device as well as necessity to have the chair placed in front of the table. Empty and cable-free surface it much easier to use, and also without a need to memorize complex systems of buttons (Figure 5).

Figure 5. *Principal menu of the game*

This game, besides its entertainment function, also ensures that the user does physical exercise, which can in the future be used as physiotherapy, making rehabilitation more enjoyable for patients. Moreover, this game can be applied in other groups of patients, including older people who use a wheel chair, crutches or stick to assist mobility. In conclusion, it aims at improving the motoric and cognitive skills, stimulating at the same time physical activity in an entertaining way (Figure 6 and 7).

Figure 6. *Playing level 1 of the game*

We take an opportunity to acknowledge our collaboration with la Santa y Real Casa de Misericordia de Bilbao and the financial support from la Diputación Foral de Bizkaia (BizkaiLab).

Figure 7. *Another example of the level of the game*

The El Serious Game consists of 3 different levels where the user needs to pick up different objects that appear on the screen. In order to do so, the user has to move arms in a way that objects do not fall on the ground. In this way, both the mobility of the patient and cognitive process are stimulated.

Stress test (Galvanic Skin Response)

The Project Stress uses a device to detect the different conductivity of the skin when a person is experiencing or not a stress reaction. This data is subsequently sent to the computer application. The final objective is to implement it within an application that controls various medical devices. Galvanic Skin Response (GSR) uses 2 electrodes that are placed in 2 fingers, and those function as if they were 2 terminals of the same resistance. Hands of people with high level of stress or anxiety (such as older person alone at home confronting an unexpected situation) tend to sweat more that in turn diminishes the resistance. The device then send the information to the coordinator via ZigBee and, at the same time, the coordinator send the information to the computer (Figure 8).

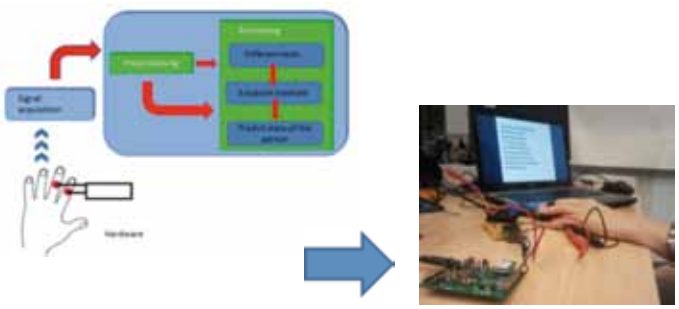


Figure 8. *Stress system scheme*

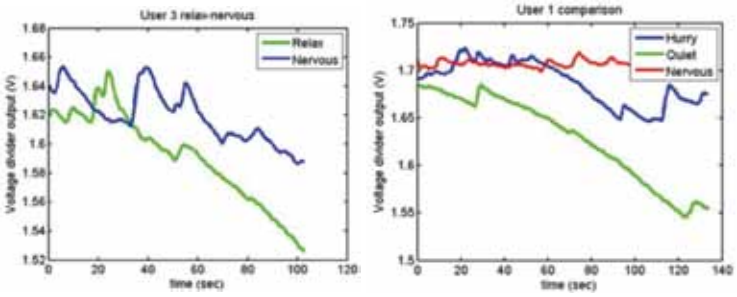


Figura 9. *Comparison of the levels of stress*

The graphs (Figure 9) show that the output voltage is higher in stress situations compared to non-stressful situations.

New challenges

Europe-2020 is European development strategy for the coming decade. In a changing world, European Union is intended to have a smart, sustainable and inclusive growth. These three priorities mutually reinforce each other are to help the European Union and member states to generate higher employment rates, productivity and social cohesion.

- Smart growth
  - Digital agenda for Europe
  - Innovation Union
  - Youth on the move
- Sustainable growth
  - Resourse-efficient Europe
  - An indistrial policy for the globalization era
- Inclusive growth
  - Agenda for new skills and jobs
  - European platform against poverty

Europe has identified new drivers to stimulate growth and labour market. These areas are being guided by the 7 above mentioned initiatives. Within every initiative, EU and the national authorities have to coordinate the efforts to mutually support each other.

- Action Group A1: Prescription and adherence in a regional level
- Action Group A2: Personalized health care management; falls prevention
- Action Group A3: Prevention of decay and functional fragility
- Action Group B3: Integrated care for chronic diseases, including remote monitoring at regional level
- Action Group C2: Compatible solutions for independent living
- Action Group D4: Elderly-friendly buildings, cities and environment

New initiatives are starting at the international level and are supported by the European Commission policy. This guarantees the continuity of the efforts of many centres and organizations in a number of countries on the way to develop useful technologies to support the population ageing.

Introduction to student research papers

As journal coordinator, I would like to thank everyone who supported and contributed to this second edition of the journal. Our warm regards to all the authors who submitted their papers, and collaborated efficiently with us and the reviewers to further improve and refine the articles. I would like to express enormous gratitude for the work of the scientific committee members, for their time and effort put in the paper revision. Our special acknowledgement is for Basque Institute for Healthcare Innovation (O+Berri) for continuous professional support for the journal.

Papers selected for this second edition of the journal tackle various aspects of health system development in different parts of the world, reflecting the broad international scope of the REGHEALTH program. As usually, we include one detailed health system profile, and Bangladesh came in focus this time. Furthermore, a paper on comparison of two Beveridge type health systems in Italy and Portugal is presented. In relevance to the topic raised in the seminar "Ageing and health economics" conducted in Deusto University in October 2012, we are pleased to add a reflection paper on the challenges of ageing at individual and society level. Finally, two more papers included in this edition addressed issues of mental health in India and sexual and reproductive health in Nepal.

I hope that the presented papers will be of great interest for REGHEALTH as well as broader audience. Your comments and responses to the published papers are very welcome, and can be included in the upcoming editions to stimulate scientific discussion and learning. Everyone is welcome to submit new articles and share findings of your own research with the readers of our journal.

I wish you a pleasant reading,

Best regards,

Polina Putrik,
journal coordinator

reghealth

SUSTAINABLE REGIONAL HEALTH SYSTEMS

The Healthcare Systems in Bangladesh: An Overview of Healthcare Management, Issues and Challenges

Md. Mizanur Rahman*
Associate Professor, Department of Social Work, Shahjalal University of Science and Technology

Dr. Leslie Sue Lieberman, *Professor Emeritus, Department of Medical Anthropology, University of Central Florida*

Dr. Vincentas Rolandas Giedraitis, *Associate Professor, Faculty of Economics, Vilnius University, Lithuania*

Mrs. Tahmina Akhtar, *Professor, Institute of Social Work and Research, Dhaka University, Bangladesh*

A B S T R A C T

This paper focuses on health profiles, management and service delivery systems to protect population health in Bangladesh. 'Systematic Review and Content Analyses' as methods and 'Inclusion Criteria' as technique of identifying the key materials has been applied to extract significant data from secondary sources. Major findings reveal that healthcare systems in Bangladesh are not prepared enough to encounter both communicable and parasitic diseases like dengue fever, malaria, etc. and non-communicable and degenerative diseases like respiratory disease, diabetes mellitus, cancer, etc. The major causes includes decentralized administrative system but not in financial management and decision-making process; its organizations are mostly located in urban areas where poor people can rarely access the required services; financing in the public health sector is much less compared to private sector; health insurance both in public and private settings is not yet accepted as a method of payment whereas a lion's share of healthcare expenditure comes from out-pocket payments. Public healthcare settings have already reached the remote areas but there is inadequacy and poor quality of services, unskilled management and huge under-the-table payment, its services can not fulfill the demands of general population. On the other hand, due to excess commercial attitudes, high cost and urban-based services, private healthcare is not accessible to all. Quackery and traditional ways of healing are quite popular to poor people in rural areas that ultimately make diseases more difficult to treat when sick people are taken for the modern medical treatment. Health technology assessment and evidence-based medicine is not wide spread in healthcare practice. In consideration of the healthcare features it serves the purposes of the elite class people in the country. Natural calamities like flood, cyclone, and tidal waves run almost every year over the country and claim a colossal loses of lives and properties. Above all, due to the vast population, shortage of health workers, insufficient healthcare organizations, rampant inequalities and disparities, huge corruption, wastage and mismanagement and poor infrastructure and communication technology development, healthcare systems and its rendered services can not meet the needs and desires of the people.

Background

Bangladesh, in spite of a resource poor country, has achieved impressive health gains which have made it an example for other developing countries. Over the last decades key health indicators like life expectancy and coverage of immunisation have improved significantly while infant mortality, maternal mortality and fertility rates have dropped considerably. But most of these achievements are mainly quantitative while qualitative improvement is far behind. Poor access to services, low quality of care, high rate of maternal mortality and poor status of child health still expose as challenges of the health sector. On the other hand, the healthcare plans and policy actually helps to expand services causing quantitative advances while managerial weaknesses and governance problems pose as the main factors inhibiting qualitative improvement. Likewise, many re-emerging diseases and colossal losses of lives and properties caused by natural disasters like cyclones, and floods still threat to its healthcare system all the year round. To encounter the problems and challenges of population health the country has adopted Sector Wide Approach (SWAp) under Health and Population Sector Strategy (HPSS) since 1998. The governments also give priority to health sector development as an integral part of overall socioeconomic development and commitment to Health for All (HFA) (Osman 2008). Despite that universal health coverage and accessibility, priority to the poor and the most vulnerable groups, improvement physical quality of life, and promotion of health education indicators have not yet reached to the expected level.

Objectives and Methodology

The primary objective of the paper is to overview the healthcare and its management systems in Bangladesh. Specific focus has put on the exploration of momentous findings on key public health issues and challenges emerged from

* Corresponding author: mmrahman.scw@gmail.com

mismanagement in healthcare sector, socio-economic miseries, and colossal loses of lives and properties due to recurrent natural disasters in the country. This paper is a summary of an evaluation research based on secondary data extracted from literatures on health care systems in Bangladesh. Systematic Review and Content Analysis were applied with a view to spot the review materials. Relevant articles and bibliographic databases were searched through the OVID (Offshore Vessel Inspection Database) interface. The search strategy was comprised of controlled vocabulary such as keyword identification focusing on the concepts of healthcare system and its management, public health issues, problems and challenges in Bangladesh. Methodological filters were applied to limit the literature through inclusion criteria of the systematic review.

Major Findings

Country Profile: Bangladesh

Demography

Bangladesh, a developing country situated in the South Asia with the area of 147570 sk2, bears the legacy of more than 162.22 millions people at 1.26% growth rate that may be doubled within the next 25-30 years (WHO 2010). The literacy rate (11+ years) is 49.1% and more than 77% people live in rural areas. The current density of population is 977 per sk2. Almost 60% people live below the poverty line. Due to adopting effective measures against maternal and infant mortality, the life expectancy (Male-65.6 years, Female-70 and both sex-66.7 years) is gradually increasing. According to labour force survey in 2005-06, the total labour force (above 15 years) was 49.5 million whereas male participation (37.4 million) was higher than that of female (12.1 million). In 2008, the total fertility rate was 29.36 live births per 1,000 populations (Bangladesh Gateway, 2010; BBS, 2009; MOHFW, 2009 & 2010).

Economy

Both micro and macro economy of Bangladesh have been showing an upward trend of growth since its independence in 1972. The GDP has reclaimed 5-6% annual growth over the past few years despite inefficient state-owned enterprises, insufficient power supplies, and slow implementation of economic reforms. In 2005-2006, 2006-2007 and 2007-2008, the real GDP growth rate was 6.63, 6.43 and 6.21 consecutively. Nearly two-thirds people are employed in the agriculture sector. Garment exports and remittances fuel economic growth from Bangladeshis working in overseas. The major export commodities are garments, jute and jute goods, leather, frozen fish and seafood. Per capita GDP and income in 2007-2008 was 329 and 599 US dollars respectively (BBS 2008, 2009).

Mortality

According to MDGs, Bangladesh has achieved some impressive improvements in healthcare. But most of the gains are quantitative rather than qualitative in nature. The decrease of crude death rate (5.2 /1000 population) particularly maternal (3.92 /1000 live births) and infant (62 /1000 live births) mortality rate has been accelerating the average life expectancy for last couple of years. Under five child mortality rate (83 /1000 live births) is also decreasing but not up to the expectation. Some communicable and non communicable diseases are causing the country's mortality and morbidity rate higher than those of the previous years ((WHO 2009 & 2010); Bangladesh Gateway 2009).

Morbidity

Communicable Diseases

Dengue outbreaks claimed 5,555 cases and 93 deaths in 2000; 2,430 cases and 44 deaths in 2001 and 6,104 cases and 58 deaths in 2002. Out of 64 districts, 13 bordering districts in

Table 1. Healthcare Information in Bangladesh

Healthcare Information	Value	Healthcare Information	Value
1. Health Infrastructure Information		**2. Health Workers:**	
Union Health & Family Welfare Center	4400	Registered physicians	47259
Upazila Health Complex	417	Available in country	38537
District (sub-division) Level Hospitals	80	Serving in public sector	38%
Government Medical College Hospitals	14	Serving in private sector	62%
Postgraduate Hospitals	6	**3. Health and FP Indicators**	
Specialized Hospitals	25	CDR	5.2/1000
Doctor to population ratio	1:4719	MMR	3.92/1000
Nurse to population ratio	1:8226	IMR	62/1000
Hospital beds to population ratio	1:29000	Under 5 MR	83/1000
		TFR	2.9
		CPR	53.8%
		Average Life expectancy	68.5 yrs
		Fully immunized children	52%
4. Epidemiological Problems • Communicable Diseases: Dengue, Malaria, Tuberculosis, Leprosy, Diarrhea, Typhoid Fever, TB etc. • Non-communicable Diseases: Cancer, Cardiovascular diseases and Diabetes mellitus • Family and Community Health: Unwanted pregnancy, Forced prostitution, Malnutrition		**5. Essential Package of Services** 1. Essential Service delivery 2. Maternal and Child Health Care 3. Communicable and Non-communicable disease Control 4. Alternative Medical Care 5. Human Resource Management 6. Health Education and Promotion 7. Family planning and Adolescent Health	

Source: National Health Policy, MoHFW; Health Workers Diary, 2010, Bangladesh

Table 2. Levels of Healthcare, Administration and Number of Facilities in Bangladesh

Level of Care	Administrative Unit	No. of Facilities (Public and Private)
Tertiary	Division	40 (14 Govt. Medical College and Hospitals; 06 Govt. Post-graduate institutions; 20 Private Medical College and Hospitals)
Second Referral	District	80 Govt. District Level Hospitals; 676 Other Govt. Hospitals; 1007 Private and NGO Hospitals
First Referral	Upazila	417 Sub-district Hospitals
First Level Facility	Union	4400 Health and Family Welfare Centers; and uncounted Private Healthcare Providers
Informal Contact	Community & village	Private Healthcare Providers (uncounted)

Source: National Health Policy, Bangladesh (Osman2008).

the east and northeast belong to the high-risk malaria zone. A total of 14.7 million populations are at high-risk of malaria in the country. The Annual Parasitic Incidence is 4.2. The country holds 6th position on the list of 22 highest TB burden countries in the world. About 300,000 new cases crop up each year of which a half of them are TB infectious and 70,000 people die every year. Though Bangladesh has achieved nation-wide elimination of leprosy, in several areas the prevalence is still above 1 per 10,000 populations. About 20 million are already infected, most of whom are incapacitated and another 30 million are at risk of infection (WHO 2009 & 2010). About half of men and one-fifth of women use tobacco by either smoking or chewing. There is no reliable data on the prevalence of mental illness in the country. Based on global estimates, there are 14 million mentally ill and about 0.5% of the population is mentally disabled. In 2001, about 13,000 people have been suffering from HIV/AIDS in Bangladesh (WHO-Bangladesh 2008, 2009 & 2010; MOHFW 2009 & 2010).

Non-communicable Diseases

The incidence and prevalence rate of NCDs are difficult to estimate due to inadequate detection, under-reporting, and under-registration. NCDs e.g. heart and brain stroke, diabetes, accidents and injuries are regarded as the major causes of disease which contribute to a significant share of morbidity and mortality. The proportion of injuries, poisoning, hypertension, diabetes mellitus and mental disorders was reported to be 4.4%, 0.5%, 0.5%, 0.1% and 0.1% respectively as of the morbidity rate in the country. At least 25% of total deaths in primary and secondary care hospitals are caused by NCDs (WHO, 2001, 2009 & 2010).

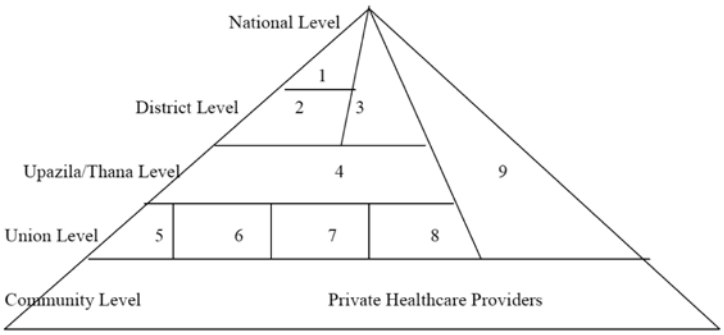
Health System in Bangladesh

Healthcare Information

Table-1 reveals that healthcare facilities in Bangladesh are highly urban-centered, insufficient in quantity, low in quality and incompatible for all segments of people. Because of vast population, low socio-economic development and natural calamities, many communicable, non-communicable, degenerative and parasitic diseases escort the daily life of people. Many public and private healthcare centers are also trying to bridge the gaps of receivable facilities between rich and poor, rural and urban communities. Few international organizations like World Health Organization, UNFPA, UNICEF, DFID, CIDA, World Bank, Save the Children etc. contribute financially to many of the government and non-government organizations to employ the essential service packages and also monitor and supervise them in different ways. But due to inequalities, under-table payment and unskilled management and services in public sector as well as highly commercial attitudes of private healthcare entities, middle and lower class populations sense hard to reach close to the services (MOHFW 2008 & 2009; DGHS 2009).

Healthcare Organizations

The healthcare system in Bangladesh is highly elite-biased and curative orientated. Even though more than seventy-five percent people live in rural area, both public and private healthcare settings have mainly concentrated in urban areas. According to Table-2 & Figure-1, the level and sophistication of health service facilities are supposed to rise with the level of administrative hierarchy (MOHFW 2008 & 2009; DGHS 2009; WHO 2009 & 2010).



1. Medical College Hospitals (300-500 beds)
2. District Hospitals (50-200 beds)
3. Specialized Hospitals
4. Upazila Health Complex (31 beds only)
5. Dispensary (Ambulatory Care Only)
6. Union Health and Welfare Center (Ambulatory Care Only)
7. Other Healthcare Centers (Ambulatory Care Only)
8. Mental and child Welfare Centers (2-10 beds0
9. Others Hospitals

Figure 1. *Healthcare Structure in Bangladesh (Osman 2008, Ahmed et al. 2005)*

Healthcare Structure

The Figure-1 indicates that first level contact with government healthcare system is at the Union level where Health and Family Welfare Centers (UHFWC) provide preventative and family planning services usually managed by a graduate doctor with some supportive staffs. The next level is the Upazila Health Complexes comprised of several graduate doctors and contained a 30-bed in-patient department, outpatient department, and family planning unit that together provide preventive and limited curative services along with the first level referral services to the population. At district level, the District Hospital usually contained 50-200 beds under the management of the Civil Surgeon provides more sophisticated curative, laboratory and diagnostic services. All tertiary level health facilities are located in divisional cities and include post-graduate hospitals, medical college hospitals and specialized hospitals. These facilities provide highly specialized curative treatment, laboratory and diagnostic services and various kinds of training and educational facilities (Osman 2008; Ahmed et al. 2005).

In-patient Care

Total number of hospital beds available under the Ministry of Health is approximately 28,000 (of them, about 45% located at Upazila level and 17% at District level, and the remaining 36% either in large tertiary general hospitals or specialized hospitals at six divisional headquarters). After 2008, 51044 hospital beds, 2732 persons per hospital bed, 3125 persons per physician and 655 households per physician indicates huge shortage of health workers to provide required healthcare services to people of the country (SPBB 2009). Real statistics on private sector are inconsistent and inaccurate. Bangladesh Bureau of Statistics records about 1027 private hospitals and or clinics in the country offering health services with approximately 15,000 beds (Ahmed et al. 2005). Besides, almost 500 NGOs operate healthcare services under Health, Nutrition and Population Sector Program (Amin 2009).

Ambulatory Care

Out-door facilities exist almost at all healthcare settings where on-duty physicians diagnose and prescribe the diseases of patients. Patients pay nominal user fees to access the services offered. If disease conditions of patients become serious, on-duty medical officers refer them to the in-door department of hospital for getting admission. Though, few people can avail this service, most of the rural and poor people are not usually able to access it (Osman 2008).

Mental Healthcare System

Bangladesh's mental health policy, strategy and plan were approved in 2006 as a part of policy, strategy and action plan for surveillance and prevention of Non-Communicable Diseases (NCD). According to National Mental Health Survey in 2003-2005 about 16.05% of the adult population suffers from mental disorders. Less than 0.5% of the total health care expenditures are allocated for mental health services (WHO 2007). Thirty-one community-based psychiatric inpatient units work for a total of 0.58 bed per 100,000 population. Eleven community residential facilities and 55% of its beds are for children and adolescents while 81% of admitted patients are female and 73% of them are children. There is one 500 bedded mental hospital and few residential facilities contained 3900 beds work for mentally ill-health people. Most of the primary health care clinics are physician based and they make few referrals to mental health professionals. No mental disorder is covered in social insurance schemes. No human rights review body exists to inspect mental health facilities in the country (WHO 2007).

Healthcare Delivery

Health services are provided by a mix approach of public–private institutions and NGOs. Public sector provides both curative and preventive care; private sector mainly curative care; and NGOs mainly preventive and basic care to the people. The standard of healthcare provided by public sector continues to be poor and inadequate due to low investment, bureaucratic mismanagement, a lack of facilities and equipment, and a shortage of trained medical professionals. In tertiary level hospitals, patients pay user-fees at a nominal rate which leads to low quality services. In private practice, doctors typically claim high user-fees which lower income people seem difficult to afford (Osman 2008).

Stewardship Function

The Ministry of Health regulates various activities of all providers by framing policies, rules and regulations. But there is no system to monitor the quality of private care, competence of providers and ensure the safety of patients. Only laws e.g. 'The Drugs (Control) Ordinance-1982' and 'The Medical Practice and Private Clinics and Laboratories (regulation) Ordinance 1982' direct and control the country health systems and its services. The Ministry of Health and Family Welfare (MOHFW) as steward of the healthcare sector is not only responsible to ensure quality of and equitable access to services in public sector, but also mandate to measure and, if not directly manage, then engage positively with the private sector in healthcare. In case of private sector, the Sector Wide Approach (SWAp) applied under National Health and Population Sector Program (NHPSP) since 1998 work as steward to manage quality, and contract NGOs accountable for their performance (Osman 2008).

Pre-requisites in Accessing Healthcare

The Constitution of Bangladesh declares that access to healthcare for all citizens is a basic right. Government is already launched a program namely 'Health for All in 2015'. People also access healthcare as a universal right with a symbolic entry fees in hospitals. But in case of private providers, to access healthcare depends on only payment. All healthcare services taken by government are implemented as universal healthcare. Legislations and its clauses indicate what care must be provided, to whom, and on what basis. Usually some costs are borne by patients at the time of consumption but the bulk of costs come from a combination of compulsory public hospital funds and tax revenues. A poor amount of taxes and revenues are used either to fund for the very poor or those who need long term chronic care (Osman 2008).

Health Seeking Behaviour

In Bangladesh, individual behaviour affects the performance of health system to a great extent. Due to illiteracy, behavioural aspects at the individual level still remain a barrier to make Bangladesh free from malnutrition and a high rate of maternal mortality. The Information, Education, and Communication Unit (IEC) under the purview of Directorate General of Health Services (DGHS) carries out the design, implementation and evaluation of programmes intended to change individual behaviour with limited success. School health education programmes and the electronic media play important roles in creating health awareness among the people as well (Osman 2008).

Healthcare Financing and Expenditure

Healthcare Financing and Expenditures in Bangladesh

Healthcare financing is not enough to meet up public demands in Bangladesh. The finance minister allocates the yearly budget for public health sector through national fiscal budget.

Health financing is a combination of different methods which include household expenses, government revenue, donors and NGOs allocation. Of them, about 47.35% of the health funds come from out-of-pocket, 26.6% from government revenue, 25.8% from external donors and the remaining 2% from NGOs. Healthcare payment in the public sector accounts for 31% while out-of-pocket expenditure claims 69% because of the absence of public health insurance system. The drug outlets consume a big share of this expenditure (Figure-2). Government yearly spends more or less 3.4% of GDP for the health sector. In 2009-2010, the government allocated 6-7% of GDP for healthcare sector. Most of the public financing were spent to subsidize public healthcare costs, and to pay the salary of employees. External funding e.g. donors' contribution is coordinated by World Bank. The bank heads a consortium of 10 donors that funds around a third of the health ministry's budget with over 30 multilateral and bilateral organizations (Osman 2008; Amin 2009; WHO 2009 & 2010).

Comparison of Healthcare Financing and Expenditures

Healthcare economics across the world can be broadly divided into two categories – capitalistic (like USA) or socialist (UK and the rest of Europe). In the former category, most healthcare resources are owned by private entities and, in the later, the state owns the resources, and collects taxes from the citizens and provides them healthcare. The second system works better even though the US spends more for healthcare of its populations than any other country in the world (Dutta 2013). Among 34 member countries of Organisation for Economic Co-operation and Development (OECD), the USA spent more on health care as per capita ($8,233), and more on health care as percentage of its GDP (17.6%) than any other nation while Norway, Switzerland, Netherlands spent on health $5,388, $5,270, $5.056 per capita and 9.4%, 11.40%, 12.00% of GDP respectively in 2010 (OECD 2012; Statistics Office 2013). Among 194 countries in the world, Bangladesh, Pakistan, Nepal, Indonesia, India, Sri Lanka, and China spent less (per capita $53, $57, $63, $100, $124, $149 and $347 respectively) on health care in 2009 (WHO 2012; Statistics Office 2013). In 2011, total health expenditure of the United States was 17.9% of its GDP while Bangladesh could finance 3.7% of its GDP (World Bank 2012).

The Process and Actors of Health Policy Making and Financing

The MOHFW executes the responsibility for policy, planning and decision making at the macro level which are implemented by two major wings: the DGHS and the Directorate of Family Planning (DFA). DGHS is responsible for the implementation of health programs and provides technical guidance to the Ministry while DFA designs family planning programs and provides technical assistance to the Ministry. The Ministry promulgates the rules and regulations subject to health and hygiene and also supervises the providers' activities accordingly. The Bangladesh Medical and Dental Council (BMDC) regulates the medical profession by issuing licenses to medical personnel rather than monitoring their performance while DGHS controls private clinics and hospitals by the registration. There is no notable system to monitor the quality of private care, competence of providers and ensure the safety of patients (Osman 2008).

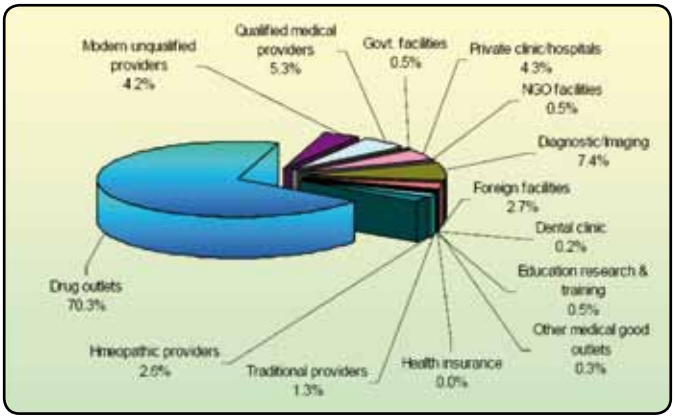


Figure 2. *Distribution of Out-of pocket costs in Bangladesh (Rabbani 2005).*

Health Insurance

There was no reimbursement policy or comprehensive health insurance scheme of the public sector in Bangladesh. The government provides a small amount of monthly medical allowance to its employees, and old age allowance to the oldest poor persons with monthly Tk.125 per person (Ahmed, 2002-2003). Some NGOs launch the program to provide health insurance to the people. At present, only 36 (health, life and loan) insurance schemes covers about one third of the poor in the country (Ahmed et al., 2005). Of them, only 13 NGO insurances e.g. Gono Shashtho Kendro are for healthcare. Besides, few micro finance institutions have started some insurance provisions covering disability and death in the country. Recognizing the link between good health and productivity, some institutions are also trying to commence healthcare insurance scheme for providing quality care to the people (Mamun 2007; WHO 2009 & 2010).

Key Public Health Issues

Many public health issues tenet to health and hygiene jeopardize everyday life of people in Bangladesh. The Spectrums of environmental degradations due to climate changes subserve many infectious and contagious diseases and claim lots lives and remedial costs every year. Poorer surveillance systems cannot oversee the turbulent and tumescent public health issues as ubiquitous in the country. Highly centralized and elite-based health systems, in contrast, try to elevate its focuses to key public health issues and encounter the risks regarding the following aspects (WHO-Bangladesh 2009; DGHS 2009; MOHFW 2008 & 2009; UNICEF-Bangladesh 2010).

1. Communicable diseases e.g. dengue, malaria, diarrhea, typhoid fever, arsenicosis, Sars, kala-azar, HIV/AIDS, avian influenza are emerging as threats to public health. Both international donor agencies and government are trying to lessen the new burden of these diseases.
2. Non-communicable diseases e.g. heart diseases, diabetes, cancer, and mental disorders are on the rise in Bangladesh. NCDs is one of the main causes of disease burden and mortality. Bangladesh does not have a community-based public health program for NCDs. Only hospital-based information is available. Lack of health advocacy, insufficient logistic facilities, and difficulties in generating resources for newer initiatives restrain the initiation of surveillance on NCDs.
3. Insufficient healthcare delivery facilities are a key issue of public health in Bangladesh. Ratios between healthcare centers, hospital beds, registered physicians, nurses and people are very high that reveal inaccessibility to access services by the people living in rural and remote areas. Consequently, quacks, unskilled herbal and traditional healers e.g. kabiraj, peer-fakirs with no or little knowledge on the cause-effect of diseases avail the opportunity to treat people that ultimately increase the disease burden in the country, though measures of traditional healers

provide a psychological support on the way of treating disease symptoms effectively.

4. Malnutrition, a major cause of death and debility, is widely expanded in Bangladesh. Micro-nutrient deficiency is quite common that deters the physical, cognitive and mental development of people living in society. Low birth weight and malnourished children are susceptible to infections diseases (roughly two-thirds of under-five deaths are attributed to malnutrition, 75% of it are associated with mild and moderate malnutrition). About 25% of maternal deaths are of anemia and hemorrhage. Women and adolescent girls mostly suffer from anemia owing to iron deficiency (UNICEF 2010; WHO 2009 & 2010).
5. Deficiency of safe drinking water is a major public health issue for vulnerable communities particularly women and children in Bangladesh. Only the urban-based people get access to safe drinking water. Majority of rural people drink unsafe water from ponds, rivers and marshes. While some areas of the country are more vulnerable to arsenic contamination (Frisbie and Others, 2009). A large portion of people can not drink the deep tube-well water. Natural calamities e.g. flood, cyclone, draught, tidal weaves etcetera swell the threat of unsafe water or deteriorate the quality of drinking water that finally cause outbreaks of many communicable diseases (FAO, UNICEF, WHO and WSP 2010).
6. Almost everyday, many unexpected deaths and injuries occur by road, rail, water transports and fire accidents which contribute greatly to increase the incidence and prevalence of mortality and morbidity in Bangladesh. for example, on 24 April 2013, the collapse of an eight-storied garment factory claimed more than 1200 deaths and 2500 injuries in Bangladesh (The Daily Star 2013).
7. Bangladesh is one of the severely affected countries in the world due to global climate change. Almost every year, natural calamities like flood, cyclone, and tornado cross over different parts of Bangladesh. Shrimp cultivation with water salinity have added new stresses to the natural catastrophes that increase the colossal loses of lives and properties, and also weakens the fragile conditions of public health more (Hasib 2008).
8. Rapid urbanization creates such conditions that make slum dwellers vulnerable to disease resulted from poor quality of sanitation, hygiene and drinking water.
9. To improve health-seeking behaviours by education, awareness-raising and resilience in recognizing and treating child and maternal problems (e.g., pneumonia and obstetric emergencies) is also a public health issue.
10. Healthcare inequalities between the riches and better-offs, rural and urban areas, men and women deter to incorporate all people into universal health coverage of the country. Wide-spread corruption fuel to the existing disparity. Consequently, enumerated people particularly women, poor and rural people are deprived of proper treatment (WHO 2009 & 2010).
11. Preparation e.g. research and development of new interventions to confront the new public health emergencies is hardly seen. As a result, initiatives are taken at the time when many sufferings and deaths have already occurred. This is an ever increasing concern in Bangladesh.
12. Besides, mismanagement in healthcare delivery; deficient impact of essential service package on poor people living in rural and remote areas; irrational use of medicine; meager outsourcing of healthcare resources, skimpy public-private partnerships in healthcare delivery are also considered as public health issues in Bangladesh.

Major Strengths and Weaknesses of Healthcare Systems

Strengths

Despite ever-growing health issues, Bangladesh has made significant progress in many of its healthcare indicators and gains success in providing primary health care. All health indicators maintain a steady improvement as to health status of general population in the country. Infant, maternal and under-five mortality rates have decreased over the last decades with a marked increase in life expectancy at birth. It has achieved a credible record of sustaining 90% plus vaccine coverage in routine EPI along with NIDs (national immunizations days) since 1995. However, there are many strengths and weaknesses of the existing healthcare system in Bangladesh which are listed below (MOHFW 2008 & 2009).

1. Adopting Sector Wide Approaches (SWAps) has enhanced government leadership, improved sector policy and strategic focus, the effective use of aid to health sector and lessened transaction costs.
2. Initiation of National Health Account (NHA) under the Ministry of Health and Family Welfare has eased the implementation process of essential health services package.
3. An integrated strategy introduced to address the overall health issues of children (not just diseases but conditions affecting both the child and the quality of care delivered) has also strengthened the process of drug availability, reorganisation of the healthcare system, referral and patient pathway services, and community behaviours to maintain public health in the country.
4. Practice of evidence-based medicine related to patient care help health professionals diagnose and treat diseases, and reduce medical errors (BDGF: Health, Health Policy of Bangladesh 2009).

Weakness

1. National Health Policy has been revitalizing for the last couple of years. In fact, the policy discourses contain lots of incredible goals, objectives, system reforms and actions for the tertiary, primary and secondary care for people, but in reality, it turns into an important document without implementation.
2. Continuation of epidemiological survey at each year, identification of public health issues, challenges and its priority lists, and plan of action accordingly are infrequently done. Consequently, NGOs and international agencies cannot help the government enough to formulate a public health-friendly policy.
3. The healthcare system is mainly controlled by bureaucratic system. Initiative of decentralization is at the policy level. To some extent, administrative decentralization has appeared but bureaucracy in the health system defies financial management and decision-making of local settings and also deters local authorities to formulate essential services package to meet health needs of the local people.
4. Insufficient health services result to disparities among people in accessing the most urgent health services.
5. Shortage of health professionals and the government's inability to retain them in jobs has already posed as a great threat to deliver essential service package to the people-in-need.
6. Under-table payment usually creates inequities that break down the system and finally exhaust most of its achievements.
7. Rampant inequalities are found all over the system that creates a gap between the haves and have-nots and rural and urban population in accessing healthcare.

8. Out-of-pocket expenditure is two times higher than public financing in health care. The government fails to channel all payments as health insurance through an earmarked tax system. No referable step is also seen to ensure quality and accountability of the healthcare delivered by out-of-pocket expenses.
9. Evidence-based Medicine has already been introduced to a little extent, although it is not commonly practiced because of its inherent complexity, misperceptions, absence in medical curriculum, rigidity and unawareness of practicing by clinicians (Agarwal et al. 2008).
10. Uunauthorised sale of drugs by outlets and hereby complications of maltreatment; bureaucratic hustle of public-private partnerships in adopting and implementing essential service packages; and ambiguous roles of the state in healthcare delivery also weaken the existing healthcare system (Hasib 2008).

Major Challenges

Major challenges in healthcare system of Bangladesh are many and multi-faceted. Socio-economic under-development and natural calamities, communicable, non-communicable, degenerative and parasitic diseases continue threats and create new challenges towards the health of population in Bangladesh that can be pictured as below (ICDDRB 2009 & 2010; WHO-Bangladesh 2009 & 2010).

- Re-emerging communicable diseases e.g. Kala-azar, malaria, filarial, TB, dengue as a potential threat to public health.
- Non communicable diseases e.g. cancer, diabetes, cardiac, road accidents have already emerged as a threat to the populations' health.
- Substance abuse and tobacco consumption either by smoking or chewing create new health problems in the country.
- Natural catastrophes due to climate change challenge the existing health services and lead to deaths and disability every year (Hasib 2008).
- High healthcare costs, huge out-of-pocket expenditures borne by households engaged in low-income informal economic activities, and thereafter unsatisfactory outcomes degrade the health status and intensify the poverty of marginalized people more in society.
- To introduce healthcare insurance in public sector, and to channel huge out-of-pocket expenditures into healthcare tax persist one of the major challenges to improve the existing healthcare system.

Conclusion

The healthcare system in Bangladesh is permeating through a vicious circle, as figure-3 indicates, in consideration of the vast population, huge public health issues and challenges, healthcare services, workers and financing, and quality of services. Due to huge under-the-table payment in providing services both in public and private sectors, wastage and mismanagement of financial allocations, elite-based and centralized health care administration, fee-for-services and entrepreneurial mindsets of private hospitals and clinics, and socio-economic miseries of people, the healthcare management and its service delivery systems are not well-prepared as people demand to cure and prevent their illness. Patient-pathways are not yet introduced into the systems. Referral systems in patient care exist in the policy but not in reality. Primary health care and gate-keeping system are not introduced all over the country. Few NGOs have initiated health insurance at micro-level while public sector is far behind of its implementation. Nonetheless, a few international organizations are trying to reach to the people-in-need by ameliorating the present healthcare system. If their programs and instructions are followed strictly, Bangladesh may come out of the vicious circle of the existing healthcare system and serve the basic need of general population.

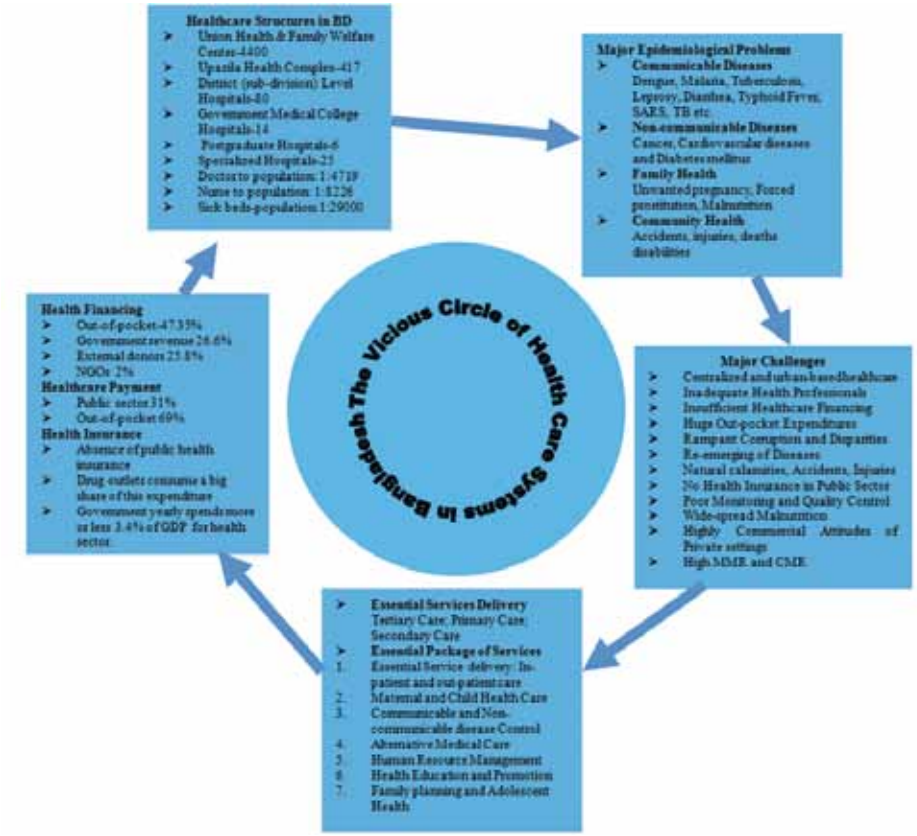


Figure 3. *The Vicious Circle of Healthcare System in Bangladesh*

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SUSTAINABLE REGIONAL HEALTH SYSTEMS

Difficulties in Seeking Sexual and Reproductive Health Services by Young People in a Rural Far-western District of Nepal

Mohan Paudel*
Joint Masters in Sustainable Regional Health System (Currently: HealthRight International, Nepal)

Harikrishna Bhattarai, *Master in Public Health (Chlorhexidine Navi Care/JSI R & T, Nepal)*

Bimala Acharya, *Post Basic Bachelor of Nursing, Registered Nurse- Nursing Council of Nepal (Currently: Registered Nurse at Sahhid Gangalal National Heart Center, Nepal)*

A B S T R A C T

Background
Young people and adolescents are more vulnerable in the face of growing sexual health challenges like HIV/AIDS and other Sexually Transmitted Diseases (STDs). This study aims to identify young people's perceptions, health care seeking behavior and communication about Sexual and Reproductive Health (SRH).

Method
A descriptive cross sectional study between February and April 2011 using self-administered questionnaires with voluntarily participating 229 girls and 156 boys aged 15 to 24 years was conducted in the eight randomly selected higher secondary schools from a rural district of Nepal.

Result
One-fifth (21.3%) of the respondents ever sought health facilities for their SRH needs. Majority (78%) of the visited health facilities comprised peripheral public health facilities. Of the non-visitors (n=303), over half (52.10%) did not seek health services because they did not experience any SRH need; over one-third (34%) did not go to health facilities because of discomfort to share problems and lack of trust with health facilities. Among those who ever visited health facilities for SRH needs (n=82), over half of the respondents experienced lack of confidentiality (56.1%) and difficulty in openly sharing their concerns with health workers (51.2%). Friend (55.3%) followed by 'school teachers' (23.4%) were the preferred source of SRH related information. Marital status, respondents' age, ethnicity and parental discussion about their young people/adolescent's SRH were found significantly associated ($P<0.05$) with the health service seeking behaviour.

Conclusion
A small proportion of the respondents have ever sought SRH services from the health facilities. The most common barriers in seeking SRH services were fear of social stigma, difficulties in communication with parents, lack of privacy, lack of information and adolescent friendly health services. Effective SRH services could be delivered by addressing supply side barriers, for example adequate and quality SRH counselling, adolescent friendly health services from public health facilities. Peer education programs, parenting education programs and targeting school teachers could be essential approaches in raising SRH awareness among adolescents/young people in these regions.

Introduction

One in every five people in the world is an adolescent; and 85 percent of them live in developing countries (WHO fact sheet-10 facts on adolescent health). Nearly two-third of premature deaths and one-third of the total disease burden in adults are associated with conditions or behaviours that began in youth, including tobacco use, a lack of physical activity, unprotected sex or exposure to violence (WHO fact sheet- Young people, health risks and solutions). Promoting healthy practices during adolescence and the efforts to better protect the young population from SRH risks could assure safer and more productive lives for many youths and adolescents. It is stated that reproductive health programmes should be designed to serve the needs of women, including adolescents, and that innovative programmes should be developed to ensure information, counselling and services for reproductive health accessible for adolescents and adult men (UNFPA/ICPD, 1994). Promoting sexual health, combating Sexually Transmitted Infections (STIs) including HIV/AIDS, and providing high-quality services for family planning are the core aspects as outlined in WHO SRH Strategy (WHO, 2004).

* Corresponding author: mohanpdl@gmail.com

Nowadays, SRH of young people has gained a major international concern (Le & Kato, 2006). Worldwide, young people ages 15-24 years account for an estimated 45 percent of new HIV infections (UNAIDS, 2008). The ill health due to SRH has become a growing concern in Nepal as well (Johan, Caucasia & Johan, 2010).

In Nepal, young population age 10-24 years comprises more than 30 percent of the total population (MoHP, 2011). Adolescents age 14-19 years comprise 13% of the all HIV infected cases in Nepal; adolescent girls occupy about one-third of the total HIV infections among the total women infected with HIV (NCASC/MOHP, 2000). In 2010, over 50,000 reported cases of STIs across the country (DoHS, 2010). In the study district, STI case load in 2010 (2919 cases) was found nearly five times higher the case load in 2009 (total cases 666) (DHO Achham, district reports: 2008, 2009 and 2010). This study aims to contribute young people's health care seeking behaviour by identifying barriers in seeking health care and by providing relevant strategic interventions to address young people's SRH.

Methods

Participants and procedure: This cross sectional descriptive study comprised a survey of voluntarily participating 385 school youths (229 boys and 156 girls) from higher secondary schools of a rural far-western Achham district in Nepal. Eight higher secondary schools were selected randomly from the list of total 27 higher secondary schools; the list was obtained from District Education Office of the study district. Achham district is considered as one of the remote and least developed districts in terms of socio-economic development in Nepal; the district has Human Development Index (HDI) value less than 0.4 and ranks among the low HDI districts in Nepal (Nepal Human Development Report, 2004). This study district has a total of 2, 57, 477 population; of the total population 18.76 percent is occupied by young people age 15 to 24 years (CBS, 2011). Achham is one of the most vulnerable districts reporting increasing number of HIV/STI cases among the returning migrants from India (Nepal, 2007).

Study tool: this study adopted questionnaires from the "Illustrative questionnaire for interview-surveys with young people" developed by WHO/UNFPA (Cleland, Ingham & Stone, 2001). Necessary modifications and translation of the questionnaires was done after consultation with health officials from the study district to suit them in the local context. Realizing the sensitive nature of SRH information, questionnaires were self-administered & made anonymous. Data collector gave 20 minutes instructions to voluntarily participating boys and girls. Written consent was taken from those sampled school authorities and individual participants before collecting the data.

Data analysis: descriptive statistics (mean, standard deviation, proportion) and logistic regression analysis was done using Statistical Package for Social Sciences (SPSS) version 16.00.

Results

Socio-demographic characteristics: Out of 385 respondents 59.5% were male and rest 40.5% were female. Four out of every five (80.5%) respondents were teenagers. Only one-tenth (10.4%) of the respondents were married and about one-fifth (23.6%) of the respondents were from broken families (who lost both or one of their parents). Nearly one-fifth of the respondents belonged to lower caste. The mean age of the respondents was 18.38 years (±1.587 SD) [Table 1].

Table 1: Distribution of Respondents by Major Demographic Characteristics

General Characteristics	Number (n=385)	Percent
Age group		
15-19	310	80.5
20-24	75	19.5
Gender		
Male	229	59.5
Female	156	40.5
Marital status		
Married	40	10.4
Unmarried	345	89.6
Structure of the family		
Intact family	294	76.4
Broken family	91	23.6
Ethnicity		
Disadvantaged/religious minority & Dalit*	72	18.7
Upper caste group	313	81.3
Education		
Grade 11	225	58.4
Grade 12	160	41.6
Religion		
Hindu	379	98.4
Other than Hindu	6	1.6

*: so called untouchable caste

Source of Information and Perceived Barriers: the major source of information for SRH was 'friends' (55.32%) followed by school teachers (23.38%). Fear of social stigma (31.8%), difficult to discuss with parents (20.4%) and lack of confidentiality in health facilities (18.7%) were the common barriers in seeking health services for SRH problems. [Table 2].

Table 2. Perceived Barriers in Utilization of Sexual & Reproductive Health Services

Perceived Barriers	Responses (n=1053)	Percent
Health workers are not friendly	131	12.4
Lack of privacy in health facilities	197	18.7
Difficult to communicate/ discuss SRH in family	215	20.4
Fear of social stigma due to SRH problems	335	31.8
Teachers do not cover SRH topics in class	175	16.6

Parental Communication about Sexual and Reproductive Health: more than two-third (71.4%) of the respondents felt discomfort to discuss about SRH with their parents. Only one-fifth (22.1%) of the respondents could ever discuss about SRH topics with their parents. Among those having parental discussions on SRH topics, over one-third (34.1%) sought health facilities for their SRH needs. Respondents who had ever had communication with their parents about SRH were more likely to visit health facilities [P 0.001; OR2.413; 95% CI (1.410 to 4.134)] compared to respondents who never had discussion on SRH with parents at their families.

Sexual and Reproductive Health Seeking Pattern: about a fifth of respondents (21.30%) sought health services for their SRH needs. Of the respondents not seeking health facilities ever (n=303), over half (52.10%) did so because they did not experience any SRH needs; while over one-third (34%) did not seek health services because of discomfort to share their SRH problem with health workers, and also they lacked the trust with the visited health facilities. A small proportion (6.9%) did not visit because they preferred to consult their friends for the needed information.

Among the total respondents who sought health facilities for SRH needs (n=82), nearly four out of every five (78%) respondents visited public sector health facilities during their last visit. The remainder visited private health clinics/hospitals. STIs including HIV/AIDS were the most common reasons to seek health facilities as cited by about two-third (65.9%) of the respondents [Table 3].

Table 3. Types of Health Facility Visited and Reasons to Visit Health Facilities

Categories	Number (n=82)	Percent
Type of health facility visited		
Government/public health facilities	64	78.0
Private health clinics/hospitals	16	19.5
Others	2	2.5
Reasons for visiting health facility		
Contraception	11	13.4
STI & HIV/AIDS	54	65.9
Pregnancy/Gynecological examination	17	20.7

About one-fifth (18.3%) of the respondents visiting health facilities did not have counselling on contraception during their last visit. Nearly two-third (65.9%) of the respondents perceived inadequate counselling on SRH from the visited health facilities. Likewise, about half (51.22%) among those who visited health facilities, experienced difficulties to share with health workers, and another half perceived lack of confidentiality in the visited health facilities.

Marital status, age of the respondent and ethnicity were significantly associated with the health facility seeking behaviour for SRH needs. Married [(P 0.0005; OR 6.558; 95 % CI (3.300 to 13. 032)] than unmarried, respondents from lower caste and minority group (P 0.033; OR 1.855; 95% CI (1.044 to 3.297)] than respondents from upper caste and teenagers [(P 0.012; OR 0.489; 95% CI (0.279 to 0.859)] compared to early adults were more likely to seek SRH services from the health facilities [Table 4].

Discussion

There have been very few studies exploring the health seeking behaviour of rural young people/adolescents relating to their SRH needs/problems in Nepal. With the emergence of HIV pandemics, STIs and several other SRH related consequences, this has been more important to know the health seeking behaviour of young population/adolescents particularly about their SRH needs/problems. This study aimed to explore the pattern of SRH seeking in a rural far western district of Nepal. It identified the difficulties as experienced by young people and their determinants. This study considered SRH needs in terms of needs and services for contraceptives, HIV & STI as well as other information needed during adolescence and young age to know and cope with the customary physical, mental and psychological changes that occur during this period of life.

Only one out of every five (21.30%) respondents ever visited health facilities for their SRH needs. Respondents who were unmarried, teenagers and respondents from upper caste were less likely to visit health facilities for their SRH problems. Gender, family structure and education did not make any significant difference in seeking the health facilities. In general, very few adolescents/young people have ever visited the peripheral health facilities in the study district. The finding of significantly more respondents visiting health facilities from lower caste group is a surprising finding; this might be because of the feeling of self-stigmatized behaviour which became a barrier in seeking SRH services more commonly among the upper caste. On the other hand, this might also be a positive effect of the lower caste targeted HIV/AIDS programs in the study district.

Among the non-visitors, there were about half of the respondents who did not feel the need to seek health facilities; nearly one-third (28%) of the respondents did not seek health facilities due to feeling of discomfort to discuss & share about SRH problems with health workers. Among the health facility visitors, though over 80% of the respondents were informed of STI & HIV/AIDS during counselling, about one-third of the respondents who received counselling perceived that the counselling was inadequate; further, the counselling did not cover information related to the consequences of unwanted pregnancies and abortion as stated by over half of those receiving counselling service. About half of the respondents visiting health facility felt difficult to discuss on SRH problems and another half (56%) said there was no privacy in the visited health facilities. Therefore, this study clearly signals that health facilities and health workers should be more adolescent friendly to address the SRH needs of young people. The young people's counselling about sexual health related problems should be a priority in all the health facilities; counselling should be adequate, could be better done by designing a minimum standard counselling package.

This study revealed that nearly one-third of the students felt comfortable to discuss about SRH concerns with their parents; however only 22 percent of them had ever discussed. One cross sectional study conducted in South China among the 15-22 years' young people found very few (15.1%) having communication with parents in sex related issues and those having extensive communication with their parents were found to have delayed sexual relation and used condoms during intercourse (Cui et al, 2004). Another study found feeling of embarrassment (72.0%) and fear of being seen by parents or people who know them (67.8%) as the major barriers in utilizing sexual and reproductive health services (Berhane, Berhane & Fantahun, 2005). One study conducted in Nepal identified that lack of negotiation and decision making skills especially among girls were leading them to unsafe sex (Regmi et al, 2010). Therefore, adolescents' discussion with their parents about SRH needs seems a crucial factor to shape

Table 4. Factors Associated with Health Facility Seeking Behaviour for SRH Needs/Problems

Variables	Health Facility Seeking (n=385)		P-value	OR	95 % Confidence Interval	
	Sought (n= 82)	Did not seek (n=303)				
	N (%)	N (%)			Lower	Upper
Gender						
Male	51 (22.3)	178 (77.7)				
Female	31 (19.9)	125 (80.1)	0.572	1.155	0.700	1.908
Marital status						
Married	23 (57.5)	17 (42.5)				
Unmarried	59 (17.1)	286 (82.9)	0.0005	6.558	3.300	13.032
Age group						
15 to 19	58 (18.7)	252 (81.3)				
20 to 24	24 (32.0)	51 (68.0)	0.012	0.489	0.279	0.859
Education						
Grade 11	41(18.2)	184 (81.8)				
Grade 12	41 (25.6)	119 (74.4)	0.080	0.647	0.396	1.056
Family structure						
Intact	62 (21.1)	232 (78.9)				
Broken (Lost one or both of the parents)	20 (22.0)	71(78.0)	0.856	0.948	0.537	1.677
Ethnicity						
Lower caste & minority	22 (30.6)	50 (69.4)				
Upper caste	60 (19.2)	253 (80.8)	0.033	1.855	1.044	3.297

the positive outcomes in behaviour of young/adolescents. Further qualitative study focusing on parental perception about communicating issues of sexual concerns with their adolescents/youngsters could be more insightful to conduct among separate groups of mothers and fathers. Discussion of SRH with parents could help adolescents to realize the importance of seeking health facilities and thereby, influencing positive sexual health related behaviour. Family focused SRH programs which create an enabling environment for young people to positively understand the sexual behaviour and knowledge could be more contextual in the rural communities.

This study explored that fear of social stigma due to SRH related problems followed by 'difficulty to communicate with parents' and 'lack of privacy in health facility' were the most common barriers perceived by the respondents. A Shrilankan study had noticed confidentiality, youth friendliness and accessibility of SRH services as main barriers; it also discovered that friends were most commonly consulted for SRH related concerns (Agampodi, Agampodi & Ukd, 1997). This study also found that over half of the students preferred their 'friends´ as the most common source of information on SRH issues followed by school teachers (23.38%). It hints the further need of community and peer education program to address the persisting stigmas, and shape positive health seeking behaviour among the young people; and, it also recommends the health facility/provider focused programs for ensuring adolescent friendliness during service provision.

Another qualitative study conducted among young people in Nepal noticed lack of economic opportunities, unemployment, huge communication gap about sexuality in family and considering sex as social taboo as the major challenges for promoting adolescent sexual health (Regmi, Simkhada & Van Teijlingen, 2008). Literatures confirm that the barriers of young people regarding SRH services are somehow similar though the context might be different. As evidenced by this study, future programs to address barriers in promoting health care seeking of young people for their sexual health related problems are required to address stigma attached to SRH, privacy in health facilities, openness of discussion with parents on SRH topics and creation of positive peer pressures.

Conclusion

Only one-fifth (21.30%) of the respondents ever visited health facilities to seek SRH services. This study found marital status, ethnicity and age of the respondents significantly associated with health care seeking for SRH related needs/problems from peripheral health facilities. Young adults (20 -24 years), married and youngsters from lower caste were more likely to seek health facilities. Over half of the young students who visited health facilities perceived lack of confidentiality and difficulty to communicate about SRH related problems in health facilities. Fear of social stigma, difficulty in communicating SRH with parents and lack of confidentiality in health facilities were the commonly perceived barriers to seek SRH services by the young people/adolescents.

Counselling for SRH in the health facilities was inadequate as perceived by nearly two-third (65.9%) of the respondents. The same proportion (71.4%) of the respondents perceived difficulty to discuss about SRH related problems with their parents; only one-fifth (22.1%) have ever discussed with parents in their families. This study therefore recommends the need of interventions in both the supply side (adolescent friendliness of peripheral health facilities) and demand side (need of parental education, peer education and community programs to address persisting stigmas) to mainstream young people/adolescents' SRH through peripheral primary health care facilities.

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SUSTAINABLE REGIONAL HEALTH SYSTEMS

Ageing and its Challenges

Tri Rahmat Basuki*
Student at Erasmus Mundus master in Sustainable Regional Health Systems
Benjamin Van Laethem, John Nelson Opio, Justine Mbelu,
Students at Erasmus Mundus master in Sustainable Regional Health Systems

A B S T R A C T

Background
Worldwide ageing is becoming a common concern as it poses big challenge and problem to the society and the state. There is continuous decline in total fertility rate globally creating imbalance in population structure. That means increase dependent population and decrease active population. Although all countries in the world are experiencing ageing, the way each country dealing with ageing range from state welfare to family care and self care. In this paper, we discussed about ageing situation, ageing challenges and the recommendations in managing ageing population.
Method
Using literature review from international journals such as pubmed, journal of epidemiology, journal of ageing research, health affair, international journal of health service and other publications from international organizations such as WHO, United Nations, European Commission, World Economic Forum, Scottish Government, and Harvard University about ageing population focusing on its challenges and recommendations.
Results
The challenges of the elderly are health, security, independence, and mobility. Society need to prepare health and age care, finance, employment, and other social aspects. The recommendations in managing ageing population are focusing on healthy lifestyle; social interaction; new care model, pension and financial system.

Conclusion
Healthy lifestyle, new care model, retirement planning and management of care funding are some recommendations that can be implemented in managing ageing population.

Key words: Ageing population, ageing challenges, ageing recommendations.

Introduction

Worldwide ageing is becoming a common concern as it poses big challenge and problem to the society and the state (European Commission, 2009). In addition there is continuous decline in total fertility rates globally creating imbalance in population structure (Ebrahim, 2002). That means increase dependent population and decrease active population (Tarricone & Tsouros, 2008). Although all countries of the world are experiencing ageing, the way each country dealing with ageing range from state welfare to family care and self care (Ebrahim, 2002).

In order to tackle the ageing challenges that impact on an individual, society and the state, it is important to have a common understanding of the term ageing. Ageing is multidimensional process of physical, psychological, and social change. Changes such as knowledge of world events and wisdom may grow and expand over time, while others decline. According to Evan whose work was quoted by Ebrahim (2002) ageing is a loss of adaptability to performance challenges. Therefore ageing definition may be based on functions of the three dimensions (physical, psychological and social change) associated with number of years lived. For the purpose of discussing this documents we adopted Bloom et al. (2011) ageing population as being population of persons who is age 60 years or older. Throughout the documents, the term ageing and elderly will be used interchangeably.

The trend in demographic, epidemiological, social, and cultural change as well as traditional patterns of care for the elderly has created diverse needs and social structure, requiring different approach for health and social sector policy and services. Preventing the need for unnecessary acute or long-term institutionalization and maintain individuals in their home and community as long as possible are more viable approach (Tarricone & Tsouros, 2008).

* Corresponding author: rahmatbsk@gmail.com

The increase of ageing population come with consequences including slowdown in economic growth, savings, investment, consumption, labor markets, increase pensions, taxation and intergenerational transfers. In social aspect, ageing population influences family composition and living management, migration, epidemiology and health care services, including voting for leaders (United Nations, 2009).

The financial sustainability for pension and health care will require partnerships, and integrations of retirement planning and health care (World Economic Forum, 2009). When more elderly people who are not in active productive work life, and have higher cases of chronic diseases, the cost of health care services would also rise due to new technology for managing the chronic conditions (Meara, 2004). Adopting variety of strategies, many of them in social sectors outside the health system to reduce or mitigate the overall effects of likely long-term care needs (Saltman, 2006). Reinhardt (2003) work showed that the declining future ratio of workers to elderly will stress the political economy of transferring financial and real resources to the elderly. Gradually increasing fraction of the nation's output of real goods and services to the elderly. Because ageing is a gradual process, strategies to improve system performance, redesign service delivery, support informal care givers, and shift in demographic parameters are needed (Reinhardt, 2003).

The aim of this paper is to give general description on ageing population, ageing challenges and ageing recommendations in order to ensure ageing with low probability of disease; cognitive and physical functioning capacity and active engagement with social life (Ebrahim, 2002).

Method

We used electronic and printed resources such as pubmed, journal of epidemiology, journal of ageing research, health affair, international journal of health service and other publications from international organizations such as WHO, United Nations, European Commission, World Economic Forum, Scottish Government, and Harvard University. We combined search term related to ageing population, ageing challenges and ageing recommendations.

Results

1. Global Ageing Situation

Since 1950, the number of old people has increased continuously from 8 % (1950) to 11 % (2009), and predicted will reach 22 % in 2050. This condition will continue increase if the current trend life expectancy continues and with declining total fertility rates. The proportion of old people (above 60 years) increased then followed by decreasing of children population (under 15 years) and continued by the dropping of working population (15-59 years). This condition had already happened in developed countries where the number of children population fell under old population in 1998.(United Nations, 2009).

Over 600 million the total number of old population (over 60 years) in 2000. Three time higher than the population in 1950. In 2009, the number of old people has reached about 700 million. And it is predicted to hit 2 billion people by 2050. It means that the total of old population become triple over in 50 years period (United Nations, 2009). Ageing population in lower level of social and economic development is on a faster increase in developing countries than in developed countries today. The question is how prepared are they to tackle the consequences of ageing population? (United Nations, 2009).

2. Challenges and Recommendations for Ageing Population

The challenges for ageing population could be described into 2 categories:

a. Individual level:
   - Health
   - Security
   - Independence
   - Mobility

b. Society and State (Policy) level:
   - Health and age care
   - Finance
   - Employment
   - Social aspect

Since different level has different capability and resources, recommendations for managing ageing population should address on each level of challenges. The complete explanation and description of ageing challenges and recommendations are described in the discussion.

Discussion

1. The Challenges of Ageing Population

a. Individual Level

Health

Ageing people develops a series of recurrent diseases, according to Centre for Cardiovascular Education the main diseases of ageing are: Neurological diseases (Alzheimer's disease, Parkinson's disease), Urinary incontinence, Depression, Mental disorder, Chronic diseases (arthritis, diabetes), Heart disease, Heart attack, Osteoporosis, Pneumonia and Stroke. The prevalence of those disease categories due to long term environmental exposure (smoking, bad eating habits, and lack of exercise) from early age of life. This conditions would require complex health care services, technology for diagnosis, treatment (medications and compliance) or life support to provide quality adjusted life year and reduce the mortality of elderly persons. This care may be offered in long care model either at the institution or at home. In addition to this, the majority would require rehabilitation and physiotherapy care (WHO, 2012).

Security

The security topic is a big issue when we are speaking about ageing, for each individual which reach a certain age and a certain period of their lives there is an uncertainty about the future. Those issue play an important role in the mental stability and have concern to the all aspects of life. The main problem related to this issue are:

a. Material Aspect (Food and Finance)

For ageing people the capacity to work decrease or stop completely, there is then economical and material issues raising, it can concern to the food security, a decent place to live, the mobility, etc. The food availability problem is not only a problem of access to food, but also a problem of transformation (cooking) as some elderly people may be unable to cooked for themselves, due to physical inability such may include visual impairment, muscle weakness, thereby resulting into nutritional inadequacy needs of elderly people (The Caroline Walker Trust, 2004). In some cases its due to lack of availability of food where they have to buy food and in the absence of social services, or support from the relative. Hoff

(2008), noted that poverty among the old persons is generally higher than in the normal population, mainly in the countries where there is no official pension fund or long term assurance fund.

b. Social activities

The capacity to keep social activities in spite of the ageing effects is part of the security issue, because social exclusion is a reality for ageing people (Lowry et al., 2012). The spread of club house centers in the society is a good illustration of the high necessity of social activities for elderly people.

Independence

The independence can be express as the capacity to live without any exterior help. It is usually express in term of losses, it can concern physical losses, social losses, or emotional losses (by the loss of control of their own lives). Different indicators can express each dimensions according to the culture but here we will focus on how each individual need to cope personally with the loss of independence and the dependence to someone else (European Commission Information Society and Media, 2009).

Mobility

The mobility issue is part of the ageing problem. It concerns first the exterior mobility, for example in the U.S. the main barriers to community participation included: unsuitable building design (43%), transportation (32%), and sidewalks/curbs (31%). This mobility problem concern as well the dependence to life or to make the grocery shopping or even the physical capacity to get access to the care providers. It concerns secondly the "inside house" mobility, one part of the dependence is based on the capacity to still move inside the lodging in order to keep a normal daily activities (Kochtitzky et al., 2011).

About the social exclusion, table 1 gives the main factor of social exclusion in EU. We can see that there are various and complex series of factors, which need complex answers.

Table 1: Factors that Increase the Risk of Social Exclusion for Older People in EU

Risk Factors	Countries
Living in rural areas	Austria, Finland, Ireland, Poland, Portugal, Slovakia
Immigration background	Austria, France, Germany, Slovenia, Sweden
Poor access to social services, social care	Czech Republic, Ireland, Lithuania
Poor housing conditions, neighborhood	Hungary, Lithuania, Poland
Early exit from labor market	Hungary, Netherlands, Poland
No access to IT	Czech Republic, Finland, Lithuania
Poor access to public transport	Czech Republic, Ireland
Lack of political representation	Poland, Sweden
Lack of support for family care	Ireland, Spain
Being an old male	Finland, France
No experience with benefit system	Ireland, Spain
Low educational attainment	Poland
Lack of coherent old-age policies	Poland
Inadequate housing	Ireland
Alcohol abuse	Finland

Source: Hoff, 2008

b. Society and State (Policy) Level

Ageing population is possible recognized as a hazard and opportunities for the society. That is why the society and state must prepare it very well. It will be an opportunity if we could make a good planning in the management of ageing population. And also it could be a hazard if we cannot manage this ageing population carefully (Zaidi, 2008).

Health and Age Care

Since the people are living longer and not every year in a good health condition, we could make prediction that many resources will be needed in the providing health care services to the ageing population (Zaidi, 2008). The ageing population need to be supported by follow up the changing technology in order to provide an access to the advanced diagnostic tests and medical treatments. These conditions have increased the demands on health spending (Commonwealth, 2004).

Society and government has to provide formal and informal long term care services to the elderly. Informal care is done by the close relative or family member of the elderly person, such support include mobility support, shopping, preparation of food, and nursing and psychological care. However, these seems to be overridden by social services care offered by the government in some countries while in others the society still hold good bondage. There is a need that we should increase the role of informal care and create a new policies such as incentives to individual family members who want to take care of their own older family members. Also we should know how to motivate private sector to provide achievable and best quality long-term care. Need a lot of innovations to fulfil the demands of social and health care. Society should be able provide care services at home, day care centres or other institutions (Zaidi, 2008).

Institutionalized or formal care is one of the services that needed to relieve the emotional and physical burden for home care givers. The need for institutionalized care services for all senior people is increased because the high number of elder people and the practice of one child per family policy (Li, 2005).

Finance

In order to maintain the living standards of ageing population, societies need to continue provide adequate pensions to the pensioners (Zaidi, 2008). The increasing population of elder people means increases the demand for age pensions (Commonwealth, 2004).

Mostly countries are concerned about how many percentage of GDP should going to pension provisions and how it will be increased in the future. In other words, the societies have the challenge to provide sustainable pensions, not overly generous, modernize the operation systems, able to cover all the groups especially those who have low pensions, and ensure intergenerational fairness (Zaidi, 2008).

Another challenge in financial issues is effect of ageing population to the asset prices. There are some concerns that the asset prices will decrease because many elderly people sell off their assets ('asset meltdowns') (Bloom et al., 2011).

Ageing population has been introduced some types of pension systems. Today, pay-as-you-go (PAYG) pension systems meet some serious challenges because the expenses number will be increased and revenue number will be decreased. Fully funded systems are not really applicable because this system require several period of time for substantial pensions delivery. On the other hand, voluntary funded pension systems are usually not implemented as planned because of the policy delay and mandatory funded systems also not implemented yet because it could make the government in trouble. That is why there is a need to introduce the mix funded (private and public) systems as a solution to minimize the risk (Bloom et al., 2011).

Employment

When people reach the age pension, their participation in labor force will decrease. The number of assets possible to decrease since mostly the old people relies on their savings or assets to support their expenses. There will be enhancement in elderly dependence except that the elderly work participation increases (Bloom et al., 2011).

Encourage people to work longer and remove the barriers are another challenges to increase the productivity of the ageing population. There is a demand for state doing some changes such as improves incentives for longer worker, increase the state pension age, limitation of early retirement and mandatory retirement (Zaidi, 2008).

Also there is a need to change the employers' opinions about older workers. They should change their negative perceptions of older workers and provide a better working environment for older workers. Society or government does not only prepare the old worker but also prepare other workers in this sector by increasing the number of people who want to work in nursing and home care sector. Not only the quantity of care workers but also increase the quality of the care workers by giving a training and course about ageing population (Zaidi, 2008).

Social Aspect

The physical inability may prevent the elderly person to participate in most community activities. Ageing population brings new setting of social coherence in our community. Society need to know how to set up community that younger and older people live well and productively with each other. This challenge not only for public sector but also for the private sector (Zaidi, 2008).

Ageing population also brings many young workers from other community or other country to work in home care and nurse care industry. This condition also considered as a challenge for the society, how they could make an integration between migrant workers and the overall society (Zaidi, 2008).

On the other hand, immigration also possible increases the old population. Because the migrants come when they were young and they will stay in the country until they are retired. To keep the age structure through immigration means necessary to increase the immigration every year. The number of immigration need to be larger and larger each year to make the balance of the ageing from migrant's population. However, migration may not stop the ageing process of the population (Commonwealth, 2004).

2. Recommendations for Managing Ageing Population

a. Individual Level

Health

As described the majority of the health problem concern the long term prevention and life style/habit, we propose then to focus on healthy lifestyles (smoking cessation, exercise and proper behavioral changes) before and during the ageing period in order to prevent as much as possible certain diseases as diabetes, cancer, and heart problem. Practically those programs are not new innovation because a lot of those programs are already existing in developed countries. However, we think that we should focus their actions more on the passage time between working adult time and elderly people period, even if this passage is variable for each individual.

Security

Poverty among ageing people is one of the major issue of security, for an individual point of analyze informal social support can be promoted, however it is really difficult to promote informal social capital, there is a risk of institutionalization and formalization which can be a break for personal relationships. Retirement planning and compulsory saving could be done to give security to elder people. Physical security goes along with an improvement of the accommodation facilities (bathroom, stair etc) because risk of failing is a reality for ageing people. This can be improved by providing a better sensibility to those problem together with financial incentives.

Independence

The problem of dependence will be occurred to everyone, however it can be delay by some educational program to educate people and prepare them before it occurs. Another key element today is the utilization of the information, communication and technology to facilitate the everyday life of ageing people. For a structures point of view it is possible to imagine incentives for the adaptation of the accommodations. In the occidental society, we can imagine to emphasize more on the family value in order to create an informal or non medical and personal form of everyday support to the old people (European Commission Information Society and Media, 2007).

b. Society and State (Policy) Level

Family Participation and Social Contact

In term of social participation, the individual support can be the most effective but the most difficult to be implemented. Here again we think it is important to prepare the problem before it arrived, but in this case, it is really important to include the family and circle of friends in it. As seen in the descriptive part, social exclusion is usually associated with a geographical exclusion (rural areas and problem of access to services) which is bringing us to the mobility issue.

Mobility

Personal issue about mobility is complex to manage and usually confronted to the financial shortage aspect, however initiatives can be done to facilitate mobility of old persons, such as free public transport. Personal mobility improvement goes together with improvement of the infrastructures or facilities (pavement, road, crossing lift) and the improvement of the local services.

New Care Model

Table 2: The comparison between old care model and new care model:

Old Care Model	New Care Model
• Geared towards acute conditions • Hospital centred • Episodic care • Disjointed care • Reactive care • Patient as passive recipient • Self care infrequent • Carers undervalued • Low technology	• Geared towards long-term conditions • Embedded in communities • Team based • Integrated, continuous care • Preventative care • Patient as partner • Self care encouraged and facilitated • Carers supported as partners • High technology

Source: The Scottish Government, 2010

Home care should focus on assessment, modern home care delivery systems should asses, screen their activity early and multidimensional; integration, coordination between users and providers to achieve the efficacy and efficiency home care services; proper management skills, social and health care staff should have a good management skills such as "developing steering mechanisms for commissioning, contracting, purchasing, planning, evaluating, quality assurance mechanisms and producing policies"; information centre, this is an important program to support clients needs and improve communication and cooperation between different home care workers and non-professional workers (WHO, 2008).

Cost and Funding of Care

To reduce the unnecessary expenses some actions can be done such as reduce or avoid the hospital admissions, reduce or avoid the early admission to home care, create more new strategic approach to home care system, making home care infrastructures more simple. Some recommendation to increase the funding of home care are increase taxation, require individuals to participate in funding such as by insurance scheme, or some other initiative payment (The Scottish Government, 2010).

Conclusion

We can conclude that the challenges of the ageing population:

- individual level: health problem (chronic diseases), security, independence and mobility.
- society and state (policy) level: health and age care, finance, employment and social aspect.

Therefore it is important to propose recommendations at each level. Healthy lifestyle, new care model, retirement planning and management of care funding are some recommendations that can be implemented in managing ageing population.

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reghealth

SUSTAINABLE REGIONAL HEALTH SYSTEMS

Integration of Traditional Faith Healers into Health Systems as a potential solution to address mental health challenges – A MIRA DATAR case study in Gujarat, India

Saxena Megha

Graduated from Indian Institute of Public Health Gandhinagar, Gujarat, India; Swarna Jayanti Samudaik Hospital, NGO managed hospital in rural areas of Mathura, Uttar Pradesh India

Saxena Abhishek*

Graduated from Institute of Health Management & Research, Jaipur, Rajasthan India; Health & Family Welfare Department; Government of Gujarat, India

Chauhan Ajay, *Medical Superintendent, Government Mental Hospital Ahmedabad, Gujarat*

Hamlai Milesh, *Managing Trustee NGO "The Altruist"*

(Saxena Abhishek & Saxena Megha are joint first authors)

A B S T R A C T

Background
Alternative treatment seeking, known as Faith Healing, has a significant cultural role in provision of Mental Health services in India. An initiative has been taken by the Government of Gujarat to integrate traditional Faith Healing and the concept of modern medicine. This research tries to explore whether the model "DAVA and DUA" can address to mental health challenges in the present circumstances.

Method
The study involved qualitative approaches like transect walk, observation (participant) and informal interviews to understand the integrated model of delivering mental health services. Secondary data on the inflow and treatment of beneficiaries was also utilized.

Results
The model is accepted well by both the service providers ie, traditional faith healers (Mujavar) and Medical Service Providers and beneficiaries. The findings suggest that the service providers complement and supplement each other in this particular initiative which is good for the beneficiary. Growing acceptance of this integrated model is supported by the increasing number of beneficiaries provided treatment.

Conclusion
In the present resource settings of developing countries like India, alternative treatment therapies may be integrated into the model of care, to achieve optimal utilization of available resources. The 'Dava and Dua' integrated model is a successful approach to address mental health challenges at the community level.

Background

Mental Health contributes significantly in health as the definition of health according to WHO mentions "Health is a state of complete physical, mental, social and spiritual well being and not just merely an absence of disease or infirmity". It gives the ability to many varied experiences of life with flexibility and sense of purpose. (Park, 2011)

Mental health is the balanced development of the individual's personality and emotional attitude which enable him to live harmoniously with his fellow men. It is not exclusively a matter of relation between persons it is also a matter of relation of the individual towards the community he lives in, towards the society of which the community is a part, and towards the social institutions which for a large part guide his life, determine his way of living, the way he earns and spent his money, the way he sees happiness, stability and security (WHO, mental illness in the world of today, 1959)

Mental health indicator reflects the status of the social well being of the population. In the past component of mental health was not incorporated in planning process of nation and state although many international and nongovernmental organizations raised their voices. It was post independence when mental health was recognized as a significant component and the need to provide support and care to the beneficiaries was felt but no substantial steps were taken or remained confined due to a misconception of low prevalence in India (Ministry of Health and Family Welfare, 1982)

* Corresponding author: drabhisheksaxenaiihmr@gmail.com

The point prevalence of common and severe mental disorders in Gujarat at any point of time is around 2.8 million adults. The incidence of Schizophrenic cases per year is 11000. The service delivery focus on severe mental disorder but it should also focus common mental disorders. The mental illnesses are commonly associated with comorbidities of life style disorders and ageing. The catastrophic disaster of an earthquake in 2001 and past communal violence had also contributed to increase in the incidence of mental illnesses like depression and anxiety. (Department of Health and Family Welfare, April 2004)

Allocations to the Mental Health sector are less than one per cent of the total health sector budget. Most of these funds are being spent on hospital and institutional services which focus on severe mental illnesses. Additionally most of these funds are just sufficient for meeting salary expenditures and not much is available for other program components. Lower budget allocation limits the availability of services within the government system. Under these circumstances people in need of services depend on the private sector. About 90 per cent of total expenditure in the mental health sector is financed out-of-pocket. Financial protection mechanisms are not available to the populations in general. The cost of seeking services is high. This is because the treatment is long term in nature. Because of limited availability of mental health facilities, patients and their relatives have to travel long distances and transportation is one significant component of the total costs (Department Of Health & Family Welfare, 2003)

Some of the specific challenges faced by the mental health sector include:

- shortage of trained human resources,
- inadequate training capacity,
- lacunae in laws and regulation,
- absence of multidisciplinary approach,
- poor or non-existent linkages between community and hospital-based care
- weak institutional framework including government, private sector, civil society in general
- absence of rehabilitation services (Department of Health and Family Welfare, April 2004)

Mental disorders not only incur burden on the individual but family and society is also burdened enormously. Several studies have shown that knowledge of public attitude to mental illness and its treatment is a vitally important prerequisite to the realization of successful community-based programs (DGHS, 1990.)

WHO also acknowledges the role of community and integrated approaches with primary health care as a potential solution to address mental health challenges (WHO, Integrating Mental health into primary care – a global perspective, 2008)

Mental health is also influenced by the culture to which the individual belongs: cultural norms, customs, beliefs, and community values and attitude play an important role in the health seeking behavior of the individual and compliance to treatment. Prevailing myths and misconceptions, and social stigmas, act as restricting factors for the individual seeking treatment The practices followed in a community based upon religion are of particular importance, as these practices can be a tool in achieving a state of joy, comfort, and pleasure, and averting suffering, pain, stress, and misery (Farida, August 2009)

In India, psychiatric disorders have historically been attributed to the influence of supernatural phenomenon, and many individuals seek 'magico-religious' treatments. There are many holy places in India which are divine and known for supernatural healing and treatment, carrying a deep-rooted cultural resonance.

About the Initiative: "Dava & Dua" is a unique concept an excellent amalgamation of traditional faith healing and modern scientific mental health since 2008 (Altruist & Action for Mental Illness, 2011). The system, providing medical treatment to mentally ill patients, is being implemented at the Holy Shrine of Mira Datar Dargah, Unava in Gujarat. This concept safeguards the rights of the patients and controls the chronicity of the illness.

550 years old, the Dargah *(Grave of a Muslim Saint)* of Hazrat Saiyed Mira Ali Datar is situated 100kms from Ahmadabad, well known for treating the un-explained ailments related to the world of ghosts and djinns, especially mental and behavioral problems. Patients' turnout is also substantial at Dargah. The patients here are treated by the religious traditional faith healers known as Mujavars with unknown traditional healing rituals since 15th century (1442 BC). The belief is that Hazrat Saiyed Mira Ali Datar became a Martyr at the age of 16 and he became a Holy saint and with his divine powers the patients who visit his Shrine are healed from their sufferings.

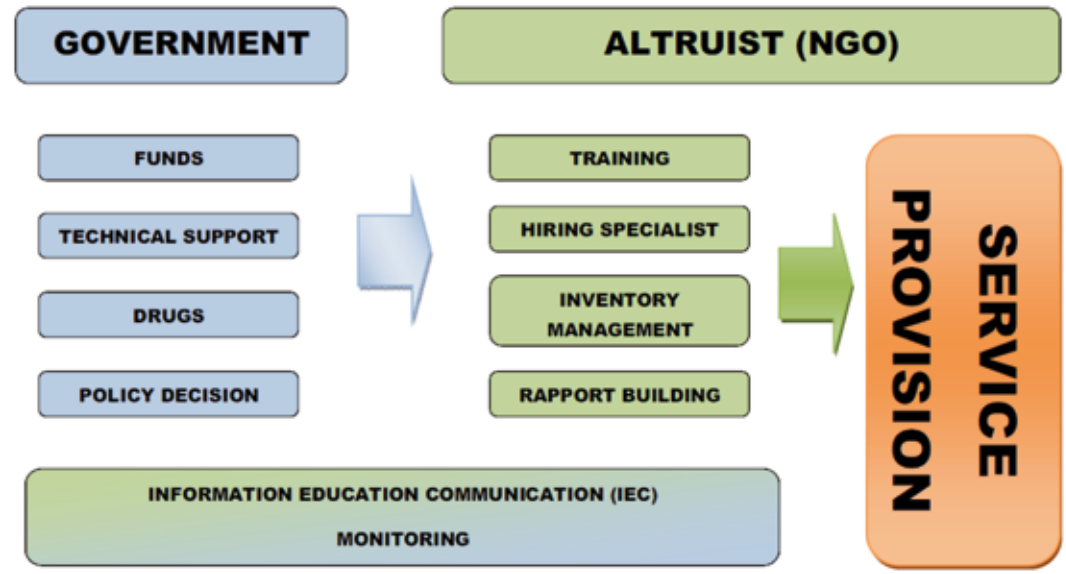

Figure1. *Roles of Government and Altruist*

The *main objective of the program* was to safeguard the human rights of the patients visiting the Dargah for holistic care, provide them with medical treatment and create awareness on mental health without disturbing their faith.

Mental Hospital Ahmedabad in collaboration with a NGO (Altruist) started the project. The project is a public-private partnership (PPP) between the government, Altruist and the Dargah designed to integrate psychiatric, bio-medicine into the religious practice at the site without questioning the religion itself in any way. To integrate the two practices they have trained the Priests to identify mental illness that would benefit from bio-medical treatment and then to direct those patients to the psychiatric services provided by Altruist.

In the Indian context there is a missing link between health care services and the client. This could be due to a lack of understanding of mental illness, a lack of psychiatric services in Primary Health Centers or to the preventative costs associated with private practice; this gap is bridged in this instance by the faith healer who can identify and direct clients to the care they require.

The project incorporates training of identification of mental illness with some therapeutic and counseling training so that Priests at the Dargah can speak to devotees about their illness and their medication on using their language and in a setting in which the clients are comfortable.

Methods

With this background a study has been conducted to understand the mechanism and its usefulness with following objectives

- To document and understand the existing PPP model of mental health.
- To identify whether the existing initiative could be a potential option to strengthen mental health services

The methodology used in the study included observation techniques (non participant and participant), and informal interviews which provided a strong qualitative tool measure for better understanding of this particular initiative. The techniques used were different for different aspects of the study. To better understand and comprehend the situation of the study area, non participant observation techniques were used which included transect walk in the village and nearby areas of the Mira Datar Dargah, and informal interviews of the residents and shopkeepers of the study area. For the observation of process of faith healing and treatment by psychiatrist written consents were taken, and from the psychiatrist and from the beneficiary or their relative in case the beneficiary is not stable:

Study Setting

The holy shrine (Grave of a Muslim Saint) of Hazrat Saiyed Mira Ali Datar, 550 years old is situated 100kms from Ahmadabad in Unava village, near Mehsana district, Gujarat. It is well known for treating the un-explained ailments related to the world of ghosts and djinns, supernatural powers, especially mental and behavioral problems. The beneficiaries are treated by the religious traditional faith healers known as Mujavars with traditional healing rituals that date back centuries. The Mujavars called themselves a mediator between the beneficiary and the holy shrine of Mira Datar as they are the descendent of Baba and receive through legacy the strength to offer prayers. The literal meaning of Mira is brave and Datar means giver or the problem solver. The belief is that Hazrat Saiyed Mira Ali Datar, a Martyr at the age of 16 became a Holy saint and with his divine powers the beneficiaries who visit his Shrine are healed from their sufferings. The visitors come here with their problems and Baba blesses them by relieving their sufferings. There are separate male and female sitting areas for prayers, males were sitting and facing shrine at the right side, similarly females were sitting at the left side and facing holy shrine in the middle. There were rooms which were poorly lit and made for beneficiaries and their caregivers to stay and seek long term healing (chronic cases) in the courtyard of the holy graveyard of Mira Datar.

Tools of Data Collection:

- **Transect Walk**

The study setting (Mira Datar Dargah 550 years old holy shrine (Grave of a Muslim Saint) of Hazrat Saiyed Mira Ali Datar) is located near to the public bus stand (approximately 100 meters). Near to the Dargah there is an old pond with low levels of water where beneficiaries used to wrap themselves in mud and then dry themselves in the sun before being required to bathe in a drain contains mostly muddy water as a part of cleansing process. The nearby area is developed into guesthouses and eating spaces for visitors and their accompanying relatives. The office of the NGO Altruist which is running the project is in the village near the local post office. The Office of the NGO is basically for administration purposes, data collection, and local storage of psychiatric medicines which are prescribed and given to the beneficiaries. The village area nearby to the Dargah are populated predominantly by local faith healers and their families

- **Informal Interviews**

To better understand the situation informal interviews were made with local residents of the village representing different ages and genders. They were asked primarily about the faith healing at Dargah and their opinion about this initiative where faith and medicine complement each other for the betterment of the beneficiary. In order to achieve variation in the opinions interviews were made randomly with the shopkeepers and residents who were passing by or sitting at the shops in areas near and far to the Dargah.

- **Non-Participant Observation:**

Entering the Dargah at right side there is a HAUZ, a pool filled with holy water. The same water is also sought as one of the holy items of Dargah and part of ritual performed in faith healing. The holy water in the hauz is used by the beneficiary for drinking and cleansing purposes.

In the middle of the Dargah the holy grave of Hazrat Saiyed Mira Ali Datar is located where all the devotees come and worship

There was an interesting place known as DADI AMMA KI CHAKKI (tomb) in the upstairs of Dargah compound which was packed with mentally ill people continuously encircling the tomb. The faith attached with this activity was it would burn the evil spirit attached to the individual.

There were CHAMBERS FOR MUJAVARS divided by partitions where they perform faith healing rituals with their clients. Also there was an old tree on which lemons were pinned and the underlying faith behind this was this activity would detach the evil spirit associated with the individual.

- **Participant Observation**

In an effort to avoid conflicts after observation of the study setting (through two weeks of transect walk and informal interviews, we were introduced by the project manager of the NGO to the committee chairperson of the local faith healers (Mujavars) and to other Mujavars subsequently. We were oriented to woes the faith healing process by the Mujavars. The following were the activities mentioned and demonstrated to us:

Chaddar Chadhana: A chaddar (rectangular piece of cloth / sheet) is offered at the shrine of Saiyad Ali as a part of healing ritual

Dhage/Chhalle Bandhna: A thread tied up at the shrine (on the wall covering the grave of the saint)

The scope of the study does not contain the analysis of faith healing and the study has been restricted to analyze only the medical services being delivered and the initiative that brings forth a combined model of faith and medicine in the present healthcare delivery settings

- **Treatment by psychiatrist**

The treatment and counseling given by the psychiatrist is observed in the Dargah premises where the psychiatrist provides services when beneficiaries are directed to them by Mujavars, or they were follow-up cases and had prior appointments. Formal signed consents were taken from the psychiatrist and beneficiaries to observe the treatment sessions where the beneficiaries were addressed by a psychiatrist and provided medicine until the next follow-up visit (this varied from case to case).

Results

The model studied above has been conceptualized in order to address mental health challenges existing in public health settings lacking a service delivery model that adequately meets the demand for mental health services. In the given circumstances, this initiative by Government of Gujarat with an NGO (Altruist) is a milestone to address these challenges.

This initiative has very well identified the opportunity to establish a project that can provide maximum benefit to the community facing mental health challenges by the following:

1. Identification of beneficiaries
2. Bringing them to the medical provider
3. Tapping existing resources (faith health) to meet the demands of the community

The major challenge to overcome was to convince faith healers to participate and refer beneficiaries to a psychiatrist. With a series of meetings and dialogues with authorities of Dargah trust, this was also overcome. Simultaneous efforts by the NGO have helped the project to establish its identity in the community at the same time:

The model under study was also analyzed on the basis of performance of the initiative in terms of numbers of beneficiaries identified and treated. Secondary data of beneficiary inflow was another parameter which was used to analyze the model. The data has been obtained by the NGO Altruist which is managing the services at the Dargah and also the data has been cross verified at Hospital for Mental Health, Ahmedabad. The number of patients seeking medical care through the project is substantial: as in medical illness, the treatment duration is quite long and the project has managed to cater to follow-ups of the beneficiaries which is very crucial. The follow-up of the beneficiary is the key to the success of this model and is organized in a systematic way by the dedicated staffs of the NGO who maintain the record of the beneficiaries and regularly reminds them through telephonic conversation.

The number of patients seeking medical care through the project is substantial, for the last two consecutive years are around 3500. The treatment duration with mental illness is long and the project has managed to cater to the follow-up of the beneficiaries. This can be due to the *complementary effect of the faith component* which helps the beneficiaries to come for regular follow-ups.

The graph below gives an overall picture of the beneficiaries diagnosed with different mental illnesses are provided with medical services at the OPD of Dava & Dua.

Based on the analysis of above facts and applied observation techniques, it was found that the model was a good strategic move to address the challenges of mental illnesses in the given scenario with the available resources:

Discussion

The initiative by Government of Gujarat appears to be promising utilizing the best available resources; this initiative has led the faith component to converge with modern medicine. This is a remarkable initiative an India where mental health is associated with faith and faith healing is sought as a solution to cure mental illnesses: this initiative acts as a bridge to connect people without disturbing their faith, allowing them to also seek medical treatment from psychiatrist. The synergistic effect of faith and medicine has brought change in the condition of the beneficiary, which is quite clear from the analysis of number of visits and compliance of treatment. This shows it is being accepted by the beneficiaries and the Mujavars. Also the important aspect of safeguarding human

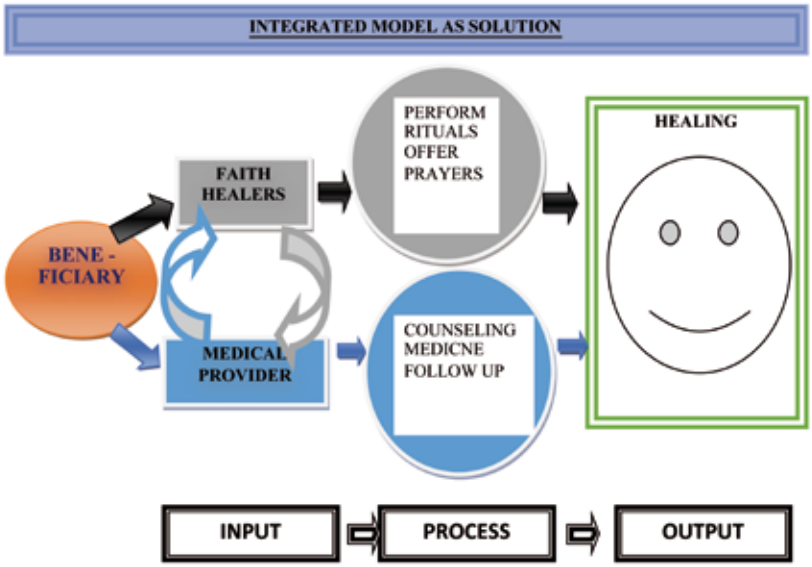

Figure 2. *Integrated model of Healing*

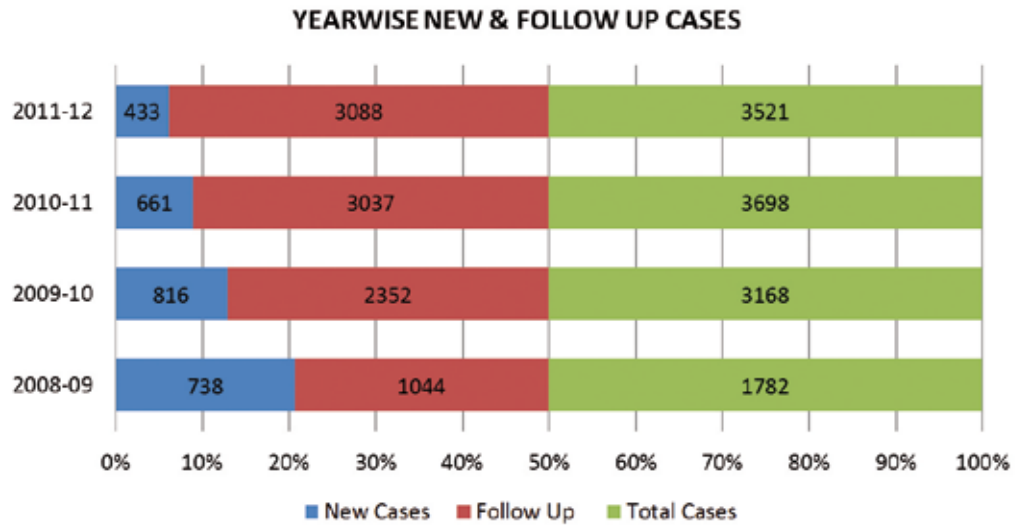

Figure 3. *New and Follow up cases at project site (As per the data provided by NGO)*

rights has also been achieved by this initiative, as the process of Chaining has been reduced to a large extent

Sustainability of the project can be ensured through community participation, monitoring and ownership, and at this stage it is difficult to sustain this project without the support of funds from government. The project still has miles to go to find the solution to sustain itself which is not feasible at this moment.

Culture, belief and Religion are assets to mental health if utilized properly which has been outlined in this model. This initiative has bridged the gap between community and medical service provider by channeling the resources in order to provide maximum benefit to the society. In this model, clients are not only identified and treated, but also followed up. This will remain a real challenge as the numbers of beneficiaries are increasing every year

As there are limited studies on such initiatives further studies can be taken up on the following:

1. Quality of medical service provided and the outcome of the treatment on the lines of increase in productivity and quality adjusted life year's parameters.
2. Replicability and scaling up of such initiatives and linkages to primary health care centers.

However there were certain limitations during the study as mentioned;

- Due to time constraints only limited aspects were taken into consideration.
- Quality of medical service provided and the outcome of the treatment on the lines of increase in productivity and quality adjusted life years parameters.
- This study has been undertaken when the model is established and has not taken into consideration the factors involved in establishing the model.

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SUSTAINABLE REGIONAL HEALTH SYSTEMS

Beveridge health system: a comparison between Italy and Portugal

Ana Cristina Basto Abreu*
Student at Erasmus Mundus master in Sustainable Regional Health Systems
Hong Nguyen, *Student at Erasmus Mundus master in Sustainable Regional Health Systems*

A B S T R A C T

Background
Both Italian and Portuguese healthcare systems are based in the Beveridge model (NHS). Nevertheless, each one has its own characteristic which results in different outcomes. An overview of demographic and health indicators of Portugal and Italy are presented in comparison with OECD countries.

Objectives
The main aim of this paper is to provide an insight of the Beveridge system and to give some recommendation to increase quality of care and foster efficiency.
Method
For a compressive analysis of each health system it was analysed health expenditures, the health systems organization and functions of regional and national levels.
Results
Health expenditure in both countries is increasing, in line with the global-wide trend, in which the rise in the Portuguese health expenditures is more obvious. The proportion of public spending and OOP in health expenditure in Italy is much closer to the OECD average than in Portugal. Although the health expenditure as percentage of GDP in Portugal is higher than in Italy, it does not bring a better health outcome.
Conclusion
In the context of global financial crisis, efforts are being introduced to reduce health expenditure without affecting the quality of the health services, such as introduce a payment system reform, reducing unproductive administrative costs, eliminating ineffective services, improving rational drug use and so on.

Background

Italian and Portuguese healthcare systems are based in the Beveridge model (NHS). Beveridge system is characterized by providing universal coverage for the population, almost free of charge at the point of service. It is financed by the general budget revenue in Portugal and by earmarked central and regional taxes in Italy. Both systems are decentralized as regions are responsible for ensuring the delivery of care through public and private hospitals, while the federal state is responsible for ensuring the objectives and health plan.

In Portugal the health system is characterized by 3 coexisting subsystems:

1) NHS;
2) Health subsystems for certain professionals;
3) Private VIH (Barros P., Machado S., & Simões J., 2011).

One hundred per cent of the population is covered by the NHS, about 16% of the population is covered by both NHS and health subsystem (ADSE, ADMG ADME, etc), 10% is covered by NHS and VHI and less than 2% have the 3 subsystems (INSA, 2007). The health care providers can be either public or private depending on the agreement, however they are mainly public in NHS (Barros P., et al., 2011; Giraldes, 2002).

In Portugal the healthcare policies and health promotion are responsibilities of the Minister of health. It is the Ministry of Health (MoH) who regulates, coordinates, plans and evaluates the service of NHS.

The responsibilities of the Regional Health Administrations (RHA) are:

- Management of the health status of the local population
- Coordination of health services provision
- Allocation of resources for primary care
- Negotiation of PPP (public-private partnerships) contracts.

In 1990 NHS was decentralized aiming to improve healthcare delivery, decrease inequalities, allocating medical resources

* Corresponding author: nnna.abreu@gmail.com

and involve the community in the decision-making. In practice however, the allocation and planning of resources remains centralized (Barros P., et al., 2011). After 2005 hospitals achieved an entrepreneurial status aiming to increase the responsibility and duties at the institutional level (Barros P., et al., 2011). In Portugal the autonomy of the region over the obtained financing is reduced to the primary care.

Italy's health care system is organized on 3 levels: national, regional and local:

- The national level is responsible for ensuring the general objectives and fundamental principles of the National Health Care system. It sets out the general objectives and guiding principles, as well as ensures the Essential Levels of Health Care provision (known as LEA). The national level also regulates function for pharmaceutical drugs and medical equipment.
- Each RHA is responsible for the funding, organization and delivery of health services in their own area. There are 20 regions and 2 autonomous provinces which performs the planning of health care expenditure. The regional level is responsible for the management and organization of the health system, and is financially accountable.
- Ensuring the delivery of a benefit package is performed through local health units (ALSS) which are population-based health management organizations and public and private accredited hospitals (Lo Scalzo A et al., 2009).

Financing background

In Portugal the MoH allocates funds to each region based on historical expenditures and capitation which pay for primary care and special programs. In Italy the MoH allocates funds to each region based on the amount of taxes collected favoring the region with stronger industrial level. Then each Italian region has the responsibility to organize and allocate the budget to the various health institutions (Cristina Masseria, Rachel Irwin, Sarah Thomson, Gemmill, & Mossialos, 2009; Lo Scalzo A, et al., 2009).

Public hospitals in Portugal are financed through case-mix adjusted global budgets drawn up by MoH. Regarding inpatient care, 80% of hospital cares are now covered by DRGs. Italian hospitals are financed by both global budgets and case-based payment. Private insurances and subsystems pay hospitals retrospectively also based in DRGs (Thomson S, Osborn R, D., & Reed, 2012).

To improve efficiency in hospitals, Portugal grants a bonus for the hospital in case the percentage of readmissions in the first five days after discharge is below a defined threshold. In Italy incentives vary from region to region and according to Charlesworth, Davies, & Dixon, 2012, "financial incentives are used to encourage GPs to take on a gatekeeper role self-employed" (Charlesworth, Davies, & Dixon, 2012).

Demographic trends and health indicators

Portugal and Italy are both located in southern Europe. Italy's total population is around 61 million (2011) while Portugal has around 10.6 million inhabitants (2011), representing 5.7 times less population than Italy. The Italian geographical land is almost 3.3 times bigger than the Portugal one, meaning a higher population density in Italy. A similarity between both countries, also verified in all European countries is the population ageing. Both countries have more than 65% of the population between 15 to 64 years old (Bureau, 2011) and more than 18% and 20% of population are over 65 years in Portugal and Italy, respectively (see table 1). This population ageing tendency is maintained by the continuous rising of population life expectancy and declining of birth rates: population growth rate reaches 0.38% in Italy and 0.11% in Portugal (CIA, 2012).

Table 1. Age structure comparison. (2012 est.) CIA, 2013

	Italy	Portugal
0-14 years	13.80%	16.10%
15-64 years	65.70%	65.70%
65 years and over	20.50%	18.10%

To provide an overview of both countries' health status, some indicators are pointed out comparing to the OECD (Organisation for Economic Co-operation and Development) countries (see table 2) (OECD, 2012).

In general both countries list equal or even better health status than the average of OECD countries. In the report "health systems in transition (hiT)", Barros P. et al. stated that there are still remaining inequalities in health among regions and social groups (Barros P., et al., 2011). This fact is also reported in the hiT Italy: "there are marked regional differences for both men and women, reflecting the economic imbalance between the north and south of the country"(Lo Scalzo A, et al., 2009).

Table 2: Representation of the health status indicators for Portugal, Italy and OECD countries in 2010 (OECD, 2012)

Health Status		Portugal	Italy	OECD average
Premature mortality, Reduction in PYLL	Years lost, /100 000 females, aged 0-69 years	2239.6	1901.2 (2009)	2457.0
	Years lost, /100 000 males, aged 0-69 years	4738.9	3439.4 (2009)	4798.4
Mortality rate, ARS per million population	Ischemic heart disease (2009)	54	81	117.0
	Stroke(2009)	81	50	54.0
	All cancers mortality (2009)	204	212	208.0
	Transport accident (2009)	8.9	9.3	8.2
Risk factors	Tobacco consumption, % of population 15+ who are daily smokers	18.6%	23.1%	16.8%
	Alcohol consumption, Liters per capita (age 15+)	11.4	6.9	9.4
	Obese population, self-reported, % of total population	15.4%	10.3%	15.0%

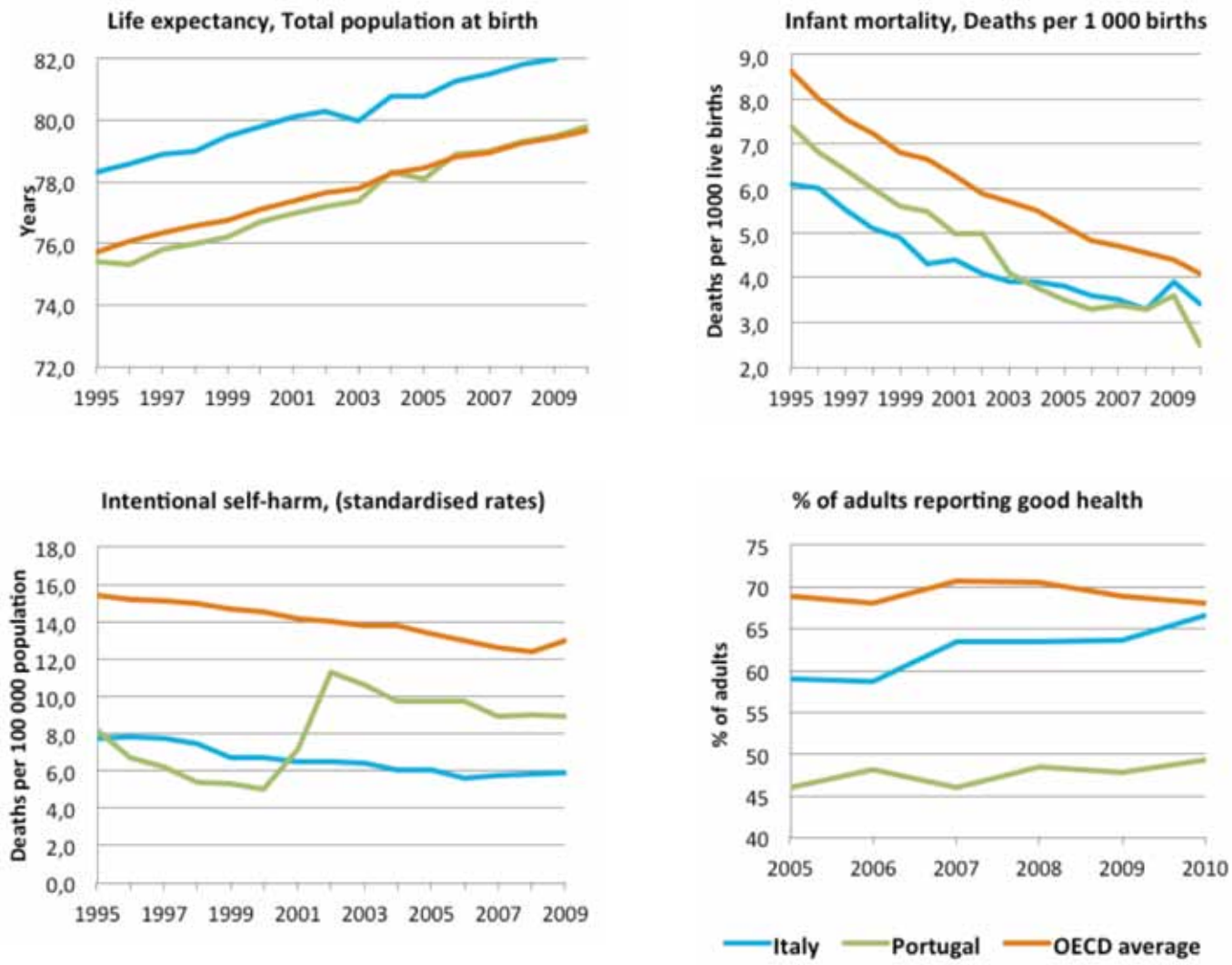

Figure 1: *Representation of different health status for both countries and OECD average (OECD, 2012).*

Life expectancy has been increasing in the last decades thanks to the improvements in living conditions, public health interventions and progress in medical care. In 2010, life expectancy at birth in Portugal was 79.8 years, which is equal to the OECD average while Italy has one of the highest life expectancy in the world: 82 years (see figure 1A). Infant mortality is decreasing over the past 2 decades and both countries achieved lower deaths per 1000 births comparing to OECD average (see Figure 1B).

Figure 1C represents the number of suicides per million inhabitants. There was a decrease from 1995 in average in OECD countries as well as in Italy. In Portugal the decreasing of suicides occurs from 2002. We would like to point out that Italy and Portugal have a lower percentage of people reporting good health than the OECD average. However in Italy this percentage is increasing over time and in 2010 is similar to the OECD average. In Portugal the trend is quite constant and in 2010 less than half of the population reported good health.

Aim

With experience as an user of the Portuguese health system and as a student learning about Italian health system, we would like to provide a comprehensive insight of the two southern European health systems. The goal is to learn from their experiences and make recommendations about strategies that should be implemented to achieve efficiency, reduce inequalities and increase accessibility.

Methods

First, we assessed the historical trends and updated information about health status and demographic information.

The analysis and study of health care expenditures, health care delivery and the allocation of medical resources both human and physical are crucial aspects to compare both countries. The most recent data from OECD regarding those topics was analyzed and treated by excel 2007. Recommendations were given comparing the results and based on suggestion given by mainly two international reports: the World Health Report 2000 and Portugal Health System: Performance Assessment.

Results

Health financing

Since 1991 health expenditures have been increasing over time for both countries as being shown in figure 2. This increase was more obvious in Portugal, which augmented from 6.2% to 10.7% nowadays.

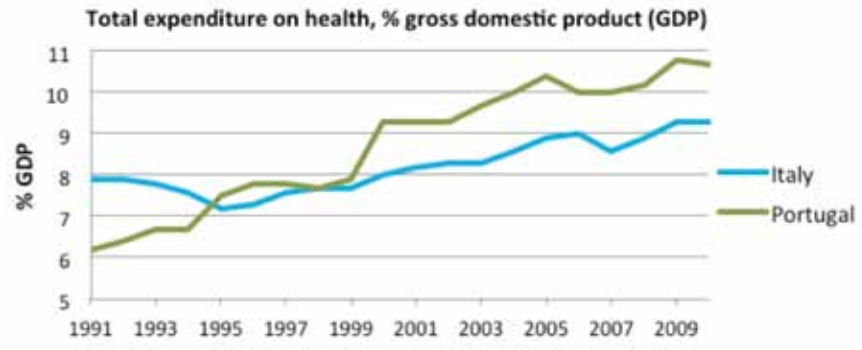

Figure 2: *Total expenditure on health as share of GDP since 1991 until 2010 (OECD, 2012)*

In Italy health expenditure reaches 9.3% of its GDP, below the OECD average. Health expenditures in Portugal, though decreased from 2009, are still above OECD average, reaching 10.7% of its GDP to finance health (figures reported in table 3). Public sources in Italy funded health costs by 79.6% in 2010. In Portugal public expenditure represents 65.8% of the total health expenditure, below the OECD average and the public financing percentage is slightly decreasing over time in opposition with Italy.

In Italy inpatient and primary care services are free for the patient. The 17.8% of OOP payment as share of total health expenditure in Italy comes from two sources:

- Cost sharing - patients pay a co-payment to specialist consultation, to diagnostic tests and pharmaceuticals and unwarranted access to hospital emergency department. Several groups are exempted of payment as children under 14, elderly over 65 with a less than €36152 gross household income, people with chronic and rare diseases, disabled people or with HIV, prisoners and pregnant women.
- Direct payment to the private healthcare services

The out of pocket (OOP) money expenditure is higher in Portugal than the high income OECD, reaching 26% of total health expenditure. In fact in Portugal cost-sharing is also verified in primary care and not verified in Italy. Portugal is between one of the 6 OECD countries with the highest percentage of OOP health financing. For the last 10 years this kind of payment is been increasing 1.7%, in contrast with the trend in OECD countries. For example, in Italy the proportion of OOP in health expenditure decreased by 6.7% between 2000 and 2010.

Due to near universal coverage, voluntary health insurance (VHI) does not play a significant role in funding health care both in Italy and Portugal. In 2010 VHI represented 1.1% of the total funding in Italy and 4.4% in Portugal. VHI is purchased in both countries to complement insurance policies, cover co-payments, non-reimbursed services and dental care. It serves to both decrease the waiting lists and to increase access to private providers (Barros P., et al., 2011; Lo Scalzo A, et al., 2009).

Pharmaceutical burden is higher for both countries than OECD countries average. The high influence of pharmaceuticals on doctors can be one of the reasons behind the high expenditures in pharmaceutics (Barros P., et al., 2011; Lo Scalzo A, et al., 2009).

Pharmaceutical expenditures

Italy in 1994 suffered a radical change regarding pharmaceutical expenditures caused by a series of scandals, as pharmaceuticals offering presents like computers or travel packages to GPs (Lo Scalzo A, et al., 2009).

Government then created incentives to make GPs more accountable for their prescriptions, such as establishing incentives to achieve a certain target. From 2001 Italy decreased 4.8% on pharmaceutical expenditure as a share of total health expenditure (THE). Portugal began to contain costs only from 2006 and a reduction of 2.6% as a share of THE, was achieved, during 4 years.

Figure 4 represents the antibiotic consumption for both countries from 2001 until 2011. It is depicted in this paper because it contains interesting data for policy makers. As it is aimed and established in health plans for both countries to improve a rational drug use, given their known side-effects.

There is a significant difference of antibiotic consumption for both countries. From 2001 to 2011 while in Portugal antibiotic consumption is decreasing, in Italy it is verified an important increase. However, in both cases antibiotic consumption in 2011 is greater than the OECD average: 21.1 daily doses.

Table 3: Representation of the health expenditure for Portugal, Italy and OECD countries in 2010 (OECD, 2012)

Health Expenditures	Portugal 2010	Italy 2010	Average OECD 2010
Health expenditure, total (% of GDP)	10.70%	9.30%	9.50%
Public expenditure on health, % total expenditure on health	65.80%	79.60%	72.20%
Out-of-pocket (OOP) payments, % total expenditure on health	26.00%	17.80%	19.50%
Pharmaceutics expenses (% of health expenditure)	18.60%	17.20%	16.60%

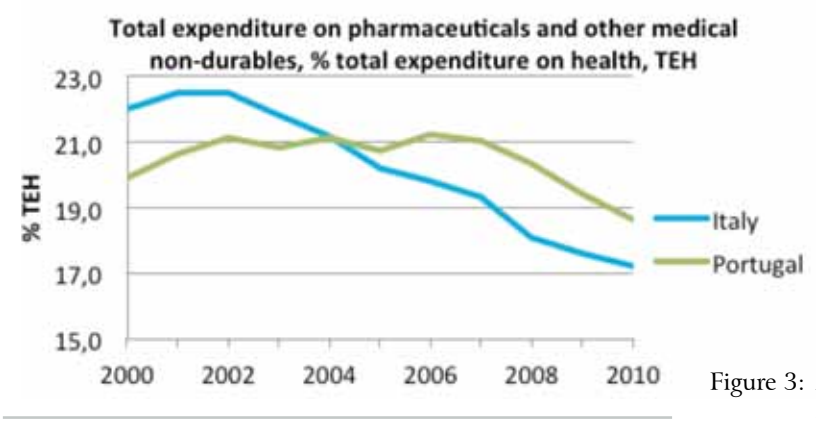

Figure 3: *Representation of total expenditures on pharmaceuticals as share of TEH from 2000 until 2010 (OECD, 2012)*

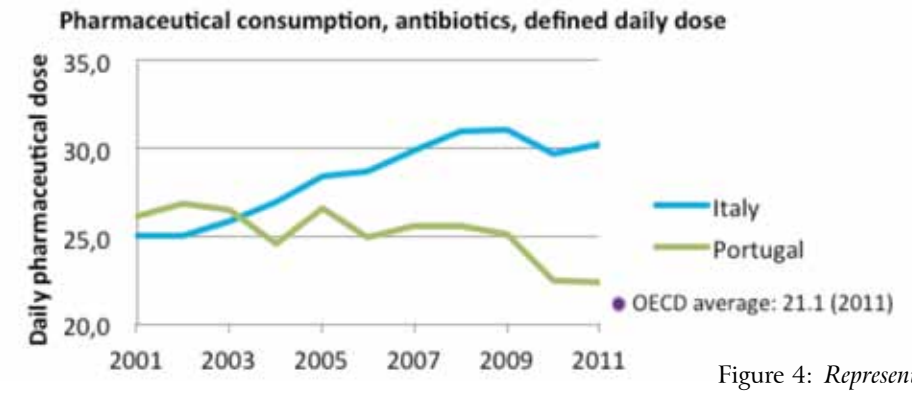

Figure 4: *Representation of antibiotic consumption from 2000 until 2010 (OECD, 2012).*

Delivery of services

Human and physical resources

In Italy the number of healthcare professionals is increasing over the past two decades with exception of nurses (Lo Scalzo A, et al., 2009). Comparing the countries, both Portugal and Italy have lower number of nurses and higher number of physicians comparing to the average of OECD. Therefore the ratio nurse per physicians is much lower. Both countries have to define human resources strategies, planning the ratio nurses/physicians and redefining roles of health care professionals, including redefining the scope of practice (WHO, 2010).

In Italy there is a significant difference between regions regarding technology because the government did not control the acquisition of expensive technologies. Portugal has deficiency of Magnetic resonance imaging (MRI) units comparing to the majority of OECD countries.

Provision of services

The delivery of health care services in Portugal and Italy is based on primary, secondary and tertiary care.

Primary/ambulatory care

In both countries, the first contact to the public system is a General Practitioner (GP). The GP can refer the patients to specific hospital if necessary. Usually this access to the secondary care implies a waiting list, so patients who do not want to wait may go to a private hospital, where usually waiting lists are much shorter.

As in Portugal people need to have the GP's referral to access secondary healthcare, many people go directly to the emergency department in hospitals when they have acute symptoms. A local study published in HiT Portugal 2011 estimates that approximately 25% of the patients at hospital emergency units do not need immediate care (Barros, Machado, & Simões, 2011). In Italy, patients can assess hospital care either by having GP's referral or booking an appointment through the central booking point called CUP (Lo Scalzo A, et al., 2009).

Secondary/ Inpatient care

Secondary and tertiary care is held in hospital and it is, or should be employed for treatment of severe and complicated

Table 4: Representation of the health resources for Portugal, Italy and OECD countries in 2009 (2011, 2012)

Health care resources (2009)	Portugal	Italy	Average OECD
Nurses (Density per 1000 Inhabitants)	5.7	6.3	8.6
Physicians (Density per 1000 Inhabitants)	3.8	3.7	3.1
MRI units, total, per million population	9.2 (2008)	22.4	12.5
CT scanners, total, per million population	27.4 (2008)	31.6	22.6

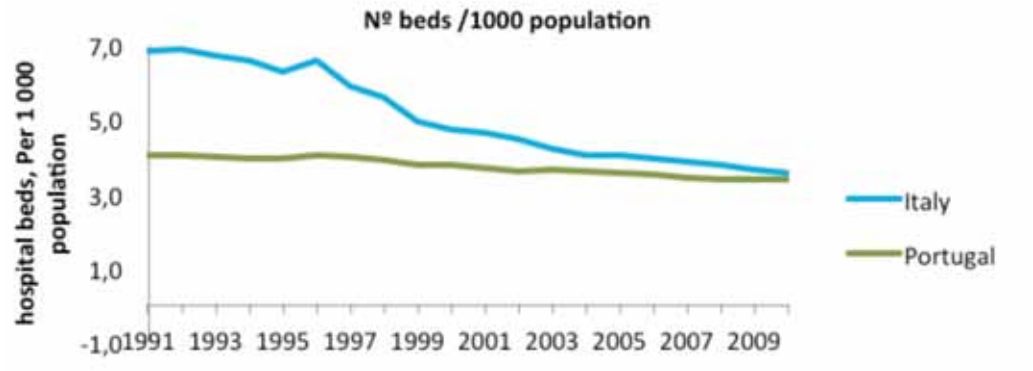

Figure 5: *Representation of the number of beds/1000 population from 2003 until 2009 (OECD, 2012)*

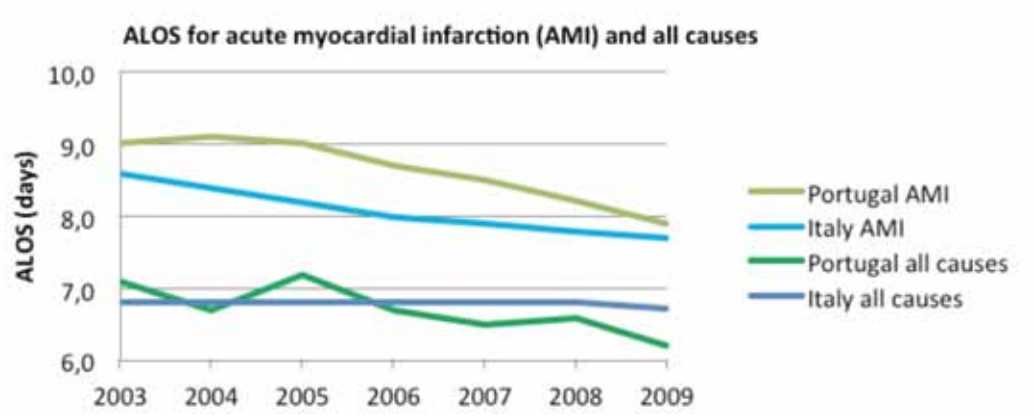

Figure 6: *Representation of the length of stay for Portugal and Italy regarding all diseases and specifically for AMI (OECD, 2012)*

conditions. With the increase of elderly and pressure to decrease costs there is a general tendency in OECD countries to reduce the number of beds. In the graph above it is possible to recognize a reduction in the number of hospital beds between 2003 and 2009 resulted by the introduction of some policies to reduce admission and length of stay. The average in OECD countries in 2010 was 4,9 beds per 1000 inhabitants. Psychiatric beds and acute care beds have been also reducing in the last two decades for both countries.

Along with the reduction of number of beds with the introduction of DRGs there was a pressure to decrease average length of stay (ALOS) as well. This decrease of ALOS was clear in Italy in the 90s. In Portugal it was observed a decrease of ALOS of 15% from 2003 to 2009 (see figure 6).

It is noteworthy to present ALOS for patients with acute myocardial infarction (AMI) because it is a common disease with high morbidity and mortality rates (Thomas Gaziano, K. Srinath Reddy, Fred Paccaud, Sue Horton, & Chaturvedi., 2006). Both countries in 2009 had higher ALOS comparing to the average of OECD countries: 7.1 days. Nevertheless, for both countries it was verified a clear reduction in the studied years.

To analyze the efficiency of the inpatient services it was reviewed the occupancy rate for both countries from 1990 until 2007.

Occupancy rate for acute care increased for both countries: in Portugal it increased 5.9% and in Italy 9.5% from 1990 until 2007. Efforts should be taken to continue increasing beds occupancy and increase hospital efficiency in this matter (average OECD for occupancy rate is 77%). The following characteristics are linked and are essential to foster hospital efficiency and control health expenditures: increasing occupancy rate, decreasing number of beds and reduction of length of stay.

Table 5: Representation of the occupancy rate for acute care for selected years (OECD, 2012)

Acute care occupancy rate, % of available beds	1990	1995	2000	2005	2006	2007
Portugal	66.7%	72.6%	71.3%	73.2%	71.3%	72.6%
Italy	69.3%	70.7%	76.0%	77.3%	78.0%	78.8%

Discussion

Italy and Portugal health systems are facing challenges due to the European economic crises, population ageing and increase of health expenditures. Both countries have a Beveridge health system and have several similarities regarding how health services are delivered and financed. They are both decentralized, however the regional financial autonomies are different. In Italy the region has the power to allocate financial resources while in Portugal these decisions are kept centralized. The autonomy of the region over the obtained budget is reduced to the primary care. WHO recommends that Portugal should "further decentralize decision making authority", giving to RHA budgetary and financial autonomy as verified in Italy (WHO, 2010).

Comparing health status, Italy has higher life expectancy than Portugal and is one of the highest in the world. Suicide rate in Italy is stable and lower than both Portugal and OECD average. Portugal has lower infant mortality than Italy and it is considered one of the lowest in OECD: 2.5 deaths per 1000 live births. I would like to draw your attention to the fact that the perception of good health is especially different between countries: Portugal reported less than 50% of the population considering themselves as healthy while Italy is close to the average of OECD 66.5% and 68%, respectively.

In both countries, health expenditure as share of GDP has increased significantly in the past decade. In Portugal is being verified an increase of OOP, in opposition to the Italian and OECD trend.

Italian health expenditure as share of GPD is lower than in Portugal and the government finances almost 80% while in Portugal just 65.8%. In addition the OOP payment and cost sharing in Portugal is higher than Italy and OECD average and it is being increasing, in opposition to the general OECD trend. Barriers to the affordability of health services should be reduced (WHO, 2010).

Pharmaceutical expenditure and consumptions should be reduced to increase efficiency and reduce waste. In Italy the consumption of antibiotics should be revised as it is much higher than the OECD average and it is verified an important growing during the last decade. WHO recommends to rationally prescribing and to assess quality control and cost effectiveness of medicaments. The affordability to the needed drugs should be guaranteed to poor households (WHO, 2000). In the context of global financial crisis, efforts are being introduced to reduce health expenditure without affecting the quality of the health services. Several ways can be done to achieve efficiency and effectiveness: introduce a reforming payment giving incentives for hospitals and doctors to deliver a better health care, reducing unproductive administrative costs, eliminating ineffective services, improving rational drug use, allocating more to primary care and outpatient specialist, cutting the volume for services that are not cost-effective and reducing number of beds and length of stay. Both countries are investing resources to reduce dissipation but efforts should continue to be done, to reduce re-hospitalizations and length of stay for AMI. It is well established in the literature that a timely and effective treatment in case of AMI is essential for the patient survival, being reduced wastes in healthcare as well as having better quality of care (Idänpään-Heikkilä et al., 2006).

In Portugal, according to Commission for sustaining and financing health systems, it should be considered to remove from public expenditures the health subsystems either by its elimination or self-sustaining. These subsystems are a double cover for specific groups of population causing social injustices (Simões, Barros, & Pereira, 2007). This policy is also corroborated by WHO, which recommended to progressively shift the role of subsystems to supplementary coverage so coherence of public coverage is enhanced (WHO, 2010).

The study has several limitations regarding the availability of database for analysis and the limitations of in-depth reference studies related to this topic. However it has provided a systematic systematic overview and comparison of the two health systems to the average of OECD countries, as well as presented some recommendations that may create the basis for further research in this topic.

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