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PJPH is the official journal published by the Health Services Academy, Government of Pakistan. The Academy aspires to become a regional academic centre of excellence in public health training, policy advice and health systems research that is nationally and internationally accredited. The mission of the Academy is to improve the health of the population of Pakistan and its surrounding region by enhancing human resource development and contribution to evidence-based policies and practices.

PJPH is a forum for the presentation and promotion of new initiatives and evidence based research in public health which will potentially inform polices and help in improving the health services. It invites all members of the public health domain for the exchange of ideas, views, concepts, epidemiological data and research findings.

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Welcome to the first exclusive edition of Pakistan Journal of Public Health. PJPH is expected to be an active vehicle for the delivery of timely and thoughtful information and opinion on diverse issues of public health. This journal is first of its kind in the country and region and is therefore committed to promote high quality research in the field of Public Health. Over the years, it has been felt that worthwhile public health research could not find its way into legitimate print in Pakistan. The launch of this journal by December, 2011 is an attempt to address such constraints through providing a platform for public health researchers and academicians.

The first issue of the journal presents mix of original research papers, review articles, short communications and commentaries. Every effort was made to meet academic standards and significant contributions to the knowledge bank through editorial and a blind peer review of all the manuscripts. I hope that PJPH will provide the reader a concise reference for recent developments in wide domains of Public Health. The specific goal for the journal is to create a larger presence for the publication, more actively addressing the health care reform debate. I would like to acknowledge authors for contributing knowledge and sharing deliberations with respect to some of the major Public Health issues and challenges in Pakistan.

I am grateful to editorial board members, members of the international advisory board and Journal team on timely compilation and dissemination of this very first issue. Our editorial and advisory boards represent the major standards development organizations, and have given us their strong support for PJPH goal of enhancing professional pride.

We are very grateful to all who put valuable contributions in order to attain a collective joy of this very first journal.

Dr. Assad Hafeez
1st December 2011, Islamabad.

Executive Editor Notes

We are extremely pleased to launch the first ever public health journal in the country. Pakistan Journal of Public Health will be an open access journal publishing original peer-reviewed research articles in the wide domain of public health, epidemiology, health economics and financing, reproductive health, disease vector control, human resources for health, health sector reforms, health education and promotion, and most importantly social determinants of health in the context of a developing country.

The journal will have a special role in disseminating evidence based research, critical views, expert opinions, advocacy papers, and policy analyses. We envisage to inform the policy making process and would use PJPH to share the knowledge base with the programme managers, researchers, public health advocates, donors, development partners, academia, civil society and the student community to better understand the health system and public health dynamics in the country.

We have been greatly honored to have so very eminent public health experts on our advisory and editorial panels. Pakistan Journal of Public Health has successfully obtained an ISSN and now would be working with greater zeal to get it recognized with local accreditation bodies (Pakistan Medical & Dental Council and Higher Education Commission) as well as international libraries and data bases (Medline, EMBASE, Scopus, CABI, Thomson Reuters (ISI) and Google Scholar).

We had an overwhelming response in receiving the contributions. The first issue presents a bouquet of interesting articles including research studies, reviews, commentaries, short communication etc. and we are very hopeful that public health friends will keep on sending us their worthy contributions to enrich the journal's issues and volumes.

We pray to Almighty to help us while providing this service to eventually help the suffering communities in Pakistan!

Dr Babar Tasneem Shaikh
1st December 2011, Islamabad.
Making informed policy and decisions in Pakistan: role of health policy and systems research

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These days, if you ask a cynic or a skeptic Pakistani or even an international expert on Pakistan that what is the most critical challenge which Pakistan is facing at this point in time, the most likely response will be governance and governance within the health sector is definitely not an exception. Political life in Pakistan since its creation has been dominated by three factions: the military, the civil service and politicians (mostly feudal). Especially in a country like Pakistan, where authoritarian rule and brief periods of democracy have characterized the general political system, little is actually known about how decisions are made and what their impacts are on objectives such as improving health status, making the system more responsive to beneficiary and public demands, reducing financial risks of illnesses, as well as improving efficiency, quality and access of health services. Poor governance, which includes uninformed decision-making, in the health sector has led to misdirected spending of funds intended to improve the health status of the population. Bribes, corrupt officials, and procurement errors undermine health care delivery in much the same way they do for police services, law courts and customs whose functions have become compromised by the culture of poor governance and corruption.

Over the past decade, tremendous amount of donor funding have flowed to the health sector in Pakistan, typically focused on particular diseases or services. However, research done in similar settings in the world has routinely demonstrated that weak health systems and poor policy planning structures often prevent those funds from attaining their desired impact. While cost-effective and life-saving technologies exist, the mechanisms to deliver these interventions to the people most in need are inadequate or even absent. For example, it has been estimated that full use of existing health interventions could reduce child deaths by at least 63% and maternal mortality by as much as 74% (1). Failure to effectively maximize the impact of existing interventions through functional health systems and appropriate delivery mechanisms exerts a catastrophic toll in terms of lives needlessly lost. Most of the information and evidence is gathered either through surveys or routine "health management information system" (HMIS). The limitation of HMIS is that it collects information only for fist level care facilities (FLCF) and does not cover hospitals, which are more often used and the primary point of contact for patients. Furthermore, utilization of government health facilities stands at less than 25%; despite this, there is no system to gather information from the private sector - formal or informal (2).

Basically, there are two limitations in generation, assessment and use of (research) evidence for improved policy and management decisions. The first is the scarcity of evidence, and the second is the culture of decision-making. A majority of decisions made are based on "convention, personal interests, anecdotal evidence, and/or political expediency" (3).

Research in the health sector is not and has never been a priority. Government has not invested in generation of health policy and systems relevant knowledge nor is there robust and sustainable health information system. The government of Pakistan has, to this date, formulated three health policies (4). These policies were conceptualized, considered and developed by the bureaucrats in the MOH with the assistance of selected technocrats in the MOH with the assistance of selected technocrats in the MOH. These health policies were not evidence based, lacked strategic direction, were reflective of personal whim and wills and focused more on outputs than on outcome and impact. Sadly, there are neither links nor any mechanisms and/or structures to translate these national polices into annual (implementation) plans.

National health authorities and country leadership need to appreciate and recognize the role and promise of health policy and systems research in improved policy and management decision-making, which ultimately shall contribute to the performance of national health systems. Of no less importance, investment is needed to be made in training of capable and competent health policy and systems researchers; allocation of the necessary resources to public health teaching and training institutes; and most important to put in place the essential infrastructure to link generation and use of research evidence. Without these fundamental elements, the existing policy planning mechanisms will continue to act as
References:

Megacities and Health
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The Pakistan Journal of Public Health will inevitably make a major contribution to our understanding of megacities—still rather area of inquiry for the field. Pakistan currently already has one megacity urban settlements with over ten million. Karachi with over 18 million is one of the largest of the twenty-five megacities in the world today (1) most of which are in the less developed world. Lahore, Faisalabad, and Islamabad/Rawalpindi are projected to soon reach over 10 million. Karachi has provided perspective and case study material for the first edited volume on the subject and the future of Pakistan will contribute to this evolving subject (2).

The health of urban populations has long provided a useful lens through which to view all aspects of public health. Health issues in Victorian London were the focus of the earliest public health research and studies of the urban continue to inform the field today. What is new is the emergence of megacities as a pattern of urban settlement and subject of research. Size alone does not define megacities, however; megacities are the leading edge of globalization that has spatially and socially transformed urban populations. The advent of megacities presents unique challenges to the field of public health challenges associated with size and process. When cities reach a certain size, a set of problems are created, many of which have health risks.

An extensive body of social science literature on megacities has developed over the past two decades and provides direction for thought and action in public health. Sociology, anthropology, geography, political science, and urban planning have made important contributions to our understanding of these emerging urban landscapes. Public health scholarship has called for greater use of social science but only recently begun to delve into the rich literature on these complex, fascinating, and troubling population centers (3). Neoliberalism of the past thirty years, the dominant direction of global policy, has transformed the early megacities and added new megacities to the list (4). The majority of megacities now are located in less developed countries, becoming megacity only in the past ten years.

Manuel Castells, one of the leading sociologists writing on megacities, has made the point that the study of these unique places is not merely a special topic in social science but the starting point for the transformation of our understanding of the contemporary world, more generally. Castells suggests that the Pearl River Delta, an area of 40 to 50 million people including Hong Kong, Macao, and the Chinese industrial centers of Guangzhou, Huizhou, and Zhaoqing, is “likely to become the most representative urban face of the 21st century” (5). These population aggregates are centers of economic, social, political, and cultural activity in their own countries, of regions, and in the world as a whole. Megacities are major drivers of social transformation in the world today, creating new challenges and opportunities for human existence.

The same might be said for the public health of megacities. The rapid development of information technology, like other technological revolutions before it, has not changed only the economy, but effects all dimension of human endeavors. Telecommunications, information systems, advanced transportation technology, and new media systems have enabled integration of complex economic and social processes over vast landscapes, which make possible what have come to be called megacities.

Megacities are a new spatial form with important implications for public health. They are not simply the growth and merging of contiguous places; they are places that have become strongly internally networked through information technology, transportation systems, and huge economic networks. Despite cultural and social diversity within megacities, they have developed into unified areas of production, labor markets, and public health risk, including the spread of certain infectious diseases and air pollution (6). The megacities are also tightly networked with the same information technologies that allow them to become unique integrated units (7).

Although the 25 megacities are tightly networked places (within and between them), there is no standard epidemiological profile for megacities. Patterns of health statistics of Tokyo are different from those of Lagos as would be expected from the dramatic difference in levels of development between the cities. Furthermore comparing health outcomes and patterns of diseases of large and small cities is problematic on a global basis. Urban health problems air pollution, illicit drugs, and solid waste management -- are found in most types of urban settings
regardless of size. The lens to understand megacities as a group must be sought in health risk, not disease patterns. Megacities share dynamics and processes -- population size, density, geographic size, and many social patterns that create health risk. The tendency of systems towards collapse is another characteristic in megacities with obvious health implications. The health risks created by megacity dynamics are shared potentials; it is the failure or inability of many of the megacities to respond to the realities created by huge populations that make the 25 megacities very different from one another. Some have developed successful models to address the megacity challenges, while others have failed to adapt those models. Although most of the population growth in less developed countries has been in urban areas, development assistance has continued to focus on rural areas. Between 197 and 2000, urban areas received only 4% of development assistance (about US$1.5 trillion) (8). The poor in cities are also largely missed by foreign aid. Services for the poor, including housing, water, and sanitation, received even less: 11% of lending at the World Bank, 8% of lending at the Asian Development Bank, and 5% of lending at Japan's Overseas Economic Cooperation Fund. Global development programs of the rich countries have a strong influence on research agendas and spending priorities of governments, universities, and nongovernmental organizations which also have tended to focus on health problems in rural areas.

In a world of increased global health risks, economic disparities between countries and profound challenges to national security, global health programs have become an important part of international diplomacy (9). New global health initiatives may provide the opportunity for implementing health projects in megacities and to move development assistance policy beyond its anti-urban bias. Megacities in Pakistan create challenges with global significance. This new journal dedicated to public health in Pakistan is destined to make a major contribution of the risks and disparities the contribute those challenges.

References:


Limitation of resources in the health sector in developing countries makes planning and management of health services a challenge in order to improve efficiency and accessibility of health care. The slow progress in achieving the Millennium Development Goals (MDGs) in many developing countries is mainly due to poor management capacity to deal with the health services. Newly developed evidence can be applied to fill the gaps in the performance of health system (1). Generally, the use of information enables the decision makers and managers to utilize it for better policy making, planning, implementation and monitoring & evaluation of health programs (2). Information from national and sub national levels should be coordinated to avoid duplication. Yet, availability of good quality information may not necessarily lead to appropriate decision-making. The culture and practice of evidence based decision-making has to be promoted (3). Regional differences in health systems and general infrastructure, and differential rates of health outcomes suggest that packages of evidence-based interventions must be adapted to specific contexts to maximize the impact. It will help to address scalability, sustainability and equity issues (4).

**ABSTRACT**

**Background:**
Research and evidence are getting more important for organizing and delivering the health services. Quality research has an important part to play in strengthening the health systems. There is a concern that evidence is not utilized to the extent it should be. The purpose of this study was to find out whether the Maternal, Neonatal and Child Health (MNCH) Program is an evidence based initiative in Pakistan.

**Methods:**
A qualitative exploratory study was conducted in June to August 2011 in Islamabad, with key stakeholders of health system, using a semi-structured in-depth interview.

**Results:**
The study participants feel that the basis of decision-making in Pakistan's health sector including national MNCH program is indeed evidence based; however other factors such as personal interest, donor interest and political factors have influenced as well. They quote national surveys, research studies and HMIS as credible sources of evidence. There is consensus on the importance and use of local, regional and global evidence. National as well as international best practices have been considered at the conceptualization, designing and planning phases of MNCH program; while execution and M&E stages have not benefitted at all from the available evidence. Lack of funding for research, time limitations and absence of culture of evidence utilization are some of the challenges. A strong linkage between researches, policy makers and managers is most emphasized strategy for ensuring evidence based decision-making.

**Conclusion:**
This study has informed the stakeholders about the extent, type and scope of evidence utilization for decision-making of national MNCH program. Moreover, an improved use of evidence in future country wide programs will help in resource saving, ensuring better performance, ownership and sustainability of the program.

**Key words:** Evidence-based policy, Research, Information, Decision making, MNCH.
HEALTH SECTOR IN PAKISTAN

There has been a clear disconnect between evidence and policy in Pakistan (5). This divide owes to dearth of appropriate evidence related to decision-making, lack of capacity and infra-structure to generate evidence and more so minimal utilization of available evidence for the decision-making process. Consequently, the scenario is somewhat like this:

1. Due to lack of attention to evidence which existed as common knowledge, inequalities in health sector remain an issue.
2. Dearth of relevant epidemiological data and its effective utilization in a timely manner.
3. Health system and policy research is not streamlined.
4. Operational and applied research is neither promoted nor institutionalized.

The existing services for general population's health, and particularly for MNCH, are not efficient enough to cope up with the needs of the vulnerable segments. The drive to scale up delivery of key health interventions to meet the targets of MDGs led to the development of a National MNCH program, which was launched in 2006 by Ministry of Health, Government of Pakistan. The aim of the program was to improve accessibility and quality of MNCH health services through development and implementation of an integrated MNCH program at all levels of health care delivery system (6).

STUDY OBJECTIVE

To determine the extent, type and scope of evidence utilized for decision-making in the National MNCH program.

METHODS

The study was conducted in the Islamabad capital territory, where most of our intended respondents are clustered to be included in the study. The study was conducted over a period of 12 weeks from April to June 2011. It was a qualitative exploratory study using grounded theory as its core design where interviews were conducted till the point of saturation. An interview guide was developed with the help of literature. A total of 14 interviews were conducted with representatives of multiple sectors that influence healthcare decision-making in Pakistan with regard to the MNCH program including public and non-state representatives. All respondents were contacted beforehand by telephone or email for consent and for an appointment for an interview.

The study participants from the public sector included the EDO Health, Managers from the MNCH program, Representative of District Health Management Team, Representative of National Health Management Information System, Representative of Lady Health Workers program, Representative of Federal Bureau of Statistics, and a Representative of National Institute of Population Studies. The non-state stakeholders included the Donors of MNCH program (DfID, USAID and UNFPA) and a Representative of Population Council.

Verbatim notes of in-depth interviews were transcribed to provide a record of what was said in the interviews. Tape recording was done where allowed by the study participants. Transcription of data provided us with a descriptive record. Theoretical coding, memo writing and sorting of the data form the basis for writing qualitative results in the form of initial draft. The generated ideas, codes and themes were re-written and brought together to be in an acceptable form. All the data relevant to each node was identified and examined using a process called constant comparison in which each item was checked and compared with the rest of the data to establish analytical categories. Key findings were aggregated and analyzed to develop the thematic areas.

RESULTS

This study has focused on the current status of use of evidence for decision making in national MNCH program. The results are presented as findings drawn from the views of study participants captured from the qualitative study.

1. Basis of decision-making in Health care system

According to most of our respondents, decision-making in Pakistan's health care system has been evidence based; however few other factors have influenced on this process at times such as personal interests of the people involved in decision-making, donors' interest and certain political influences. According to one researcher: "Projects must be made on solid evidence and only then they will have tangible and positive outcomes." Disagreeing with this view point, a program manager expressed: "Our policies have been adopted by some other countries; you can see that the situation over there is much better and we are still far from reaching our objective". Another program manager was of this view: "It is also one of the dilemmas that our
policies are very good, theoretically we are excellent but there are a lot of problems in implementation”. Some of the respondents were of the firm opinion that they are based on personal interest of policy makers and later amended by the program managers. In this regard, one of the program managers replied: “The element of use of evidence varies from person to person. Some people are more motivated and these are the people who use the evidence more”.

2. Sources used as evidence
When inquired about the sources used for evidence based decision-making in Pakistan, the national surveys, research studies and HMIS were mentioned most frequently. A technocrat in this regard acclaimed: “Whenever MDGs 4 and 5 are talked about; there is always reference of Pakistan Demographic & Health Survey”. An MNCH program personnel responded: “Journals such as Lancet series and PubMed have good information and can be used as source of evidence for decision-making, if one likes to benefit from these resources”.

3. Importance of regional and global evidence
All the respondents have a consensus on the importance of the regional and global evidence and its use for decision-making for the national programs. In this regard, one of the program manager shared: “Regional and global evidence is important because then one can see the comparison”. Another health program manager expressed: “We can adapt policies and plans which have resulted into successful stories in the region around us”. Technocrats have a different take on this as one of them commented: “It is extremely important but is subjected to availability and accessibility of data also. There are many things you don’t find here, for that you have to consult and rely on UN websites”. The representative of federal bureau of statistics opined: “You can get trends from global studies and can use it too, but local contextual factors are very important to consider while planning”.

4. Decision-making in MNCH program
Majority of our respondents emphasized that decision-making in MNCH program has been based on evidence, mostly. One of the technocrats cited: “It did not happen overnight; the program was conceived out of a very scientific exercise. Based on policy and strategic framework, MNCH program implementation document was developed”. Another participant from a donor organization said: “Conceptualization, design and implementation is carried out in a fairly bureaucratic, standardized and internal process without much consultation with stakeholders and without referring to adequate literature”. However, those who were very firm about the use of evidence, quoted national data i.e. PDHS as their prime source, as cited by the MNCH personnel: “DHS is of course a gold standard document and is extensively used by the health department”. Another respondent from an NGO said: “Independent surveys are the best source and moreover some third party evaluations too provide a lot of credible evidence because they are unbiased”. A representative of donor community shared: “We advocate the use of situation analysis and baseline surveys, input/output matrix, data analysis for decision-making manuals and some parallel independent data. An important but neglected aspect is the qualitative data. It is missing most of the times, perhaps because its collection needs considerable time.” Only few of the respondents assumed that international data and regional best practices would have been consulted and adapted for designing the MNCH program.

5. Stages for evidence utilization in MNCH program
From conceptualization to monitoring and evaluation what are stages where any evidence has been used practically. Most of them thought that the stage of conceptualization is the point where evidence is mostly used. Representative of an NGO expressed his views: “Conceptualization of MNCH program was evidence based but designing and planning stages ignore it”. Few of them asserted that planning stage has also been evidence based. Some of them maintained that evidence is utilized at the stage of designing interventions in the MNCH program. A health program manager from an NGO told us about evidence utilization at different stages. “At conceptualization, it was definitely used. Evidence can also be seen at different places in designing and planning but I have strong reservations as far as execution is concerned. Monitoring and evaluation is again a much neglected area.”

6. Challenges for using evidence
The most common challenge mentioned in this regard was the lack of funding for conducting research and generating evidence. Some of them mentioned time constraints as the biggest issue. One of the health managers while explaining challenges for using evidence said: “It is a hard to find funding for research these days, then the task is very demanding; it needs a lot of time and therefore we always finding shortcuts”. Some of them said that culture of using evidence is not there. A donor representative shared:
“People are very rigid. They follow bookish things. They lack innovative thinking”. Lack of coordination, capacity of people and political influences are some more challenges mentioned by few other respondents. Expressing his opinion, a technocrat said: “Capacity of people directly involved in decision-making is a big challenge. There is no refresher training or capacity building. There should be right person at the right place”.

8. Strategies for advocating evidence based decision-making in MNCH program

For advocating and promoting more robust evidence based decision-making particularly for MNCH program and interventions, majority of the respondents were of the view that linkages between researcher, policy makers and managers should be made stronger for increasing the uptake of research by policy makers and managers. While few of them said that awareness regarding advantages of evidence based decision-making should be created among policy makers as well as managers. A representative of a research organization suggested: “Orientation of top managers should be done through meetings and trainings. Once sensitized, they will promote it themselves”.

DISCUSSION

The concept of evidence based decision making is based on the hypothesis that the interventions’ outcomes will be more spirited if the decisions are better informed by the existing knowledge, for instance on the contextual factors, costs and benefits, population’s demographics and psychographics etc. as opposed to being driven by political and donor influences. The approach will help in eliminating the unsound or excessively risky practices in favor of those that have better prospects (7). In Pakistan, there is a strong case to use evidence for policies and programs especially in MNCH related interventions to ensure efficient, cost effective, acceptable, affordable and accessible delivery of health services. The public sector health policy and planning in Pakistan was so far carried out at the federal level where the Ministry of Health, Planning Commission and the Donor community has a dominant role in developing policies, programs and even in planning. In the wake of recent reforms, the subject has now been devolved to provinces at sub-national level. Therefore, it is envisaged that the evidence-based decision-making is even more needed than before and the provinces must use this opportunity not only to enhance their capacity to do so but also to promote a culture of using credible evidence for making more pragmatic and contextual policies and programs for their people.

This study looked at the perspectives on the use of evidence from the ‘information producers’ as well as the ‘information consumers’ schools of thought. The group referred to as information producers comprised researchers, survey designers/managers, MIS managers and other personnel related to data gathering, processing and organizing activities. There was a general consensus among this group that demand for data is low and the technical knowledge and capacity for interpreting and using evidence in decision-making is also lacking. From information consumers’ angle, it seems evident that the level and use of evidence is relatively high among the donors and international development agencies, which gather and make use of available evidence for their respective country plans and projects. While the systematic use of information within the government quarters is limited to planning and PC-1 formulation only. At the implementation level, evidence is used in an ad hoc fashion, largely for administrative purpose. If the interventions are to be made effective and appropriate, then the use of evidence ought to be scaled up to maximize the impact. In the context of MNCH, it is encouraging to note that some new initiatives by the donors in Pakistan are strengthening the culture of generating evidence through promoting research and advocacy.

CONCLUSION

A systematic and well-defined use of information as evidence in decision-making is limited to strategic planning processes, however, it is completely lacking at the implementation levels, particularly, while designing and operationalizing the activities. This is largely due to the decision-making style and space; and perhaps an inadequate capacity of the national and provincial health policy makers and managers to interpret and translate the research in their action plans. In the current scenario, it would be desirable that all stakeholders joins hands and agree to decide the future road maps on the basis of available evidence on MNCH interventions en route to achieving the millennium development goals.

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Low birth weight and relationship with maternal dietary habits during third trimester of low risk pregnancies in a hospital based study in Pakistan

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ABSTRACT

Objectives: The study is conducted to observe the relationship of maternal diet in third trimester of pregnancy with the neonatal birth weight, in the women at a low risk of delivering low birth-weight neonates.

Methods: This hospital based follow up study was conducted during the months of April-November 2007 at the Gynaecology and Obstetrics Unit of Pakistan Institute of Medical Sciences, Islamabad. Pregnant women with low risk of delivering low birth weight neonates were registered at 26 weeks of pregnancy, by employing consecutive (non-probability) sampling technique. Dietary history was taken by a semi structured Food Frequency questionnaire and 24 hours dietary recall at the time of registration. Written informed consent was obtained.

Results: Thirteen percent of women with normal pregnancies delivered low birth weight neonates weighing <2500 grams (including preterm and full term neonates). The women delivering low birth weight neonates had significantly lower consumption of calories (P= 0.0002), carbohydrate (P=0.008), and lipid (P=0.00005) during the third trimester. In addition the mean maternal weekly weight gain and maternal hemoglobin concentration was also significantly lower in the women who delivered LBW neonates. The frequency of total protein, meat, carbohydrates and fruits consumption per week, calculated from food frequency questionnaire conducted at the start of third trimester was also lower in the women who delivered LBW neonates. The consumption of soft drinks and tea per week was higher in the women who delivered LBW neonates, although this finding was not statistically significant.

Conclusion: This study suggests the importance of good maternal nutrition during pregnancy for the optimal newborn weight.

Key words: Diet, energy, macronutrients, Iron, Calcium, Low birth weight, maternal weight gain.

INTRODUCTION

Low birth weight (LBW) remains a significant public health problem in many developing countries, and poor nutrition before and during pregnancy is recognized as an important cause (1). In industrialized countries, about one-half of all LBW infants are born preterm. In developing countries most LBW infants are full-term births, affected by intrauterine growth retardation (IUGR), during pregnancy (2). The evidence from Dutch famine in winter of 1944-45 suggested that the neonatal birth weights are affected mostly with third trimester poor maternal nutrition (3).

Neonatal birth weight is a function of duration of gestation and rate of fetal growth. The low birth weight neonates may either be born early (preterm) or may have IUGR or both. Low birth weight is defined as birth weight of less than 2500 grams. Preterm birth is defined as gestational age of less than 37 completed weeks. IUGR is defined as term newborns (>37 completed weeks), weighing less than 2500 grams (4).

Worldwide the prevalence of Low birth weight new-borns is 17% (6% in industrialized countries and 21% in developing countries) (5). In South Asia prevalence of low birth weight new-borns is 27 percent. Pakistan has the highest
percentage of 32 percent low birth weight newborns in the world (6). However, this data is mostly hospital based, whereas most of the deliveries take place in the community.

The prevalence of low birth weight has increased over time in Pakistan. In 1991, the Pakistan demographic and health survey (PDHS) showed a prevalence of 19 percent (7), which increased to 26 percent in the PDHS 2006-07 (8). The UNICEF state of the world children report (1996-2000), reported the prevalence of LBW at 21%. This number fell to 19% in 1998-2003 (9), followed by a leap to 32% LBW in 2003-2008 (10).

Women younger than 18 years and older than 35 years, with previous history of multiple pregnancies, or preterm pregnancy, or currently carrying multiple or twin pregnancy, maternal stress, depression, maternal smoking, alcohol and substance abuse, very low weight gain during pregnancy, maternal employment, maternal chronic infections, kidney diseases, hypertension, diabetes, congenitally abnormal fetuses, etc are all considered as risk factors for low birth weight neonates (11).

In a WHO multicentric study, pre-pregnancy weight, attained weight at 20 weeks and attained weight at 36 weeks were the best predictors for delivering IUGR babies while pre-pregnancy weight and pre-pregnancy body mass index were the best predictors for a preterm delivery (12). The present study is conducted at a tertiary hospital. It explores the relationship between the third trimester maternal diets, in Pakistani women belonging to the suburbs of Islamabad, with the neonatal birth weights. We will use two terms in this paper. We will us the term low birth weight (LBW), for the preterm neonates and full term neonates weighing less than 2500 grams. Other term adequate birth weight neonates (ABW) will be used for all the term neonates weighing more than 2500 grams.

**METHODOLOGY:**

This hospital-based descriptional cross-sectional study is carried out between April-November 2007 at the follow up clinic of Maternal and child centre of Gynecology and obstetrics Unit of Pakistan Institute of Medical Sciences (PIMS), Islamabad. Women at no or low risk of delivering low birth weight neonates until the start of third trimester (26 weeks of pregnancy) were registered for the study. These women were followed up until the delivery and the neonatal birth weight was recorded.

Consecutive sampling was employed. All the women with singleton pregnancy with recorded body weight at 12 weeks gestation, which were 25 weeks to 27 weeks pregnant and planned hospital deliveries were enrolled. The period of gestation was calculated by a record of last menstrual date and confirmed by ultra-sonographic finding. A total of 157 women were found eligible out of 3269 screened.

In this study, the time from conception until 12 weeks was considered as first trimester, 13 weeks to end of 25 weeks was considered as 2nd trimester and after 26 weeks until birth was third trimester of pregnancy.

Enrolled pregnant women were not provided any additional intervention, and received the standard prenatal care based on the rules of Gynecology and Obstetrics Unit A of PIMS. Informed written consent was obtained from the study participants.

Socioeconomic, educational, gynecological, obstetric, and medical history was collected on a detailed pre-tested questionnaire at the time of registration. Maternal weight and hemoglobin was recorded at registration and twice at subsequent visits.

In a face to face interview, the pregnant women was asked to recall all foods, and beverages consumed over the past 24 hours, in a chronological order from first food or beverage consumed in the morning till the last food or beverage consumed at night at registration (26 weeks) and at all subsequent visits, however only the record taken at registration (25-26 weeks), 32 weeks and the visit nearest to the delivery was used for data analysis. This was about 36-40 weeks for the full term deliveries. The nutrient content of a standard portion of each food was multiplied by its reported frequency of use to calculate average daily nutrient intake.

Semi quantitative food frequency questionnaire covering an extensive list of foods and beverages was provided to the pregnant women and usual intakes of a list of different foods and beverages and the frequency of consumption per week was noted at the time of registration (26 weeks of pregnancy). The food consumption patterns were also observed from the 24 hours food recall conducted at least thrice, during the third trimester of pregnancy.

Fruit and vegetable samples, measuring cups and spoons and photographs of standardized portions were used to get a rough estimate of portion size. A computerized program
was developed using food consumption tables for Pakistani Population (2001) (13). Energy from food, quantity of individual macronutrients (Proteins, carbohydrates and Lipids), iron and calcium in the food, was calculated using this program. The energy was recorded as Kilo-calories (kcal)/day and amount of the macronutrients in diet were recorded as grams/day. Energy from the macronutrients was calculated by using the guidelines of UNHCR/UNICEF/WFP/WHO (2001) (14).

Extreme care was taken to calculate the calorie consumption, and the calories were calculated to the closest possible level, based on the food samples and measurements shown to the pregnant women.

The neonatal weight was recorded on the baby weighing scale in kilograms (kg), in the labor room of the Gynecology & Obstetrics unit. The baby was weighed without clothing, soon after drying the baby and putting the cord clamp. Only hospital-based deliveries were considered for analysis.

Sample Size calculation was done by using WHO sample size calculator, where P (prevalence=25% (7,8), Confidence Interval= 95%, Absolute precision= 0.07, Sample size= 157 patients

STATISTICAL ANALYSIS

Differences between group means were calculated by Student’s t test. Regression analysis was used to examine the trends between neonatal birth weight and the maternal dietary intake including energy, protein, carbohydrates, lipids, iron and calcium. Data was entered on Excel version 2007 and analysis was done on Graph-pad version 5.

RESULTS

Data analysis of only 129 cases (83%) was conducted; 28 women delivered either at home or were untraceable after the delivery. Data of 5 cases was excluded due to uncertain gestation age record.

In our study, 13% women delivered low birth weight neonates (< 2500g) (Figure 1). The mean weight of the low birth weight neonates was 2275 ±33.54 g (SD 134.16) (n=16). There was no statistically significant difference in the age, weight, height, and BMI of women delivering low birth weight and adequate birth weight neonates (Table 1). Majority of pregnant women belonged to the lower income group, three fourth of being housewives and one fourth were working women.

Figure 1: Pregnancy outcome of women with normal pregnancies

Table 1. Characteristics of Pregnant women with Normal pregnancies at the start of third trimester who delivered full term neonates weighing >2500g and those who delivered neonates weighing <2500g or Low birth weight neonates:

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Full term pregnancies with gestation &gt;37 weeks &amp; normal neonatal weight &gt;2500g</th>
<th>&lt;37 weeks pregnancies &amp; LBW (&lt;37 weeks &amp; &lt;2500g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal age (years)</td>
<td>25.94±8.41 (SD=4.30)</td>
<td>25.30±0.84 (SD=3.37)</td>
</tr>
<tr>
<td>Mean maternal House hold income (Rupees)</td>
<td>1497.5±182.47 (SD=19251.6)</td>
<td>1743.5±327.9 (SD=311183.13)</td>
</tr>
<tr>
<td>Maternal weight at registration (kg)</td>
<td>53.01±1.54 (SD=10.85)</td>
<td>51.71±1.5 (SD=14.46)</td>
</tr>
<tr>
<td>Maternal height (cm)</td>
<td>156±10.49 (SD=6.15)</td>
<td>155±1.28 (SD=5.13)</td>
</tr>
<tr>
<td>Maternal BMI at registration</td>
<td>25.80±0.21 (SD=0.23)</td>
<td>25.41±0.3 (SD=5.23)</td>
</tr>
<tr>
<td>Maternal Mid upper arm circumference (cm)</td>
<td>27.7±0.9 (SD=3.54)</td>
<td>27.7±0.95 (SD=3.83)</td>
</tr>
</tbody>
</table>

Values are mean ± SE and SD

N= number of pregnant women

A significantly lower energy, carbohydrate, and lipid intake was observed in women who delivered LBW. There was no significant difference in dietary protein, calcium and iron consumption among the women belonging to both groups.

The maternal weekly weight gain and mean hemoglobin...
concentration of women delivering LBW neonates was also significantly lower.

Comparison of food consumed from food frequency questionnaire showed that the women delivering ABW neonates had higher consumption of meat, egg and fruit in a week at the start of the third trimester. The women who delivered LBW neonates had higher, but insignificant consumption of black tea with milk and sugar and soft drinks.

**DISCUSSIONS**

Most of the studies conducted during pregnancy have the main focus to improve the pregnancy outcome and to ensure the optimal maternal and fetal outcomes. LBW is multifactorial in etiology and many individual factors have been evaluated for their role in length of gestation or the rate of intrauterine growth with significant associations having been documented for several of them. Nevertheless there is considerable confusion and controversy about the factors that have independent effects on LBW as well as the quantitative importance of these effects (15).

In the current study, all the pregnancies with high risk of premature or low birth weight deliveries were excluded. Despite this, the prevalence of low birth weight neonates was found to be at an alarming rate of 13%. In Pakistan, many small and large-scale hospital based studies from different parts of the country provide percentages of the LBW from 5% to 23% (16-22). The PDHS 2006-07 gives the percentage of low birth weights neonates in Pakistan as 26%.

In the current study, no significant difference was seen in the socioeconomic status, age, maternal weight, height, and maternal education between the two groups. Our study is in agreement with the comprehensive meta-analysis by Kramer (23), which suggests that maternal socioeconomic status (including maternal education) have no independent effect on intrauterine growth. We observed no effect of maternal height, and age also.

The lower maternal energy consumption during third trimester, lower maternal weekly weight gain and lower maternal mean haemoglobin concentration in our study, all point to the poor nutritional status during this important period of foetal growth. It is a well-known fact that a low level of weight gain during pregnancy is associated with an increased risk of low birth weight neonates (24). The recommended dietary allowance (RDA) for Pakistani pregnant women is 2510 calories/day (14). In the current study the energy consumption in both groups of pregnant women was below the national recommended dietary allowance (RDA). However, the mothers who delivered ABW neonates consumed significantly higher calories than the women who delivered LBW neonates.

Low maternal weight gain has been one of the most important causes of low birth weight. Some studies failed to demonstrate the effect of third trimester maternal weight gain on the newborn birth (25-27), however, other studies showed that the incidence of LBW and preterm neonates was lower in women who had gained adequate weight during pregnancy (19,28,29), similar to our study where we found that the weekly maternal weekly weight gain in third trimester was significantly higher in the pregnant women who delivered ABW neonates.

Anemia is a common problem in developing countries in pregnant women, ranging from 8% to 33% in Pakistan (30), and increases the incidence of LBW (31-33). In the current study, the maternal hemoglobin concentration in third trimester was significantly lower in the women who delivered LBW neonates.

Proteins, meat, and fruit are richer sources of iron, Vitamin C and Zinc. In the present study, we found a significantly higher frequency of consumption of proteins, including meat and eggs and fruits in the women who delivered ABW neonates. Similar findings were reported in a study conducted in rural India (32), where higher maternal fruit consumption was reported to influence the neonatal birth weight.

Low birth weight and premature births are considered as population health problem. The presence of a large percentage of cases in the absence of any evident risk factor shows a very alarming picture. Neonatal and perinatal mortality rates are highest in Pakistan in the region and low birth weight and prematurity are recognized as the leading causes (33). Considering the current trend in Pakistan, it is evident that it would be virtually impossible to achieve the MDG targets by 2015.

It is important to learn from the lessons of the developed and industrialized countries, which were successful in lowering the prevalence of LBW. Furthermore, population-based studies are required for monitoring and evaluating
the progress towards achieving national goals for lowering neonatal and infant morbidity and mortalities.

Usually the suggested public health interventions to reduce LBW are specific for the high-risk population. The high incidence of low birth weight in the low risk population of pregnant women in this study suggests that equal attention is required to the women with low risk pregnancies. Simple intervention, e.g. nutritional education for better dietary habits, will work for this group and reduce a substantial burden of LBW. Over the long term, general improvements in nutrition and living conditions should increase maternal nutritional status break the malnutrition cycle in women. It should also be borne in mind that no matter how convincing is the evidence that a given factor is causally related to intrauterine growth or gestational duration, there is no guarantee that its elimination or reduction will lead to amelioration of all adverse consequences of LBW including lower infant mortality and childhood morbidity.

**ACKNOWLEDGMENTS**

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**CONFLICT OF INTEREST**

There is no conflict of interest in this study.

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ABSTRACT

Background:
A wide range of services is required for treating the thalassaemic children. However, in resource constrained settings of a developing country, it is important to understand the problems faced by thalassaemic children and their families prior to proposing any interventions or strategies for the prevention and control of thalassaemia-related morbidities and mortalities.

Methodology:
A cross sectional descriptive study was carried out with fifty thalassaemic children (and their families). These frequently transfused children had been registered with the AJK Central Blood Transfusion Service, District Muzaffarabad.

Results:
Eighty percent of the thalassaemic children belonged to a poor socio-economic quintile. Only 4% of the parents never faced any difficulty in arranging blood for their children and they represent a well-off class. Forty four percent of the thalassaemic children were not using the chelation therapy because their parents could not afford it. Thirty six percent of the families of thalassaemic children never had heard about the thalassaemia screening test.

Conclusion:
Thalassaemic children need a standard treatment. However, it is a distant dream for the thalassaemic children of Muzaffarabad, AJK. There is no public or private sector facility specifically providing full range of services to treat thalassaemia. The poverty has compounded the sufferings and imperiled the health seeking behaviours of these children. There is an urgent need to appraise the financing and functioning of the health services so as to provide free or subsidized treatment to thalassaemic children for improving their quality of life.

Key words: Thalassaemia; Health seeking behaviours; Health services; Healthcare financing; Developing countries.

BACKGROUND

Thalassaemia is an inherited blood disorder with virtually no permanent cure and entails a considerable expenditure for maintaining a quality life of the patient. The treatment pattern of thalassaemia puts an immense burden on any health care system in terms of amplified demand for financial and human resources(1). Thalassaemia occurs worldwide, with a higher prevalence among Mediterranean population in the Middle East, in parts of India, Pakistan and South East Asia (2). Approximately 5-8% of the population in Pakistan is affected with this disorder (3,4). Experiences from the Mediterranean countries recommend preventive strategies such as screening, prenatal diagnosis with counseling and selective termination for thalassaemia diagnosed fetuses for controlling the frequency of the major and minor trait (5). Primary prevention strategies could therefore lead to total elimination of thalassaemia.

Low income countries face most of the public health problems because of low spending in health sector. In such settings, a child diagnosed as thalassaemia major and who has to take lifelong treatment of regular filtered packed red cell transfusions, chelation therapy for iron overload, management of complications of iron overload and repeated blood transfusions, considerably strain not only the family but also the country as a whole (1). The requirement for blood transfusions and chelation therapy of one annual birth cohort of affected children would be more
than the current health-related expenditure of the government. As treated children began to survive longer, costs would largely exceed the current expenditures for health care (6). With these constraints having implications on the availability of skilled human resources and a reasonable infrastructure in the current healthcare system, some innovative or alternative financing and health promotion strategies must be figured out to address the issues while treating thalassaemia children. This study has endeavored to explore the knowledge and to understand the problems particularly the economic constraints faced by the parents of thalassaemia children in seeking care in the central Blood Transfusion Service, Muzaffarabad.

METHODOLOGY

Study setting and population
Azad Jammu & Kashmir is mainly a mountainous area with valleys and stretches of plains. According to the 1998 population census, AJK had a population of 2.973 million, which is estimated to have grown to 3.868 million in 2009 with rural/urban population ratio of 88:12. The population density is 291 persons per square kilometers, of which a large majority lives below the poverty line, depending on local agriculture, livestock, non-formal employments etc (7). There is no public or private sector facility specifically providing full range of services to thalassaemia children in Muzaffarabad division of AJK. None of the private and non-government sector blood banks fulfill the minimum laid down requirements safe blood transfusions. Only the blood banks in secondary care government hospitals are providing thalassaemia services at par with the standard safety regulations, subject to the availability of consumables and blood at the service.

Study design and data collection
A descriptive cross sectional study was carried out with the registered thalassaemic children with AJK central blood transfusion service in district Muzaffarabad from May 15 to August 15, 2011. Considering a limited registry for thalassaemics, we adopted convenience non-probability sampling technique to same study population. This allowed selection of 50 frequently transfused thalassaemic children. Parents and caretakers who accompanied thalassemics for blood transfusion were interviewed, using a semi-structured quantitative tool which was pre-tested. Questionnaire and consent form were translated into Urdu for the convenience of the respondents. The variables reflected not only the socio demographic characteristics, but also the awareness about screening and problems facing in seeking care for frequently treated thalassaemic children. After informed consent, parents were interviewed by the trained research assistants at the AJK central blood transfusion services in a secondary care government hospital.

Ethical Approval and Considerations
The study was carried out after the ethical approval from Institutional Review Committee of AJK central Blood Transfusion Centre and the Health department of AJK.

Data Analysis
The data recorded on questionnaire was entered into the SPSS version 16. Descriptive statistical analysis was carried out in order to analyze problems being faced by thalassemic children and their families in Muzaffarabad division of AJK. We conducted descriptive analysis to document frequencies and percentages of study variables depicting awareness about screening and problems being encountered by the respondents of thalassaemia children.

Results
Results of this study showed that only 12% of the thalassemic children have survived to the age of more than ten years. Our study did not find any difference specific to gender in this regard. Eighty percent of thalassemic children belonged to the low income stratum (earning below Rs.7000/month), as defined by the Household Integrated Economic Survey (HIES) 2007-2008. A majority (72%) thalassemic children belongs to district Muzaffarabad, whereas 68% of them were resident of rural areas.

Only 4% parents of the thalassaemic children in our study revealed that they never faced difficulty in arranging blood for their frequently transfused children. This fraction also corresponds to the 4% thalassaemics belonging to the high income stratum. Forty four percent thalassaemic children were not using the chelation therapy due to the financial constraints. Thirty six percent of the respondents never heard about the screening test for thalassaemia diagnosis (Table 1).
Our study shows that disease and poverty combined put a considerable strain on the affected child and the family. Without a comprehensive treatment, death of a thalassaemic major child is more likely to ensue in the early childhood. Moreover, extending life of the unfortunate child into adulthood is very cumbersome too and entails a heavy expenditure on the family. It is evident from our results where many children were not able to afford chelation therapy and therefore a very few would have the likelihood of surviving beyond the age of ten years.

In Muzaffarabad division of AJK, there is no dedicated facility for provision of full range of services for thalassaemics, both in the public as well as the private sector. Presently, majority of blood donations are from friends and relatives of the patients. Thalassaemic patients need life long blood transfusion for their survival, thus it is imperative to arrange blood products from registered transfusion centers in order to diminish high risk of acquiring several blood borne diseases such as hepatitis B, C and HIV. Therefore, it seems plausible that in the absence of a system of voluntary blood donation, availability of blood for frequently transfused thalassaemic children could not be ensured. Public-private partnership for blood donation camps, to build the capacity of the personnel, and to enhance the quality of screening and storage facilities would be a desirable solution, in the current scenario. An overarching long term intervention should focus on informing and educating people about the risks involved in the consanguineous marriages.

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DISCUSSION

Our study shows that disease and poverty combined put a considerable strain on the affected child and the family. Without a comprehensive treatment, death of a thalassaemic major child is more likely to ensue in the early childhood. Moreover, extending life of the unfortunate child into adulthood is very cumbersome too and entails a heavy expenditure on the family. It is evident from our results where many children were not able to afford chelation therapy and therefore a very few would have the likelihood of surviving beyond the age of ten years.

In Muzaffarabad division of AJK, there is no dedicated facility for provision of full range of services for thalassaemics, both in the public as well as the private sector. Being coordinating base for all the blood banks throughout the state, AJK Central BTS Muzaffarabad provides blood to registered frequently transfused thalassaemic children subject to the availability of consumables and blood at the service. Private sector blood banks and Non Governmental Organizations working for thalassaemia hardly meet the minimum laid down requirements of AJK Transfusion of Safe Blood Act 2003, and therefore could not register with the AJK Blood Transfusion Authority.

The affected families have least support to deal with the catastrophic health expenditure related with this disease with limited care seeking options for of thalassaemic children. Various studies have documented that household coping strategies for such catastrophic health expenditures would mean borrowing and selling assets and more seriously ignoring illness and seeking no treatment, as a consequence (8). Poor compliance to blood transfusion and chelation therapy would markedly reduce the life expectancy of thalassaemic patients (9). These considerations also hold relevance to findings of our study where 44% of thalassaemic children were not using the chelation therapy due to financial limitations. Healthcare costs account for more than 70% of the economic shocks faced by poor households in our country (10). Protection against catastrophic health expenditures and financial risk protection for thalassaemia patients should be a priority in our country. Existing health related social protection mechanisms including Zakat and Bait-ul-Mal must consider these children as a priority population to extent social protection.

STRENGTHS AND LIMITATIONS

With this selection of study respondents from AJK central blood transfusion service, we were able to track registered thalassemics in AJK, seeking care from a centre practicing standardized procedures. This justifies validity of cases being treated with thalassaemia and is strength of the study.

Being a descriptive observational design, the study is prone to recall and information bias as the parents may have given varied responses depending upon the severity of disorder in their children. Selection bias is another limitation of the study because respondents were from a public health facility. Hence, the study does not depict level
of awareness and problems faced by the clients demanding thalassaemia management in private health sector.

CONCLUSION

Thalassaemia is a serious public health concern due to social and economic implications attached to this disorder indicating long lasting management. Children diagnosed with thalassaemia place considerable strain not only on affected child and family but on the country’s healthcare system, on the whole. This study calls for re-visiting the social protection strategies for prompt healthcare financing for the management of thalassaemia in poor settings of AJK and even other parts of the country. Moreover, health promotion campaigns to promote screening, prenatal diagnosis with counseling and selective termination for thalassaemia diagnosed fetuses could be instrumental to alleviate thalassemia burden from the county.

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Determining the factors associated with Unmet need for family planning: a cross-sectional survey in 49 districts of Pakistan

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ABSTRACT

Introduction & Background:
Around 137 million women in the developing world who would like to avoid childbearing are unable to do so, despite a huge increase in contraceptive access and use globally. Ironically, the prevalence of unmet need in Pakistan is among the highest in the world despite being one of the first countries in South Asia to launch national family planning program. The aim of this paper is to estimate the prevalence of unmet need for contraception and to identify the factors associated with it.

Methods:
A cross-sectional survey was conducted in forty nine districts of Pakistan across all four provinces from September 2008 to March 2009. Using an adapted version of PDHS questionnaire, interviews were conducted with approximately 10,000 married women of reproductive age in each district. Sample was later weighted according to district population at the time of analysis to control over and under representation. Logistic regression analysis was used to assess the association between risk factors and unmet need.

Results:
The total unmet need for contraception was 23.5%. Multivariable analysis showed that unmet need was found significantly higher in Balochistan and Sindh province compared to Punjab. The unmet need was quite prevalent among the specific groups that include older age women, low or uneducated women, those who have higher number of living children, had no history of miscarriage or abortion, those who are not exposed to mass media once a week, and among the women in lowest wealth quintiles.

Conclusion:
Despite all the efforts made to increase in uptake of contraceptive method the contraceptive prevalence rate has hardly changed over the last decade. However, several groups of women continue to have high unmet need for family planning. Thus, the family planning programmes may need to shift their focus from increasing uptake of contraceptives to satisfying unmet need for contraception with special focus on those underserved marginalized groups and areas with highest levels of unmet need.

INTRODUCTION

Around 137 million women in the developing world who would like to avoid childbearing are unable to do so, despite a huge increase in contraceptive access and use globally (1). Ironically, the prevalence of unmet need in Pakistan is among the highest in the world (2,3) despite being one of the first countries in South Asia to launch national family planning program (4). Family planning has been declared as the right of every human whether to practice it or not. However, many would space or limit their family size in order to improve living conditions (5). This results an unmet need for family planning which defined as a woman who is sexually active and prefer to avoid or delay pregnancies but is not using any contraceptive(6-8).

Pakistan is one of the most populous country with higher growth rate of 1.9, larger population (65%) living in rural areas (9). Nearly half of the population (45%) has limited access to health services both public and private (10).

The recent demographic survey reveals a very grieve story that nearly 72% either prefer not have a/another child or want to delay the pregnancy and almost half of the women have never used any method so far despite highest proportion is aware of at least one contraceptive methods.
In addition, the contraceptive prevalence is stagnant over the last decade after a sharp increase in the earlier decade (10). Nationally, the current CPR is only meeting 54% of the total demand for contraception, and except for Punjab province the proportion of met demand is below 54% across other provinces. In spite of low stagnant CPR, the TFR has gradually reduced from 5.4 to 4. Conversely, 1 of 4.1 TFR is an unwanted pregnancy; and this gets aggravated among the rural, uneducated, and poorest groups (10). Consequently, an estimated 890,000 induced abortion occurred annually in Pakistan whereby one in seven pregnancies is terminated by induced abortion (11).

The relationships among unmet need, abortion, and contraceptive prevalence are not clear. However, large number of induced abortions worldwide are a strong evidence that millions of women want to control their fertility but have not used effective contraception (12-16).

A study in Pakistan revealed fear of side effects and spousal, cultural and social acceptance as the decisive obstacles to limit contraceptive use, rather than the monetary and related direct costs of obtaining supplies (17,18). However, limited access to quality services is also a reason (19) sharing with an intrinsic resistance to FP pertaining to cultural conservatism, religious influences and the low status of women (20). Integration of FP services with other health services at all first-level care facilities is also recommended to be a long-standing, cheap and practical way to reduce the unmet need (21).

This paper attempts to identify the factors associated with unmet need for family planning. The information is expected to be used by key stakeholders at a national and international level to devise strategies in order to increase the coverage among particular groups, and to maximizing the efficiency and effectiveness of different family planning programs. Since, Pakistan has both - low CPR and high unmet need, therefore programs can possibly increase the use by just meeting the need to potential users, keeping prime focus to the groups with highest need. Addressing this need can have immediate effect in reducing TFR and unintended pregnancies.

**METHODS & MATERIALS**

The Marie Stopes Society (MSS) established a Community Based Distribution Program in 49 districts, across all four provinces of Pakistan. The model is an adapted version of original Willows Foundations model with the aim to provide door-to-door short-term contraceptive services and referrals to MSS static clinic for long term and other reproductive health care.

MSS employed 10 female workers under two supervisors in each district, covering a total population of around 68,000 in their catchment, per district. Workers hired, had a minimum secondary education, previous experience of data collection; later they underwent 8 day training on questionnaire and reproductive and family planning information. Based on programmatic requirement, each worker had to register and follow at least 1000 married women of reproductive age (MWRA) (15-49) within an allocated geographical area in a census-like manner where all MWRA in the household who gave informed consent were included in the survey. Thus, 10,000 MWRA were to be registered in each district; approximately a total of 490,000 completed interviews were recorded at the end of baseline survey that took place from Aug 2008 to Feb 2009 in three different phases. After data entry and cleaning 474,969 records were used for the analyses purposes.

The questionnaire used in the PDHS 2006-07 surveys was adapted and used. We included variables pertaining to socio-economic status: possession of household assets, source of drinking water, women education, number of household members; Reproduction: parity, current pregnancy, desire for children, history of abortion; and Contraception: knowledge, ever use and current use of contraceptives and their sources.

A detailed guideline was developed to monitor the proceedings. Data monitoring was carried out by different managers and research teams sitting at sites including field level, district level, regional level (provincial office) and national level to assess adherence to standard protocol, completeness and accuracy or forms, logical errors, interview with data collectors about questionnaire understanding. All the data were entered in each district office by two operators under supervision. .Net 2003, MS Access 2007 was used for data entry and SPSS 19.0 for analysis.

Statistical techniques include simple frequencies and
proportions for continuous variables were used. Using logistic regression, crude odd ratios at 95% confidence interval (CI) were calculated to see the association between risk factors and the dependent variable. All the variables that showed p-value of = 0.25 were included for multivariable analysis. Weighted estimates were calculated adjusting the sample according to population size of the districts. The risk factor i.e. family status was not included for multivariable regressions as it was derived from the original variable that is ‘number of living children’. Principal component analysis was used to create the socio-economic index (22) using; whether household has electricity, roof, wall and floor material, household water source and the ownership of goods (television, radio, refrigerator, bicycle, car, room cooler, washing machine, motor cycle, and water pump).

Definition of Unmet need for contraception:
Sexually active or fecund women who want to either limit or delay childbearing or and are not currently using any method for family planning are defined to have unmet need for family planning.

FINDINGS

Of the women interviewed, 66.0% belonged to Punjab, 28.9% aged >25 to =30 years, 49.3% had no formal education, 27.5% had 5 or more alive children, and 59.0% had completed family. Moreover, nearly one out of ten (11.4%) women had a history of abortion or miscarriage; self-reported pregnancy at the time of survey was 11.5%. Nine out of ten (91.9%) were aware of at least one contraceptive method and 45.3% reported to have ever user any method. In addition, 38.7% reported to being current users of any contraceptive method at the time of survey where majority were using condoms (10.0%), followed by withdrawal (9.8%), female sterilization (8.9%), IUD (3.1%), injection (2.4%), and pills (2.1%). Nearly one-fourth (23.5%) of the women wanted to delay or avoid pregnancy but were not practicing any contraception (unmet need for contraception).

Nine out of ten (91.9%) were aware of at least one contraceptive method and 45.3% reported to have ever user any method. In addition, 38.7% reported to being current users of any contraceptive method at the time of survey where majority were using condoms (10.0%), followed by withdrawal (9.8%), female sterilization (8.9%), IUD (3.1%), injection (2.4%), and pills (2.1%). Nearly one-fourth (23.5%) of the women wanted to delay or avoid pregnancy but were not practicing any contraception (unmet need for contraception).

Majority (34.4%) reported ‘RCC’ as the material used for household roof, followed by ‘T-iron, wood or brick’ at 30.1%. Moreover, ninety nine percent had electricity, while 90.1% owned television and 73.2% had water pumps at their houses. Hand pump/tube-well was the main source of drinking water for more than half of the respondents and 95.4% reported to use flush for their toileting needs. Nearly one-fourth responded to read a newspaper or magazine once a week and almost equal proportion listen to a radio, whereas nine out of ten watch television at least once a week.

<table>
<thead>
<tr>
<th>District</th>
<th>Unmet need for family planning %</th>
<th>Total demand for family planning %</th>
<th>District</th>
<th>Unmet need for family planning %</th>
<th>Total demand for family planning %</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>Karachi</td>
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<td>Multan</td>
<td>21.9</td>
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</tr>
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<td>Lahore</td>
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<td>Multan</td>
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<td>Peshawar</td>
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<td>Hangu</td>
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<td>60.9</td>
<td>Jacobabad</td>
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<td>62.5</td>
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<tr>
<td>Larkana</td>
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<td>57.3</td>
<td>Karachi</td>
<td>24.3</td>
<td>62.5</td>
</tr>
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<td>Okara</td>
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<td>Multan</td>
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<td>62.5</td>
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<td>Vehari</td>
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<td>Multan</td>
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<td>Multan</td>
<td>24.3</td>
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<td>Mianwali</td>
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<td>57.3</td>
<td>Multan</td>
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</tr>
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<td>57.3</td>
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<td>Sargodha</td>
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<td>Multan</td>
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<td>Sargodha</td>
<td>21.7</td>
<td>57.3</td>
<td>Multan</td>
<td>24.3</td>
<td>62.5</td>
</tr>
</tbody>
</table>

UNIVARIATE ANALYSES

The Univariate analyses (Table 2) shows that the unmet need was significantly associated with almost all indicators except history of abortion or miscarriage. Higher unmet need was found in Sindh and Balochistan province as compared to Punjab (odds ratio, 1.35 and 1.39, respectively). Women of older age are more likely to be living with unmet need compared to younger age women; similarly having higher number of children increases the odds of unmet need. In comparison to women who did not have any child, the odds of unmet need are 6.9 (95% CI: 6.6-7.3) times higher among women already has a son(s), 4.5 (95% CI: 4.3-4.7) time higher who has a daughter(s), and 13.4 (95% CI: 12.8 14.0) higher for those who have a completed family.

Exposure to mass media (TV, radio or magazine) at least once a week also showed significant association with unmet need (odds ratio, 1.47). In comparison to the women living in fifth or highest wealth quintile, unmet need was
found higher among the women living in the first or lowest wealth quintile. Unmet need showed significant association with the levels of education and the study results showed that the unmet need was highest among the women with no formal education and lowest among the women with higher education.

Women who do not read newspaper/magazine, do not listen to radio, or do not watch television at least once a week are (1.7, 1.1, 1.3, respectively) times more likely to be living with unmet need compared to those who are practicing this. Similarly, the odds of unmet need among women who have never heard or use any contraceptive method are higher than those who are aware of or have ever used any method.

**MULTIVARIATE ANALYSES**

In the multivariate analysis, variables like reading newspaper/magazine, listen to radio and watch television were combined and kept in the model. Moreover, variable of family status was dropped and only the variable 'number of living children' was included to avoid multicollinearity. The adjusted odds ratio estimated from the multivariable are reduced for almost all of the variables but stayed highly significant. In addition, women having no history of abortion or miscarriage turned significant with the adjusted odds of 1.10 (95% CI: 1.08 – 1.13). The unmet in Sindh and Balochistan stayed significantly higher compared to Punjab: women of Sindh had 1.31 times and Balochistan had 1.28 times higher odds compared to Punjab. Unmet need showed significant association with the levels of education and the study results showed that the unmet need was highest among the women with no formal education and lowest among the women with higher education. Women over the age of 35 years have the adjusted odds ratio of 2.05 (95% CI: 2.00 – 2.10) compared to under 25 years women. Similarly, women with 5 or more children are almost thrice (AOR 2.89) more likely to be living with unmet need compared with women having two or less children.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unmet need for family planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Province</td>
<td></td>
</tr>
<tr>
<td>Punjab</td>
<td>1</td>
</tr>
<tr>
<td>Sindh</td>
<td>1.31</td>
</tr>
<tr>
<td>KPK</td>
<td>0.93</td>
</tr>
<tr>
<td>Balochistan</td>
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</tr>
<tr>
<td>Age of MWRA</td>
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</tr>
<tr>
<td>&lt;=25</td>
<td>1</td>
</tr>
<tr>
<td>&gt;25 to &lt;=30</td>
<td>1.19</td>
</tr>
<tr>
<td>&gt;30 to &lt;=35</td>
<td>1.36</td>
</tr>
<tr>
<td>&gt;35</td>
<td>2.60</td>
</tr>
<tr>
<td>No of a live child</td>
<td></td>
</tr>
<tr>
<td>0-2 children</td>
<td>1</td>
</tr>
<tr>
<td>3-4 children</td>
<td>2.34</td>
</tr>
<tr>
<td>5 or more</td>
<td>2.89</td>
</tr>
<tr>
<td>Education Categories</td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>1.41</td>
</tr>
<tr>
<td>Primary</td>
<td>1.16</td>
</tr>
<tr>
<td>Secondary</td>
<td>1.11</td>
</tr>
<tr>
<td>Higher</td>
<td>1</td>
</tr>
<tr>
<td>Socio-economic</td>
<td></td>
</tr>
<tr>
<td>First/poorest quintile</td>
<td>1.14</td>
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<tr>
<td>Second quintile</td>
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</tr>
<tr>
<td>Third quintile</td>
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</tr>
<tr>
<td>Fourth quintile</td>
<td>0.95</td>
</tr>
<tr>
<td>Fifth/highest quintile</td>
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</tr>
<tr>
<td>Exposure to media once a week</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>216225</td>
</tr>
<tr>
<td>No</td>
<td>261326</td>
</tr>
</tbody>
</table>

**Table 2: Univariable logistic regression analysis of factors associated with Unmet need for family planning among married women of reproductive age group (15-49) across Pakistan**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Unmet need for family planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Punjab</td>
<td>315386</td>
</tr>
<tr>
<td>Sindh</td>
<td>105026</td>
</tr>
<tr>
<td>KPK</td>
<td>45622</td>
</tr>
<tr>
<td>Balochistan</td>
<td>11516</td>
</tr>
<tr>
<td>Age Categories of MWRA</td>
<td></td>
</tr>
<tr>
<td>&lt;=25</td>
<td>124101</td>
</tr>
<tr>
<td>&gt;25 to &lt;=30</td>
<td>137820</td>
</tr>
</tbody>
</table>
Although the national unmet need for contraception has reduced from 33% in 2001 to 25% in 2006-7 (10) with marginal increase in the CPR from 28% to 29.6%. After controlling for different risk factors, the multivariate analyses showed that the unmet need is still significantly higher among different sub-group of population that older age group, low educated, large number of living children, exposure to mass media, lower wealth quintiles and history of abortion or miscarriage. Moreover, geographically higher unmet need was found in Sindh and Balochistan as compared to Punjab and KPK.

Women with male children are more likely to have unmet need indicating the preference of having son in their family. Similarly, women are more likely to be living with unmet need once she has completed son(s) and daughter(s) in her family.

The relationship of socio-demographic characteristics with unmet need has changed overtime. In 1991, women from the poorest households had the lowest unmet need; over time unmet need among these women rose substantially, and they now have the highest unmet need (23). In 1991, 40 percent of women surveyed wanted no more children, this increased to 52 percent in 2007 (24). In addition, findings of this study also substantiate the findings of the latest nationally representative survey which reported that unmet need was highest among the poor, those living in rural areas, and women with no education (10).

Interestingly, the present study showed that women with history of miscarriage/abortion had lower unmet need as compared to women with no history of miscarriage/abortion. While high unmet need of contraceptives also results in danger to the lives of women as many women seek induced abortions in case of unwanted pregnancies. Abortion in Pakistan is used as a mean of birth control and avoiding unwanted pregnancies. Due to restrictive abortion laws, abortions are usually conducted by unskilled providers under clandestine conditions that further bring various severe consequences from life time disabilities to death increasing the maternal mortality rate (25).

This study also highlights significant provincial disparities with highest unmet need in Sindh followed by Balochistan. High levels of unmet need in Sindh may be explained with reference to largely rural population base in the province; whereas in Balochistan low literacy levels, rigid tribal setups, and poor road infrastructure, the lack of financial, technical and community resources explain the high unmet need (26). In addition, there is a lack of service delivery outlets and due to population growth pressure is increasing on the existing ones day by day. Furthermore, the service centers are not professionally staffed and their insensitive attitudes are vital hindrances for women to seek family planning services (25).

This study also indicates that married women of reproductive age having more media exposure had low unmet need in comparison to the women who had less media exposure and thus high unmet need. Family planning programs can use effective communication channels to address barriers affecting contraceptive use and to bring about a behavioral change. Effectively crafted, evidences-based messages can explain the true risk of pregnancy for women who are breastfeeding or have sex infrequently, address concerns about contraceptive side effects and health risks (27).

The findings of the study highlight the need for initiating family planning interventions that expand excess to high quality family planning services in rural areas as well as among the poor, women with no education and, among the couples achieving complete family size and wanting no more children.

**DISCUSSION**

Although the national unmet need for contraception has reduced from 33% in 2001 to 25% in 2006-7 (10) with marginal increase in the CPR from 28% to 29.6%. After controlling for different risk factors, the multivariate analyses showed that the unmet need is still significantly higher among different sub-group of population that older age group, low educated, large number of living children, exposure to mass media, lower wealth quintiles and history of abortion or miscarriage. Moreover, geographically higher unmet need was found in Sindh and Balochistan as compared to Punjab and KPK.

<table>
<thead>
<tr>
<th>History of miscarriage or abortion</th>
<th>1.13</th>
<th>1.10-1.16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1.1</td>
<td>1.08-1.12</td>
</tr>
<tr>
<td>No</td>
<td>1.10</td>
<td>1.08-1.13</td>
</tr>
</tbody>
</table>

*Insignificant
** Marginally significant

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The findings of the study highlight the need for initiating family planning interventions that expand excess to high quality family planning services in rural areas as well as among the poor, women with no education and, among the couples achieving complete family size and wanting no more children.

**CONCLUSION**

Despite all the efforts made to increase in uptake of contraceptive method the contraceptive prevalence rate has hardly changed over the last decade. However, the several groups of women continue to have high unmet need for family planning which includes older age, low or uneducated, having higher number of ‘alive children’, women not exposed to mass media once a week, women among the lowest wealth quintiles and women in Balochistan and Sindh province. Thus, the family planning programmes may need to shift their focus from increasing
contraceptive prevalence rate to satisfying unmet need with special focus on the groups and areas with highest levels of unmet need. Yet, the shift should not neglect serving continuing contraceptive users.

References:


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27. PATH-UNFPA. Outlook 25th Anniversary issue 2008;25(1).
New Face of Female Sex Work In Pakistan: Need for Innovative Interventions

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¹Research fellow, R & D Department, Health Services Academy, Islamabad; ²Public health consultant, Karachi

(Correspondence to Rizvi N: rizvi.narjis@gmail.com)

ABSTRACT

Objectives
The prime objective of this paper is to contextualize the socio-economic and environmental factors contributing to and resulting from behaviours and practices of FSWs for transmission of STI/HIV infections. Information on these independent predictors is the key to design health systems related interventions for minimizing risks and vulnerabilities of FSWs.

Methods
In the bio-behavioural survey, 545 FSWs were recruited for the quantitative component and 13 in-depth interviews were completed for qualitative arm. Data was collected on socio-economic characteristics, sexual interactions, marital relationship, violence and harassment and reproductive and sexual health.

Results
Most FSWs are illiterate (n=345, 64%), married (n=490, 91%), having children (n=462, 98%) living with their families (n=478, 91%) sell sex part-time during the day at kothie khana's¹, small hotels in the locality. The mean age at first intercourse was reported to be 16 years, yet a significant proportion had had sexual contact before the age of 15 (39%) with someone other than their husband (37%); the experience was perceived “unwanted” (40%) or even “forced” (5%). The high contraception rate (64%) especially condom use (54%) reported in the quantitative arm of the study was not validated during in-depth interviews due to client preferences. Abortion is used as a frequent method (58%) of contraception, assisted by locally available midwives or dais². A sizeable proportion reported experiencing STI symptoms (n=317, 63%) for which informal healthcare providers were accessed. Most common perpetrators were husbands (66%) for physical violence and police (43%) for sexual abuse.

Conclusion
Female sex trade in Pakistan is mainly part-time by married women who sell sex due to lack of education, skilled training and formal employment resulting from gender disparities. Standardized reproductive and sexual healthcare interventions involving informal healthcare sector would improve reproductive health indicators, yet socio-economic and gender disparities demand long-term multi-sectoral structural strategies.

BACKGROUND/INTRODUCTION

Female sex work is not only a social phenomenon; but has turned into a major public health concern because of the heterosexual contact, largely linked to sex work, resulting into HIV/STI transmission (1-3). This is manifested as around 90% of the burden of all new STI/HIV infections in underdeveloped or developing countries (4). FSWs are therefore at high risk for STI/HIV infection as well as transmission in all those regions where commercial sex is in practice (5).

In Pakistan prostitution is not only illegal, it is also considered as one of the ‘social evils’ of society, yet sex trade continues in all major cities of the country (6). There is little published evidence available to describe the full extent of the epidemic spread of sexually transmitted infections including HIV among sex workers and other people at greater risk (7). Information that would help understand the reproductive and sexual behavior of FSWs and the social context influencing it is limited. This paper aims to describe the socio-demographic characteristics, sexual interactions, marital relationship, and reproductive and sexual health of FSWs. This information will also help

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¹Kothie Khana's-These are residential bungalows in middle class areas owned by pimps who rent out rooms for sex work.
²Traditional birth attendant
contextualize the socio-economic and environmental factors contributing to and resulting from behaviours and practices of FSWs that make them prone to acquire and transmit infections especially STI/HIV. The information will also help design health systems and other related interventions to reduce the risks and vulnerabilities of FSWs and provide them opportunities to acquire better health and wellbeing.

**METHODOLOGY**

The Pakistan’s National AIDS Control Program (NACP) commissioned the national Reproductive Tract and Sexually Transmitted Disease study in 2006-07, funded by the Department for International Development, UK. One of the components of the study was the bio-behavioural survey of the high risk populations including Female Sex Workers (FSWs), Transgenders and Injection Drug Users (IDUs).

The bio-behavioural survey had two components: the qualitative and the quantitative. The detailed methodology of the qualitative component is given in another paper published elsewhere (8). In this component women sex workers were recruited through peer networks for in-depth interviews. Thirteen FSWs were interviewed. These interviews were taped, transcribed and translated from Urdu or Punjabi to English. These transcripts were entered into the software Atlas-ti. Data was coded to develop themes and sub-themes.

The quantitative component included surveys which were conducted in two cities of Pakistan: Rawalpindi in the Punjab and Abbottabad in the Khyber Pakhtoon Khwa. The detailed methodology of these surveys is presented in another paper published on the quantitative data (9). FSWs were recruited through Respondent Driven Sampling (RDS). Initial recruits served as “Seeds” for an expanding chain of referrals with respondents from each wave referring respondents for the next three subsequent waves. Survey staff interviewed these women at sites established in each city using hand-held Personal Digital Assistants (10-12) (PDA, Hewlett Packard). Clinical examination was done by trained doctors who also collected biological samples to test women for Trichomonas Vaginalis, Gonorhea, Chlamydia, Syphilis, Herpes Simplex and HIV. All participants were advised to come back after 3 weeks to collect their laboratory test reports. Treatment was offered if a participant had not already been treated for a condition diagnosed on laboratory testing.

**RESULTS**

In the bio-behavioural survey we recruited 545 FSWs and conducted 13 in-depth interviews in order to contextualize the socio-economic and environmental factors related with behaviours and practices of FSWs. The information gathered about FSWs through both these techniques is presented below.

**SOCIO-DEMOGRAPHIC CHARACTERISTICS**

The median age of FSWs was 30; however over two third (82%) were above 25 years. Marriage was almost universal (93%), and nearly all had a mean number of 3 children (98%) and were living with their families (91%); mostly with husband (87%). A significant proportion (64%) had no formal education and half had not even studied grade one. Although major source of income for almost all of them (98%) was through prostitution, over half (59%) had other employment majority (78%) worked as domestic servants (Table 1).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Numbers</th>
<th>Percentages</th>
</tr>
</thead>
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<td></td>
</tr>
<tr>
<td>Rawalpindi</td>
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<td>82.8</td>
</tr>
<tr>
<td>Abbottabad</td>
<td>107</td>
<td>20.8</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-24</td>
<td>94</td>
<td>18.0</td>
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<td>25-34</td>
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<td>Single/Never Married</td>
<td>33</td>
<td>6.1</td>
</tr>
<tr>
<td>Widowed/Divorced</td>
<td>5</td>
<td>1.2</td>
</tr>
<tr>
<td>Mean Years of Marriage</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td><strong>Has Children</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>480</td>
<td>98.0</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Number of Children</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Formal Education</td>
<td>341</td>
<td>64.0</td>
</tr>
<tr>
<td>Mean</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Live with</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Husband</td>
<td>464</td>
<td>87.0</td>
</tr>
<tr>
<td>Elsewhere</td>
<td>48</td>
<td>9.0</td>
</tr>
<tr>
<td>Parent’s family</td>
<td>21</td>
<td>4.0</td>
</tr>
<tr>
<td><strong>Employment other than Sex Work</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>314</td>
<td>59.0</td>
</tr>
<tr>
<td>No</td>
<td>219</td>
<td>41.0</td>
</tr>
</tbody>
</table>
Women during in-depth interviews expressed that except few young unmarried girls who are in sex trade, majority of sex workers start selling sex after marriage as a last resort to feed their starving children since they could not get other employment due to illiteracy and lack of training or useful skills. Most of these sex workers live in residential areas and sell sex part-time typically during the day in rented houses, hotels, Kotie Khana's and red light areas.

**SEXUAL INTERACTIONS**

The survey revealed that the mean age at first intercourse was 16 years (Standard Deviation (SD) = 3.6), however over one third (39%) had had sexual contact before the age of 15 and a similar proportion (37%) had first sex with someone other than their husbands. A significant proportion (40%) reported that the first sexual experience was "unwanted" and in few cases (5%) this was even "forced" (Table 2).

**MARITAL RELATIONSHIPS**

The survey showed that the mean duration of marriage was 13 years. Over two third (69%) of the FSWs reported having sex with their husbands in the last week, and a similar proportion (64 %) stated that their husbands do not know about their spouses’ sex work (Table 2).

### Table 2: Sexual and Social Relationships (n=533)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Numbers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Years of Marriage</td>
<td>13</td>
<td>34%</td>
</tr>
<tr>
<td>Currently Lives with Husband</td>
<td>464</td>
<td>97%</td>
</tr>
<tr>
<td>Husband Does Not Know she sells sex</td>
<td>341</td>
<td>64%</td>
</tr>
<tr>
<td>Has Had Sex with Husband in the Last Week</td>
<td>268</td>
<td>69%</td>
</tr>
<tr>
<td>Used Condom Last Time Had Sex with Husband</td>
<td>224</td>
<td>44%</td>
</tr>
<tr>
<td>Use of Condoms with Husband</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Always</td>
<td>64</td>
<td>12%</td>
</tr>
<tr>
<td>Sometimes</td>
<td>223</td>
<td>43%</td>
</tr>
<tr>
<td>Never</td>
<td>166</td>
<td>36%</td>
</tr>
<tr>
<td>Husband was the First Sexual Partner</td>
<td>335</td>
<td>63%</td>
</tr>
<tr>
<td>Mean age (SD) at First Sex</td>
<td>16.6 (3.6)</td>
<td></td>
</tr>
<tr>
<td>Age at First Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 12 years</td>
<td>10</td>
<td>1.9%</td>
</tr>
<tr>
<td>12-15 years</td>
<td>198</td>
<td>37.6%</td>
</tr>
<tr>
<td>16-17 years</td>
<td>139</td>
<td>26.4%</td>
</tr>
<tr>
<td>18+ years</td>
<td>180</td>
<td>34.2%</td>
</tr>
</tbody>
</table>

In-depth interviewees revealed that with the exception of those cases where husbands themselves pimp their wives, FSWs especially in initial years hide their involvement in sex work from family members including husbands because of cultural unacceptability. In some cases, however, husband and or other family members find out but seem to become silently complicit in view of the monetary benefits.

**VIOLENCE AND HARASSMENT**

Violence, physical, sexual or both, was almost universal among the sex workers surveyed. The most common perpetrator of physical violence was the husband (66%) followed by the client (38%) and neighbor (24%). On the other hand, in case of sexual abuse police (43%) was the most frequent perpetrator followed by husbands (34%) and other favourite sexual partner (33%) (Table 3).

### Table 3: Reproductive and Sexual Health Experiences (n=533)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Numbers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Contraceptive Use</td>
<td>357</td>
<td>67%</td>
</tr>
<tr>
<td>Type of Contraceptive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condoms</td>
<td>288</td>
<td>54%</td>
</tr>
<tr>
<td>Oral Pills &amp; Injectables</td>
<td>134</td>
<td>25%</td>
</tr>
<tr>
<td>IUD</td>
<td>57</td>
<td>10%</td>
</tr>
<tr>
<td>Norplant</td>
<td>13</td>
<td>2.4%</td>
</tr>
<tr>
<td>Tubal Ligation</td>
<td>64</td>
<td>12%</td>
</tr>
<tr>
<td>Rhythm</td>
<td>4</td>
<td>0.7%</td>
</tr>
<tr>
<td>Ever Pregnant</td>
<td>522</td>
<td>98%</td>
</tr>
<tr>
<td>Ever had an Abortion</td>
<td>309</td>
<td>58%</td>
</tr>
<tr>
<td>Mean Number of Induced Abortion</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Prevalence of STI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Herpes Simplex</td>
<td>21</td>
<td>6%</td>
</tr>
<tr>
<td>Syphilis</td>
<td>7</td>
<td>2%</td>
</tr>
<tr>
<td>Gonococcal infection</td>
<td>7</td>
<td>2%</td>
</tr>
<tr>
<td>Chlamydial infections</td>
<td>4</td>
<td>1.3%</td>
</tr>
<tr>
<td>STI Symptoms in Past One Year</td>
<td>432</td>
<td>81%</td>
</tr>
<tr>
<td>Type of STI Symptoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genital Discharge</td>
<td>360</td>
<td>67%</td>
</tr>
</tbody>
</table>
Two third of (67%) interviewed women reported current use of contraceptives. Condom was reported as the commonest method (54 %) followed by hormone pills and injections (25%). This high contraceptive use especially condom could not be validated through in-depth interviews. Reasons of non-use are related to clients including: non-preference, objection, interference with sexual pleasure, more payment, etc. One of the interviewee stated that “Clients pay to have pleasure and do not prefer to use condom” (IDI-12).

In-depth interviewees confirmed widespread violence and types of violence included: (1) Physical abuse ranging from beating, burning with cigarettes, to injury in the form of vaginal or anal tears and wounds resulting from forced intercourse; (2) Sexual abuse such as sexual intercourse without consent or forced anal or oral sex, gang rape, etc.; (3) Economic abuse - not paying the agreed upon fee or bringing other non-paying clients, etc.; and (4) Health abuse by refusing to use condom that may cause infection or result pregnancy for which sex worker had to undergo abortion. Reported reasons for abuse included: disclosure of sex business to husband or neighbours; not giving money to husband on demand; refusal to provide sex to husband, favourite partner or police; refusal to provide free sex to the un-invited friends of the client, etc. Interviewees also informed that police harass them and demand free sex for ignoring or even concealing their identity as sex workers and physically abuse them in case of refusal. Policemen of FSW's residential and business areas are frequently their “permanent clients” and girls are provided to them without charging money. One of the interviewees mentioned that policemen say that “Give us a nice girl and then trade (sex)
that a significant proportion of unmarried girls are entering into sexual relationship at a very young age under the influence of either a family member or peer; a finding in contrast to other countries (5,13,18). This is an eye opener since it clearly demonstrates that many young girls are being sexually exploited at a very young and also challenges the norms of the society which denies adolescents especially girls' access to information related to Sexual and Reproductive Health (SRH) under the pretext that it will enhance pre-marital sex.

High contraceptive prevalence especially condom use reported in the quantitative survey could not be validated through qualitative interviews. Non-use of condoms was mainly due to client factors as in other countries (5,11-13,16). This information highlights two important aspects: firstly, that the qualitative technique seems to be more appropriate to better understand sensitive issues such as sex and sexual behaviours as also suggested in literature (17,18); and secondly that inability to negotiate condom use is an important factor leading to non-use (19). The issue however is even more challenging in Pakistani society where social norms surrounding sexuality, illegality of sex work and stigmatizing attitudes towards sex workers places considerable constraints on women's ability to negotiate for condom use despite its proven role in risk reduction (4,20,21). For effective STI/HIV prevention, condom distribution alone is not enough but women's capacity also need to be enhanced to discuss sexuality with their partners and negotiate for condom use (13,22).

Low prevalence of STIs in FSWs is comparable to levels of STI among women in the general population (i.e. not a high risk group) elsewhere in Asia (23,24), however significant proportion reported experiencing STI symptom as in other studies from China (5,11). Very few FSWs reported seeking treatment, much lower than their counterparts in Vietnam (19). Traditional healers were preferred as doctors were perceived to be judgmental and humiliating as also seen in other studies (25). This indicates that for health interventions, especially related to sexual and reproductive health, the government needs to involve the informal sector including traditional midwives and healers who are catering to a great majority of such problems. This strategy would ensure provision of standardized reproductive health services to FSWs to cater to the unmet need and will also be highly effective in preventing STI/HIV transmission to the general population (21).

Despite under-reporting of abortion due to extremely strict abortion laws in Pakistan compared to easier reporting in China because of relaxed laws (26), the study still found a high abortion rate in this population as compared to China (15). This supports another study that reported a high rate of illegal abortions in Pakistan (27) either by a person lacking the necessary skills or in an unhygienic environment that does not conforms minimal medical standards or both (27,28). This calls for acceptance of induced abortion as a public health issue at every level at the macro level it should be incorporated into the draft health policy to reduce maternal mortality; at the meso level good quality post-abortion care services need to be available during the interim period till the rate of illegal abortions falls; and at the micro level communities should be made aware about dangers of clandestine abortions so that contraceptive use is increased.

Widespread violence ranging in typology and severity was almost universal in the sampled sex workers, and the perpetrators were always men as also found in another study (5). Violence not only causes injury and ill health, it also plays an important role in increasing the risk and shaping the risk environment for those who sell sex in many parts of the world (29). The reasons for violence were diverse but the underlying cause was categorization of sex workers into a group not allowed to refuse sex, money or any other assets of their resources demanded by the men of the society they live in. Illegality of sex work is used as a pretext for this categorization; however the actual reasons are deeply rooted in the societal norms where women generally have a low status.

The study has used Respondent Driven sampling technique which might have caused recruitment bias. It is possible that single women were less likely to come forward for interviews and physical examination since informal observation during the fieldwork revealed that most of the FSWs had given the excuse of 'some gynecological problems' as their reason for attending the clinic's a rationale that may be difficult for single women to use. Comparison with findings from other surveys in Pakistan, however, show that women who participated in this survey had broadly similar characteristics and reported behaviours to those sex workers taking part in behavioral surveillance (30) and STI/HIV prevalence levels are similar to those found in sex worker surveys in Pakistan (31).

RECOMMENDATIONS

In order to improve the current situation of FSWs in
particular and women in general some short-term interventions can be adopted including: (1) Education, skill building and employment programs for girls and women woven appropriately into the prevailing societal norms and values so that these are acceptable to communities; (2) Provision of Basic Life Skills (BLS) to girls during pre-adolescent period at every institutions such as home, schools/madrassa, etc.; (3) Brief culture sensitive, cognitive-behaviour, skill building training programs for women that enables them to discuss sexuality with their partners and negotiate use of contraceptives; (4) Involvement of the informal health sector including traditional midwives and healers especially with regard to reproductive and sexual health; (5) Recognition of illegal abortion as a public health issue and incorporation of post-abortion care as a strategy to reduce maternal mortality; and (6) Behavior Change Communication to create enabling environment at the macro, meso and micro levels so that women can use the various opportunities created for them as these are found to be effective if multiple levels including individual, family, community, institution are targeted synergistically (32). In addition, being signatory to various international accords for attainment of reproductive health and rights for women, Pakistan's government has to envision long-term structural strategies to make progress in stagnant or unchanged gender related indicators (33,34).

CONCLUSIONS

All the facts identified in this study like: choice of prostitution for earning money because of inadequate education and skills; sexual abuse of significant proportions of young unmarried girls despite strict cultural restrictions; utilization of informal sector for reproductive healthcare under the fear of discrimination by formal healthcare system; frequent use of abortion to limit child birth and extensive use of violence to acquire benefits from sex workers, clearly demonstrates discrimination against female sex workers. This is not simply because of legal issues or social stigma attached to female sex trade but the underlying fact is the low value attached in general to women in Pakistani society. A wide range of effective multi-sectoral strategies (legal, economic, education, health, etc.) need to be used to eliminate injustice and inequality faced by women in general and sex workers in particular, however the ultimate selection of interventions is dependent on the country's political will and social climate (35). Establishing a Commission on the Status of Women is not an effective tool for change - a more radical agenda is called for to confront the norms which currently deprive women's access to information, education, employment and healthcare that denies their right to wellbeing.

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INTRODUCTION

AIDS: Still a hidden epidemic

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ABSTRACT

Introduction
HIV/AIDS is not only related to the health of a person but is a disease of the entire society. As Pakistan is a developing country, HIV/AIDS has major impacts over the socio-economic and other developments of the country. The epidemic is destroying peoples' lives, eroding socio-economic progress, impairing productivity and straining social cohesion.

Objectives of the study
This scholarly paper aims
- To highlight the underlying individual, societal and structural factors or determinants contributing towards the HIV/AIDS epidemic.
- To discuss the effects of HIV/AIDS on the population and development of the country with reference to the available statistics.
- To suggest possible strategies to fight against this hidden epidemic of HIV/AIDS

Methodology:
A thorough and detailed systematic literature reviews from various national and international journals, databases and local and regional newspapers was conducted to analyze various factors and effects of HIV/AIDS on the population and development of the country with reference to the available statistics.

Conclusion
The HIV/AIDS related factors are interdependent and interrelated to each other and are on the rise day by day. HIV/AIDS related issues can only be addressed by using a collective approach at all levels including private, public and governmental in the country.

INTRODUCTION

Approximately 70,000 to 80,000 persons are infected with Human Immuno Deficiency Virus (HIV) virus in Pakistan from the total of 40 million cases of HIV around the world (1). A most recent report by the National AIDS control program- Pakistan (2004), a total number of 1,972 HIV and 231 acquired immuno deficiency syndrome (AIDS) cases had been reported to the government so far. Although, these numbers are low in comparison to other countries in the region, a general upward trend is noticed both for HIV and the number of AIDS cases in all four provinces of Pakistan. Moreover, these estimates are just the reported cases of HIV found in the country; the exact figures are not known due to the lack of proper surveillance system and lack of large scale epidemiological studies. Pakistan was initially described as a low-prevalence, high-risk country but this characterization is no longer valid. The country has already qualified for the concentrated epidemic category.

The HIV/AIDS epidemic is reversing the hard-fought development gains of previous decades (2). HIV/AIDS poses an unprecedented threat to global health and development. The epidemic is destroying peoples' lives, eroding socio-economic progress, impairing productivity and straining social cohesion.

As Pakistan is a developing country, HIV/AIDS has major impacts over the socio-economic and other developments of the country. Daily in newspapers, there is some issue relating to AIDS. The Pakistani government, NGO's and other health care agencies worldwide are seriously concerned over this public health issue. Therefore, there is an urgent need to look for the underlying individual, societal and structural factors or determinants contributing towards the epidemic. The paper will aim to explore and analyze those factors/determinants in detail with reference to the available statistics.
There are several determinants/factors of HIV/AIDS in our country. Those are: Poverty, migration, Injecting drug users (IDUs), unsafe injection practices, lack of blood transfusion screening and professional donors, low levels of literacy and awareness, gender inequalities, low contraception use and facilities, commercial sex, sex education as a taboo, and stigmatization and discrimination.

AIDS is caused by HIV virus transmitted through blood and body fluid. Being HIV-positive, or infected with HIV disease, is not the same as having AIDS. HIV can remain in the blood for many years before showing any symptoms. However, the person still becomes the carrier. As HIV continues in the body, slowly it can destroy body’s immune system and the body is exposed to a lot of opportunistic infections. Due to these infections and lack of body’s defense mechanism, the person can no longer cope and eventually dies. Currently, there are viral treatments available, however, those are only effective at the earlier stages of HIV infection and are very expensive. Nine out of 10 people who urgently need treatment are not getting it, and prevention is still only reaching one in five who should have it (3). Therefore, the primary goal must be prevention before one gets infected with this deadly disease. To achieve this primary goal, there are various other factors involved.

**Poverty**

Poverty is a major determinant of AIDS in Pakistan. Poverty gives rise to various social problems in the society. Poverty is increasing in Pakistan, and there are at least 36 million people or (6 million households) that fall below the poverty line (3). The poor not only suffer from the limitations in income but also lack the basic facilities and amenities of life. If we analyze the current health structure of Pakistan, the government is spending only 0.7% of its total budget on health. According to the report, the government should be spending per capita 30 to 35 dollar on a person, while Pakistan is currently spending only 15 dollar on a person.

Limitations to education and basic health care facilities limit an individual's ability to find work, which in turn limits their ability to make improvements in lifestyle or circumstances. This in turn results in psychological and financial problems and the individual is forced to engage in ill habits and other vulnerable tasks leading to various diseases such as AIDS. As a consequence, not only the family gets affected but the entire society is put into danger. Due to the limited resources and other factors such as stigmatization, lack of awareness, cultural influences, even those who are affected are also the ones who are least able to gain access to the health and the social support that they need.

**Migration**

Migration including inter provincial, rural to urban and international is seriously affecting the AIDS epidemic in Pakistan. According to a report by United Nations Population Fund (UNFPA) (2004) 24% of urban growth in Pakistan can be attributed to migration including international migration with influx of Bangladeshis, 2-3 million illegal entrants and as many as three million Afghan refugees. In addition, 32% of the rural population has so far moved to urban areas. According to the report, urban population in Pakistan has grown over seven times from about 6 million in 1951 to about 34 million in 1998 (4). This overall influx of migrating people resulting in high rise of population poses serious challenges in the provision of basic amenities and resources. Moreover, it serves as a breeding ground for many social problems and diseases including drug and child abuses, HIV/AIDS and sexually transmitted infections.

A significant number of Pakistanis working abroad, especially in the Middle East, and other places are especially vulnerable to HIV, and pose a great threat when they come back home, putting their spouses, sexual partners and contacts at greater risk. Similarly, sexual activity outside the country, especially in high HIV prevalence regions, has been labeled as a major cause of the influx of HIV in the country (5). As these people are far from their families, they suffer isolation and emotional disturbances as a result they indulge themselves in high risk behaviors such as having unprotected sex. It has also been reported that those working in Gulf States, were reported to be HIV carriers. When these workers were deported, they did not reveal to anyone that they were carriers of the virus. Ultimately, they transmitted the disease to their wives. In some cases, women delivered babies who were infected with this virus. Additionally in our current political system, there is no specific policy measure to ensure non discriminatory and sensitive testing measures for the incoming deported laborers at the ports which are causing a further threat for the infection.

**Injecting Drug Users (IDUs)**

In most Asian countries, injecting drug users are the first
community to be affected by HIV. The number of drug dependents in Pakistan is currently estimated to be 3 million persons out of whom an estimated 60,000-100,000 inject drugs. Moreover, new patterns of drug use and shifts to injections in particular were an important factor contributing to rapid increases of HIV infection among drug users. The prevalence of HIV/AIDS in the injecting drug users (IDUs) was more than the cutoff point of 5 per cent which is ultimately a sign of concentrated epidemic.

In Sindh, according to the chief of the provincial AIDS control program, more than 4,200 IDUs were tested between June 2003 and August 2004 and the number of people who had HIV or AIDS was 226, which means that the prevalence is 5.3 per cent among the IDUs. In the provinces of NWFP and Punjab, the surveillance system for detection of HIV/AIDS cases was in poor shape and therefore, there are few reported cases of HIV/AIDS. IDUs are not cut off from the other groups in society. Many of these people have families and many sell sex and therefore, these people can easily fuel the prevalence of HIV/AIDS. Moreover, they often share needles.

There are several socioeconomic and demographic factors associated with injecting drug use among drug users in Pakistan. Several studies have also identified these factors and knowledge of IDUs regarding HIV infection. In a study on HIV/AIDS risk behaviors and correlates of injection drug use among drug users in three Pakistani cities i.e. Quetta, Peshawar, and Rawalpindi. The researchers concluded that 99.8% of the drug users in the study were married males among the age of 32 years and among them 15.2% were using heroin in injected form. Among the study participants, only 41% had heard about AIDS and 30% had been paid for donating blood. Interventions to discourage transitions to injections, increase HIV testing and safeguard the blood supply in the country are urgently needed (6). Another similar study also concluded that high risk behaviors such as illegal modes of earning and presence of suicidal thoughts among IDUs suggest that the group needs rehabilitation programs. Moreover, non-sharing of income suggests that IDUs are isolated from social network. Therefore, primary prevention activities with focus on improving socioeconomic conditions and social networking can reduce drug use through injections (7).

Past political situations in the country such as Afghanistan war have also made the situation worse. The war in Afghanistan in the year 2001 may have had direct or indirect effects on drug users’ behaviors in nearby Pakistan. The researchers studied the drug use patterns and correlates of needle sharing among injection drug users in Lahore, Pakistan, before and after the beginning of the Afghanistan war and concluded that levels of needle sharing were significantly higher after the war (56% versus 76% respectively). There were several factors associated with needle sharing included registering after the war began, which were; being married, being homeless, having being arrested and reusing syringes (8).

Unsafe Injection Practices
Unsafe injection practices include frequent use of injections as a treatment choice, lack of awareness regarding injection safety, use of injections for occupational purposes, improper disposal of hospital wastes and use of unsterilized needles injections; all of these are leading factors for the increasing AIDS epidemic. Pakistan has a high rate of medical injections, around 4.5 per capita per year. Moreover, there is a widespread use of unsterilized needles at medical facilities. Unsafe injections account for 62% of hepatitis B, 84% of hepatitis C and 3% of new HIV cases. These are only the reported cases. Most of the time in the community, it has been observed that people prefer to have injections rather than any other mode of drug administration. It is commonly believed that injections will provide a rapid and complete cure. Due to this belief among people, most of the general practitioners in the community, heavily prescribe injections for the treatment purposes. Moreover, in some of the clinics, instead of using disposable syringes, unsafe, unsterilized needles are being used which further poses a threat to the spread of infection.

In many villages of Pakistan used medical syringes are utilized for occupational purposes such as injecting cattle oxytocin for increasing milk production. Children were being asked to acquire used syringes from local dispenser or primary care workers who provide much of the health care services in Pakistan, and most of whom receive no formal medical training. 21 dispensers or primary care workers interviewed gave out an average of 4.7 syringes per day mostly to children. They claimed that the practice had been in existence for many years and existed all over Pakistan. Handling of contaminated needle by children and their elders exposes them to dangerous blood borne infections such as HIV/AIDS and other blood borne infections (9).
Improper disposal of hazardous waste is another source of infection. There is no proper system of disposing medical waste in most of the hospitals in the country. The hospital waste has become a major source of spreading various infectious diseases (10). It had been noticed that the waste was being disposed of unhygienically either in the Solid Waste Management skips and sites allocated for them. Similarly in other cities also, more or less the same situation exists. Improper disposal of hospital waste results in the recycle and re-use of infectious medical supplies like syringes, IV, blood and urine bags which further give rise to the spread of infection.

Lack of blood transfusion Screening and Professional Donors
It has been estimated that 40% of about 1.5 million annual blood transfusions are not screened for HIV. However, screening in the public sector has made progress, private blood banks remain mixed. The National legislation in Pakistan regulating blood banks has been introduced several times, but has never been passed. A study was conducted to evaluate blood banking practices in Karachi, Pakistan. 37 blood banks surveyed randomly. The results showed that among the 37 selected facilities, 25 were operational and 24 agreed to participate. 50% of the facilities reported regularly utilizing paid blood donors, 25% activity recruited volunteer donors. During observation only 8% of facilities asked donors about injecting drug use, and none asked donors any questions about high risk sexual behavior. While 95% of blood banks had appropriate equipment and reagents to screen for hepatitis B, only 55% could screen for HIV and 23% for HCV. 29% of the facilities were storing blood products outside the recommended temperature limits (11). Ideally the blood banks should be dealing mostly in blood donated by volunteers but the reality is that only 20 percent of the blood available there is donated by volunteers. The rest is either donated by family donors or commercial ones. He further added that the blood banks could not become safe from the standpoint of HIV/AIDS until more than 95 per cent of the blood available was donated by volunteers. It is recommended that the passage of the Safe Blood Transfusion Act and installation of incinerators at the hospitals, besides other measures would help to check the spread of HIV/AIDS. However, no action has been seen to date.

Low levels of Literacy and Awareness
One of other major determinant of AIDS in Pakistan is the low literacy level and lack of awareness among the people. According to 2004 indicators cited in Asian development report (2002), the literacy level of Pakistani population is 44% (12). The government of Pakistan spends 2.7% on education. Due to low literacy level and lack of significance given to the issue, people lack the awareness regarding the disease. It won't be wrong to say that the significant sections of Pakistani society are still largely unaware of the presence of HIV/AIDS, especially in rural areas. The amount of mass media attention to the issue has been increasing over the past few years but still requires improvements in terms of both quantity and quality. Placement of posters in inaccessible places, their quick removal after even casual complaints of being explicit, and replacement with ineffective materials have been reported. Additionally, lack of awareness leads to lack of decision making abilities and results in making wrong choices or inability to ask for the right thing. An average Pakistani rarely ever goes to a hospital or clinic. If a doctor or nurse gives someone an injection, they are not going to ask questions about the safety of the procedure (13).

Lack of awareness is not only limited to general public only. Various studies have shown that that even the health professionals do not have adequate knowledge regarding the AIDS. A study was conducted among specialist and general practitioners from certain private clinics and tertiary care hospitals in Karachi. The study concluded that doctors in Karachi, especially GP's are deficient in appropriately managing and counseling sexually transmitted infection (STI) patients. Among the specialists, urologists and dermatologists were more likely to manage STIs correctly than gynecologists. Karachi doctors should be educated in the correct management and counseling of STIs to prevent further spread of STIs including AIDS (14). Therefore, there is a need to educate people regarding the AIDS awareness not only at mass level but also among the health professionals.

Gender Inequalities
Gender inequalities also tend to play a significant role in AIDS epidemic. Pakistani women have lower socio economic status, low literacy level, lack of empowerment, lack of decision making power and restricted mobility as compared to Pakistani men. Due to this gender disparity, Pakistani women are under high risk and vulnerable for AIDS. Domestic violence, sexual abuse and incest, sexual harassments are other common evils present in the society which puts women at risk. It is much more difficult to reach
women than men with the information, they need to protect themselves. Furthermore, women are also underrepresented in the formal labor force, which reinforces their economic and social dependency on men. Restriction on mobility often makes it very difficult for the women to obtain access to the health care facilities and other social services available, including the basic reproductive health care. Similarly, due to lack of decision making power and other cultural aspects, women are unable to share and negotiate with their partners regarding safer sexual practices.

**Low contraception use and facilities**

Given the country's current fertility rates, an age structure weighted heavily by young people less than 15 years of age, and a contraceptive prevalence rate among married women of reproductive age below 15% is again a significant factor. Instead of various programs run by the government for controlling the fertility rates, provision of service delivery, media education, still the contraceptive prevalence rate for modern methods in Pakistan is 9%. This reflects a low use of condoms and other barrier methods of contraception and sexually transmitted disease prevention. One of the major reasons for low contraception use is gender inequality and lack of empowerment and participation by women which is discussed in detail in gender inequalities description.

**Commercial Sex**

Commercial sex is widespread in major urban cities, on truck routes, and near labor camps. Due to low socioeconomic status, illiteracy, particular behavioral patterns or other special characteristics, people tend to indulge themselves in such livelihood strategies which make them vulnerable for the disease. Poverty and denial of education and attention compelled women to become sex workers. These women want to have families too but because they are poor and have mouths to feed they take up this line of work. Furthermore, most of the sex workers lack the awareness regarding the safer sex and often lack the power to negotiate safe sex or seek treatment for sexually transmitted diseases.

**Sex Education as a taboo**

Pakistan being an Islamic country, in most of the families due to socio cultural and religious reasons, talking about sex is considered as a taboo. This creates curiosity among the young generation. As a result of this curiosity, they tend to engage in high risk behaviors which make them vulnerable to sexual diseases. Moreover, wrong information and beliefs regarding sex keep flowing in. The restriction on public discussion of sexual topics by conservative elements of society is a limiting factor. Regarding educating children about HIV/AIDS, younger boys are even scared to masturbate as they have been told by the men in their work areas that it was wrong and they should be having sex instead. Approaching children on this subject is not easy in this deeply Islamic country. The children become shy when we start educating them, as Pakistan is a very conservative society. It has also been observed that when the children are informed regarding sex, they become shy and wonder why he is talking to them specifically, as many will not admit that they are having sex. The report emphasizes that in a country where youth makes up 23% of the population, getting the message across to children has also become a priority for the government's National AIDS control program. In addition to lack of discussion about sex denial of being infected is another major issue. The average person does not think that they can also get AIDS. People believe that it can't happen to them in a Muslim country.

Lack of sex awareness and freedom to talk about it, has given rise to the problems such as homosexuality in the country, which is another contributing factor towards AIDS epidemic. Therefore, recently the government has urged the religious leaders to come forward and plan strategies to aware people regarding the concept of sex and HIV/AIDS in accordance with the religious teachings. As a result for the first time in Pakistan, a booklet titled, ‘role of religious leaders in HIV/AIDS’ have been published and circulated among the religious leaders and people of various provinces of Pakistan.

**Stigmatization and Discrimination**

Often lot of stigmatization and discrimination towards AIDS limits a person to get a proper referral to a health care facility or guidance from healthcare professional. This is one of the reasons that most of the cases of HIV/AIDS are underreported in this part of the world. This in turn poses a much greater threat to the spread of the disease. Not only the individual but the entire family is put under risk due to non-reporting. Often People are being labeled as having a serious disease and put to isolation. Discrimination at work place is common. People are not put to work as soon as they are diagnosed with HIV. No such legal protection or legal policy exists in the country for the protection and rights of these patients. Therefore, if people come to know that
they have the disease, they tend to hide it. Moreover, they might end up having other psychological problems and suffer mental illnesses.

**CONCLUSION**

All the factors described in the paper are interdependent and interrelated to each other. These factors are increasing day by day and if not addressed properly may get out of control, posing disastrous effects and other major challenges to the country's development and future prospects. Moreover, these factors raise various complex issues which can only be addressed by using a collective approach at all levels private, public and governmental. We must remember that AIDS is not only related to the health of a person but is a disease of the entire society. While keeping in mind all the contributing factors, it is our prime responsibility to act united towards reducing the threatening AIDS epidemic in our country.

**References:**


Neonatal deaths in Pakistan: Managing the challenge

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ABSTRACT

Background:

Every hour 450 neonatal deaths occur worldwide and approximately 4 million babies die during first week of their life. The middle and low income countries bear most of the neonatal mortality where more than half of these deaths occur in households. Pakistan is among six countries which account for 50% of all child deaths worldwide. Most of these deaths occurring in households are preventable. This review attempts to determine gaps either in our health system and practices for neonatal care to present a roadmap for the effective neonatal health programming in resource limited settings.

Methods:

The review methodology used three pronged approach. Firstly, we searched data bases such as PubMed, Cochrane, WHO regional database to catalogue international experiences. Secondly, a detailed document review for sorting the local evidence regarding neonatal health was performed. The third step of the review methodology used open search for indexing the neonatal care specific programmes both in the public and the private health sector.

Discussion:

Neonatal death entails a multitude of socio-economic and health system related factors. Health system related factors are substandard care, inadequate training, low staff competence and inefficient resources including equipment & medication while illiteracy, cultural practices and low socio-economic status also contribute to soaring neonatal deaths. The success of community based programmes specific to neonatal health is primarily dependent on socio-economic and political factors, health infrastructure and health system factors. Devising short, medium and long term strategies to bring down high neonatal mortality rates are critically needed at this point in time.

Conclusion:

Improvements in service delivery of neonatal health specific programmes and capacity development of community health workforce are short and medium term strategies in order to augment home based care. Long term strategies include empowerment of communities and relocation of health budgets towards betterment of primary health care services.

Keywords: Neonatal care, Community health workers, Health system strengthening, Developing countries, Public private partnership in health sector
first year of life, whereas two third of infant mortality take place within first 28 days of life. Among neonatal deaths, three fourths occur during the first week of life, while 25% occurs within the first 24 hours after birth. The majority of the neonatal mortality is recorded at home (4-7).

The most direct causes of neonatal mortality are infections, preterm births and birth asphyxia contributing 36%, 27% and 23% of deaths respectively; while 14% of neonatal deaths occur due to congenital and other causes (8). About 60-80% deaths occur in low birth weights babies and due to maternal complications, especially during childbirth. It is ironical that 86% of these causes are preventable.

Neonatal Mortality Rate (NMR) is about 54/1000 live births (9), quite far from the desirable targets of the Millennium Development Goals. In Pakistan, newborn babies die mainly due to birth asphyxia, intra-uterine growth retardation, acute respiratory infections and diarrhea. All of these causes are both preventable and treatable. Alarmingly, majority of the births occur at home and are attended by untrained traditional birth attendants. This startling rate of neonatal deaths cannot be justified in this day and age. Though, preventable diseases are important causes of death during the first month of life, there is need to consider epidemiological and operational research for planning and accelerating progress at all levels to reduce the neonatal mortality. Evidence and research has established that these causes do not require any hi-tech interventions but on the contrary, they can be prevented through promoting simple awareness and strengthening of the primary health care (PHC). The philosophy of PHC advocates the universal access to antenatal care, skilled birth attendance and early postnatal care and this continuum of care has the potential to contribute towards sustained reductions in neonatal and peri natal mortality.

While the Infant Mortality Rate (IMR) has declined steadily over the last two decades, there has been no parallel decline in NMR in Pakistan. To complement facility-based care, cost effective home-and community based strategies to promote optimal neonatal care practices have been proposed in resource limited countries (10). Two types of approaches have been endeavored in research trials and subsequently neonatal health programmes during the last decade (11). Firstly, out reach services for the promotion of optimal care; secondly home-based management of neonatal problems inclusive of neonatal resuscitation if needed, and the promotion of preventive services have proven effectiveness for framing policy in order to augment coverage and uptake of neonatal health interventions by the community.

In this review, we try to explore the reasons for neonatal deaths and identify the gaps in the health system of Pakistan to cope with this alarming situation, so that effective short, medium and long term strategies can be evolved to address the causes associated with poor neonatal health indicators. This paper determining gaps either in our health system and practices for neonatal care will attempt to present a roadmap for the effective neonatal health programming in resource limited settings.

**METHODS**

The review methodology used three pronged approach. During first step, we searched data bases such as PubMed, Cochrane, WHO regional database using keywords: neonatal care, community health workers, health system strengthening, developing countries, public private partnership in health sector. Secondly, a detailed document review for cataloguing the local evidence regarding neonatal health was performed using search engines like Google, Google Scholar using the same keywords as used in the first step. The third step of the review methodology used open search for indexing the neonatal care specific programmes both in the public and the private health sector. Combining three approaches, we reviewed original articles concentrating on neonates through community based observational and intervention studies, systematic reviews, meta-analyses, public health web links working for neonatal health, neonatal health related programme documents, private sector contributions, evaluation of neonate specific programmes and the government surveys.

**GAPS**

The existing health infrastructure comprising of basic health facilities with referral patterns, MCH centers, health house and outreach services resourced with community health work force are service delivery structures for neonatal care in the Pakistan. The Government of Pakistan launched National Programme for Family Planning and Primary Health Care and has so far deployed about 110,000 Lady Health Workers (LHWs) in 135 districts of all the four provinces and regions of the country (12). One of the prime responsibilities of the LHWs is coordination for child immunization, weight monitoring for under three
The existing health infrastructure comprises of trained services notably during the early neonatal period. Poverty curtail access to effective maternal and neonatal care. Such practices compounded with culturally influenced decisions which are more vulnerable to infections hence causing high neonatal and child mortality. Prematurity and birth asphyxia are the major causes for neonatal deaths. In Pakistan, one quarter mothers receive post natal care within 4hrs of delivery, 6% within the first 4-23hrs and 7% receive care 1-2 days after delivery of newborn. Reportedly, three out of five deliveries took place at home attended by unskilled birth attendants and only 3 of every 5 women reported not having a postnatal visit. Prematurity and birth asphyxia are the major causes for 75% of the neonatal deaths occurring during the early neonatal phase (9). Reduced care seeking for girls compared with boys has been reported, especially in south Asia (16,17), and sex discrimination through sex-selective abortion before birth is well documented. Lack of female empowerment either social or economic is a major factor causing high mortality rates in Pakistan directly or indirectly. It contributes to lack of knowledge and awareness about contraceptives, inadequate birth spacing which in turn cause preterm births and low weight babies which are more vulnerable to infections hence causing high neonatal mortality. Such practices compounded with poverty curtail access to effective maternal and neonatal services notably during the early neonatal period.

The existing health infrastructure comprises of trained health workforce working under LHVs and MNCH program. The current formal MNCH workforce in Pakistan is Lady Health Visitors, LHVs, Trained birth attendants and CMWs. The neonatal morbidity and mortality usually occur in households, where these health care providers have access to socially deprived and the poor communities. In addition to these programmes, the Maternal and Child Health Centers (MCHCs) are part of three tiered integrated health care delivery system of Pakistan. Despite these MNCH services, country is far for attaining Millennium Development Goal 4 of reducing 2/3rd child mortality by 2015. There are multiple health system factors responsible for the inefficiency of these programmes. One of the key impediments is inability of a health system to foresee future due to scarcity of data on NMR and associated risk factors (18). Inappropriate tracking mechanism to record civil registration systems are commonly observed in the developing countries. As a result, the health regulatory bodies have weakened capacity in planning for MNCH services for larger populations in order to attain universal coverage. The human resource component to provide skilled care related to neonatal health is critical while targeting universal coverage. A study conducted on the initial assessment of skilled birth attendants (CMWs) in rural Pakistan revealed that the basic knowledge for the neonatal care is not sufficient (19). The success of community health programmes is primarily dependent on socio-economic and political factors, health infrastructure and health system factors (20,21). This multidimensional approach for the betterment of neonatal health indicators seem to be missing in the current operational programmes in the country.

Moreover, the meager financial resources on part of government are playing a major role in all above stated gaps. Only 2% of GDP is allocated for social sector annually and only 0.5% of government expenditure is spend on health. Pakistani community living below poverty line bears 98% out of pocket private health expenditure and 80% are consumers of private health sector (22). Limited health care financing compounded with suboptimal allocation of resources such as more investments in the tertiary healthcare as compared to primary healthcare services are the limitations in attaining universal coverage for neonatal care. The inadequacy in the primary health sector budgeting poses underutilization of MNCH care; thus affecting quality of service delivery, e.g. inadequate training, low staff competence and inefficient resources...
including equipment & medication.

**NEED FOR BREAKTHROUGH IN THIS SITUATION**

Devising proper and practical strategies to bring down high mortality rates among newborns are critically needed at this point in time. There are interventions being made to address preventable causes for neonatal mortality (2). Irony, almost all current programs are focusing on preventing late neonatal deaths but early neonatal deaths account for 75% of all such deaths are still overlooked. Attainment of goals set for 2015 can only be achieved through revitalization of primary health care services in order to reach every neonate thus promoting universal coverage. Strengthening home and community based essential maternal and neonatal care are key objectives of LHWs and MNCH programme. However, attainment of programme goals can only be justified with sound comprehension of demand side issues and constraints to improve services related to neonatal health. Therefore, short, medium and long term strategies are proposed to account for causes of early neonatal mortality and exploring options to fill gaps in a burdensome health system.

**Short Term Strategies**

Improving service delivery of LHWs and MNCH programmes may have positive implications on the health of mothers and neonates. The programme design is very appropriate according to need of the community where community health workers live in, selected by community, trained, integrated and supported by larger health system and are an effective conduit between the community and health system (23,24). The direct causes of neonatal deaths can be managed at home under MNCH programme where skilled management of newborn immediately after delivery, APGAR score, prevention of neonatal tetanus, neonatal complications requiring referral and immunization are essential components of essential neonatal care package. To account for the indirect causes of neonatal mortality, LHWs and the provincial population welfare departments have to play vital role in terms of promoting antenatal visits and family planning services at household level through effective deployment of fully equipped LHWs and welfare workers.

**Medium term strategies**

Health staff trainings according to globally tested, recognized and implemented strategies such as Essential Newborn Care (ENC), Infant & Young child feeding (IYCF), Integrated Management of Neonatal and Childhood Illnesses (IMNCH) neither demand neither any hi-fi techniques nor any expensive equipment. Specific trainings for the management of essential MNCH care enhance compliance to established care guidelines (25,26). Refresher trainings of skilled birth attendants for care of newborn at time of birth with safe delivery methods, prevention of hypothermia, newborn resuscitation, and promotion of breastfeeding for prevention of infections and malnutrition are key strategies for neonatal care. Capacity building of community health staff on these simple interventions can prevent neonatal deaths without costing much to both patients and government. Similarly, follow up and evaluation of trainings shall be reflected in the information systems of service delivery programmes. Despite inclusion of essential neonatal interventions in service delivery programmes, the landmark for promoting skilled birth care at community level is direly needed.

**Long Term Strategies:**

Social and cultural norms associated with malpractices for neonatal care can ideally be justified through behavior change. The use of social marketing may bring shift in attitudes and subsequently alternative behaviours for neonatal care (27). Social marketing can address target population from consumer’s view point to create demand for neonatal care in the society and sensitization of economic leader of household for better decision making. These strategies may include elevation of literacy rates, women empowerment both socially and economically, creating awareness about methods of birth spacing and family planning and essential care of mothers and neonates at home. The community cares include the adoption of improved care practices and appropriate care seeking for illness through social mobilization and empowerment of the individuals, thus creating a supportive environment for the healthy public policy. Social mobilization with participatory involvement of communities has shown reduction in maternal and neonatal mortality in many developing countries. This process inspires the community to mobilize, organize, explore, plan and implement MNCH issues with continuous evaluation and scaling up of essential MNCH packages (28).

The existing health infrastructure and human resource has capacity to adopt essential neonatal care packages at door steps with the help of the fully equipped and well trained health care workers. Through outreach services, skilled birth attendants working in close collaboration with LHWs
CONCLUSION

Looking deep into matter, it is evident that neonatal mortality is not due to any single factor and socioeconomic characteristics and factors related to health system play predominant role in determining health of the community. Revitalization of primary health and outreach services with emphasis on maternal and neonatal health is ultimate strategy to attain universal coverage. However multipronged set of short, medium and long term strategies are desired to address complexity of health systems and socioeconomic factors. These strategies shall target all aspects of health system involving both community and the health work force. Situation in Pakistan is alarming and demands immediate and long lasting strategies. Improvements in the service delivery of neonatal health specific programmes, consistent trainings of health workforce are the short and intermediate strategies followed by promotion of community participatory approaches. Promotion of these suggested short, medium and long term strategies is truly dependent upon the health finances actually allocated to manage the neonatal mortality. Social mobilization driven with strong sound political will is critically needed to scale up essential neonatal health packages. It is never late to be what you should be.

References:


Economic recession, terrorism and political upheaval mark the national landscape of Pakistan as 2009 nears to an end. As with the rest of the world, it struggles to achieve the targets set for the MDGs, including MDG 5 i.e. reducing maternal mortality by 3/4th from the 1990 figures (Pakistan Demographic Health Survey (PDHS) 2006 -7 reports a drop in Maternal Mortality Rate (MMR) to 260 from 350-500/100,000 live births) and achieving universal access to family planning (FP). Also, despite the fundamentalist upheaval in the country, it remains committed to achieving equality for women through revisiting and revising the Beijing Plan of Action (POA) and the Cairo '94 declaration. Its commitment to implement the Convention on the Elimination of all forms of Discrimination against Women (CEDAW) and the other international covenants aimed at achieving equality for women is visible in attempts to draft new legislation or revise previous one/s pertaining to women e.g. the domestic violence bill being tabled in the National Assembly this year. The commitment to equality of women is further affirmed by its ratification, in June 2009, of the resolution declaring maternal health as a violation of human rights.

And yet despite its numerous efforts, despite the formulation of laws and policies, despite its stated commitments, the change to a women-are-equal society, is agonizingly slow. The situation on the ground continues to be a story of dogged resistance, violated public and private spaces and persistence of old, pernicious and sinister cultural practices that overtly or covertly reinforce second class status for women. With regards to achieving women's equal status, the old adage “one step forward and two steps back” continues to play out in the larger socio-cultural landscape in Pakistan. Nowhere is this more evident than in the sphere of Sexual and Reproductive Health Rights (SRHR) of women; whether that be child/forced marriage, choice of partner, dowry at marriage, number and spacing of children, use or not of FP etc. Autonomy over ones body and its functions constitutes the basis of all SRHR. The ability to decide about ones own physical and reproductive behavior, in safety and with complete freedom, is fundamental to the enjoyment of SRHR. However, in the Pakistani cultural perspective, women's SRHR is closely tied with notions of the family name, honour and esteem with the result that great control is exercised over it by the latter any violations of the set cultural norms are commonly accompanied by severe punishment, disability and even death. This paper attempts to examine these outcomes, severe and other wise. Mention is also made of the laws and legislations pertaining to each (where applicable).

Harmful cultural practices and SRHR in Pakistan:
The cultural practices that violate or impinge on the SRHR of women in Pakistan can take a mild shape or results in severer manifestations e.g. death. In between these two forms, there are a whole range of morbidities including mental torture, acid throwing, dowry related stove bums unmet need for FP etc. that a woman may have to face. These human rights digressions are further unpacked below:

Son Preference:
The desire of parents to give birth to a son instead of a girl is called “son preference”. Many families/parents in Asia feel that son brings resources into the family whereas a girl absconds with them. In many circumstances the mother/woman giving birth to girls instead of sons, faces intense mental and emotional distress, domestic violence and even divorce. Many fathers feel sad and the birth of a female child is not celebrated joyously. With new technologies, this discrimination has reached new heights. Ultrasound can identify the sex of the fetus which can lead to selective feticide if it is a female fetus (1) although in Pakistan, evidence regarding this still scanty. However, fetal sex identification (2) is unmistakably being practiced in certain parts.

Son preference has many negative consequences for the girl child in a family including abandonment, nutritional deficiencies as preference is given to the son in food distribution within the household, lack of educational opportunities, delay in seeking medical help and the denial to make choices and make equal use of life's opportunities. The phenomenon of son preference is the said to be behind the 79 missing female sin south Asia and the reverse sex ratio in Pakistan (3).
Marriage with the Holy Book (Quran):
Many Feudal families with large land holdings, in order to save property division, declare that the woman/girl is "Married to the Quran". Quran is the sacred/Holy book of the Muslims and whilst this practice is completely un-Islamic, yet it is considered right and pure. In this way the woman is not allowed to marry and bear any children thus preventing any transfer of property to her.

Dowry violence:
Dowry, is a practice that is widely practiced in Sindh and Punjab province of Pakistan and consists of bringing money/gold, property or/and household goods by a bride to her husbands house at the time of marriage (thus closely linked to the initiation of regular sexual activity of a couple). It is transferred to the house of the in-laws before marriage and may even be displayed at the wedding ceremony. The practice of dowry is said to have started in order to prevent women claiming their rightful inheritance in the father's property and other assets. By denying women this right, or exerting severe family pressure on them to relinquish this right in favour of their brothers, the property and other assets are retained in the father's household and passed on to the sons. Thus dowry is a replacement of a women's right to inheritance and at times the only social custom transferring any resources to her. It needs to be mentioned that a woman has the right to inheritance both in Pakistani law and in Islam but customary practice overrides both.

The demand for a dowry (and its size) is made by the groom's family and, in some cases, especially in urban Pakistan, it is well known to have severe negative consequences for the bride if her family cannot fulfill these demands adequately. Many times, girls/women who are unable to bring a sufficient dowry, face severe consequences including domestic violence, mental stress, divorce and, sometimes, severe bodily harm (stove burning). But this picture is not universal, there are regional variations. The reporting of dowry related negative consequences have been low from rural Pakistan where the common practices of watta satta (almost 80 %), sister marriages and cross-cousin marriages are suspected to act as deterrent to dowry demand and protect very poor families from its negative outcomes. Although some of these practices may create issues of their own like child marriages in watta satta, yet they do play a role in reducing demand for a dowry by the groom's family. Also, the practice of village endogamy keeps women close to there natal families after marriage and provides protection in cases of violence after marriage at the hands of the husband or the in-laws (4).

Over the years, various laws curtailing the demand of a dowry have been enacted in Pakistan. These include the Dowry and Bridal Gifts (Restriction) Act (1976), the Dowry and Bridal Gifts (Restriction) Rules (1976) and the Dowry and Bridal Gifts (Restriction) Amendment Ordinance (1980). Regarding burning (stove burning etc), in 2001, S/174(a) was included in Criminal Procedure Code (Cr.P.C) to deal with these types of cases and Magistrate of first class was empowered to hold inquests (5). Any person, grievously injured by burns through fire, kerosene oil, acid, chemical or by any other way, come under this law. However the enforcement of any of these laws remains a challenge.

Early age marriage:
Any marriage that occurs before the age of 18 years for a male and 16 years for a female, is defined as a Child Marriage. Whilst various laws exist to combat child marriages in Pakistan, yet it remains a common practice to marry a girl after she attains puberty (although even before reaching puberty have been recorded and are practiced). It is identified with different names in different provinces; ‘vani’ in Punjab, ‘sang chati’ in Sindh, ‘swara’ in NWFP and in Baluchistan it is known as Ijai or Khasaniye soor. Other customs encouraging child marriages include Pait Likkhi (or written on the stomach) where 2 families seal the fate of their unborn children by declaring that once born they will get married to each other (6). Again this practice has regional variations and is far more common in Sindh province as compared to Punjab, especially northern Punjab (7).

The consequences of child marriage are devastating on the young girl. In instances, where she has been exchanged in order to settle a blood feud (swara etc.) she is considered not more than an unpaid slave. A child bride is usually illiterate, or has her education terminated suddenly, is cut off from family and friends and has restricted mobility. Frequently; a child marriage is contracted with a much older man and negotiations on sexual and reproductive health issues e.g. use of condom or discussion on family size etc. are well beyond the capacities of the child bride. Early childbearing not only results in increased maternal mortality, but also low birth weight babies. It is estimated that pregnancy related death is a leading cause of death for
girls between 15 and 19 years of age and the children born to an adolescent mother are usually premature, have low birth rate & poor mental and physical growth. The law has persistently made an attempt to discourage this practice and after partition the law dealing with child marriage, called the Child Marriage Restraint Act, 1929 was replaced by the Muslim Family Law Ordinance (MFLO) 1961. According to the Child Marriage Restraint Act, 1929, the minimum marriage age was 14 years for a female and 16 years for a male. In the MFLO, this was raised to 16 years for a female and 18 year for a male. Also, the MFLO made consent of both parties a prerequisite for marriage. Other laws having a bearing on child marriage were as follows:

- Dissolution of Muslim Marriage Act, 1939
- (West Pakistan) Muslim Personal Law (Shariat) Application Act, 1962
- (West Pakistan) Family Courts Act, 1964
- Dowry and Bridal Gifts (Restriction) Act, 1976
- Offence of Zina (Enforcement of Hudood) Ordinance, 1979
- Prohibition (Enforcement of Hudood) Order, 1979
- Offence of Qazf (Enforcement of Hudood) Order, 1979
- Law of Evidence (Qanun-e-Shahdat) Order 1984
- Enforcement of Sharia Act 1991 (8)

A child marriage contracted (generally child marriages were contracted as a result of watta satta (exchange marriages)) by the parents or guardian is not invalid and the responsible can be punished for violation of the said law; any infringement is punishable by law. Upon reaching adulthood, the spouses have the right to repudiate such a marriage. Child marriages cannot be registered according to the Muslim Family Laws. If a girl who is not yet 16 years of age is given in marriage by a parent or guardian, she can repudiate the marriage before the age of 18 provided the marriage has not been consummated.

**Domestic violence**
The issue of domestic violence (DV) is endemic all over the world. Called by different names - battered wife, abused wife etc. it is a phenomenon found globally. It has been recently recognized by the World Health Organization (WHO) as a public health issue and is said to be responsible for 11% of the MMR in the world. As in many other places, DV in Pakistan has been generally considered the domain of the private space and few facts and figures of DV are available. However, Pakistani Govt. in recognition of the fact that a crime is crime anywhere including when committed in/at a private space, felt duty bound to protect the woman and initiated the re-drafting of legislation to protect victims of this unacceptable tragic phenomenon.

Whilst there have been many provisions under the Pakistan Penal Code (PPC) which could (9) (the law makes no discrimination) be used to prosecute a family member for cruelty and violence, but due to the attitude that domestic violence is a personal affair and that the Police and the Law have no jurisdiction over it, cases and convictions for it have been few. Also the procedure involved in bringing about a conviction is so tedious and difficult, that it discourages an already battered wife, who is also most likely to be illiterate, lacking in confidence, poor and wary of new surroundings. Many civil society organizations’s (CSO) report that even if a woman wants to assert her rights, the method of actualizing them or approaching courts for redressel, prevent her from taking things further. For example in the case of DV, before going to the Police Station the woman should make sure that she gets a medical examination and obtains a medical report. If the doctor refuses to examine her, she should enter a report in the Police Station and ask the Medical Police Doctor to conduct an examination. The Police are duty bound towards this crime of violence and its entry is the same as for any other crime. Imagine asking a woman who (as described above) is not only illiterate, poor and lacks confidence but also has rarely left the confines of her house to complete all these procedures.

As evidenced above, the PPC failed to protect women from DV & to provide them justice. So it was the demand of women CSOs that DV be declared a separate specific crime. It is heartening to note that in 2009, the National Assembly passed the DV bill (moved by the Govt.) and it is to be presented before Senate for final ratification. Once done, the President will sign it into law. With this change, hopefully, the conviction of perpetrators of DV will become easier and simpler.

**Honour killings:**
Crimes committed in the name of protecting the honour of the family are called honour killings. The woman is suspected of immoral sexual conduct and society condones the taking of her life by a male relative (10). Whilst in Islam, a woman is given full autonomy over her marriage with marriage being considered a contract...
between two parties, with giving of meher to the woman, two witnesses and after complete consent of both to this contract, it is rarely exercised as such in Pakistan. The concept of control over their women folk in the overwhelmingly patriarchal system translates itself into different crimes at actual and assumed violations of set (sexual) traditional norms. Traditional norms dictate that the right of choice of marriage partner is delegated to the women's parents and guardian; that girls/women's consent at time of marriage is not necessary, underage marriages are acceptable, pre and extra marital sexual activity is considered a stain on the honour of the man/family and a rightful provocation to violence. Transgression of traditional norms leads to the so-called “honour crimes” & manifest themselves in a range of behaviour including abandonment, divorce, acid throwing/burning, severe bodily harm (cutting of nose or ears) and even murder.

Honour crimes are identified by different names in the different regions of Pakistan. Called Karo Kari in Sindh, Tor tora in Frontier province, Siyakari in Baluchistan, these crimes have permeated non-sexual spaces too and reared up their ugly head in urban centers also. In many instances, it has been noted that male family members may murder a female relative for reasons that have nothing to do with honor, but may claim that this is an honor killing to avoid prosecution. The real reason behind the murder of the women may be that the murderer wants to take revenge or extract a settlement from another man, or even to escape death sentence for murder (5).

These crimes have traditionally been tried under the local jirga or panchayet system, where the male elders of the area gather to decide the punishment of the perpetrator. As honour crimes are performed in the name of honour, the accused are let off by these para-legal bodies in the name of upholding patriarchal traditions. Many of these traditions have political support too (11).

When these crimes are tried in the judicial system, different laws apply. These laws were amended in January 2005 to make them more stringent, as follows:

Definition of honour killing was included under S/300 of the PPC.
- It was decided that honour killing would be dealt with and registered under S/302(a) and (b) instead of 302(c). The maximum sentence under S/302-c was 25 years of imprisonment, whilst there was no fixed minimum sentence which could even be one day of imprisonment. As most honour killing cases, where the murderer and the victim are in relationship either by blood or through marriage (and hence where the Qisas does not apply), were dealt under clause 302/c, the accused often escaped with a light sentence.
- Honour killing was included under the definition of “Fasad-fil-arz” under S/311, the minimum punishment of which was set at 10 years of imprisonment.
- An exchange of a woman in compensation for murder has been declared a crime under this amendment and carries a sentence of 3 to 10 years.

Ironically the year the Government of Pakistan introduced this amendment and took steps to stop this brutal custom, a leading newspaper The Daily Times reported 1,105 honour killings (5).

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2009.


Improving quality of care in hospitals: Is there a role for Performance Management?

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ABSTRACT

Hospitals are an important part of any health system. In Low Income Countries (LICs) lack of appropriate quality services at the Primary Health Care level encourages patients to proceed directly to the hospitals. Improving hospital performance can therefore maximize health benefits and improve health systems.

In order to provide the highest quality patient care and to follow through with performance improvement initiatives, hospitals have begun to apply performance management (PM) tools like TQM, Benchmarking, ISO 9000 certifications, Malcolm Baldrige National Quality Award criteria, European Foundation for Quality Management (EFQM) model and the Balanced Scorecard (BSC).

BSC is a multidimensional strategic framework with widespread use in high income countries (HICs). BSC has now been successfully implemented as a PM system to manage the delivery of primary health care services in Afghanistan. A recent hospital based case study conducted at an ISO certified hospital in Karachi also showed emerging signs of a positive change in units where BSC was successfully implemented.

Considering the successful application of BSC to assess and improve health service capacity, quality and service delivery it is worthwhile exploring the large scale use of PM tools in LIC hospital settings.

The organization, configuration and delivery of services impact on the performance of the overall health system. World Health Organization (WHO) has recommended that in order to provide optimal health services for its population, the performance of health care providers, especially hospital performance needs to be improved (1).

Hospitals are an important part of any health system: they provide complex curative care that depending on their capacity, acts as a first referral, secondary or last referral level curative care facility (2). They are centres for transfer of knowledge and skills; they constitute an essential source of information and power, play a direct role in training health care workers, provide necessary data to national health planners; and generally spend the major part of national health resources.

In High Income Countries (HICs), implementation of a functional and well managed Primary Health Care (PHC) system leads to the alteration in quantity and quality of diseases presenting to the hospitals. On the other hand if PHC is poorly functioning then the role of hospitals becomes all the more important. In Low Income Countries (LICs) patients mostly choose to bypass the PHC due to poor quality services and proceed directly to the hospitals. PHC utilization ranges from less than 10 visits per 10 persons per year in rural Egypt to 1.4 visits per person per year in rural Tanzania (3). Under these circumstances the bulk of the disease burden is shifted to the hospitals in LICs. Improving hospital performance can thus maximize health benefits and improve health systems.

Despite this emphasis there is paucity of good evidence regarding the wider role of hospitals in health systems. In LICs the hospital sector often consumes approximately half of health care budgets (4). There are approximately 8,500 big and small public and private hospitals in the Eastern Mediterranean region of WHO. Of these just over 50% are in the public sector. Almost two thirds of these hospitals are in the three countries Egypt, Pakistan and Iran (5). Small hospitals (district level) sit at the apex of the pyramid of primary care in many low-income country health systems. These and large urban teaching hospitals are primary referral sites in LICs. In addition teaching hospitals play a major part in establishing case management practices within a country.

In HICs, clinical outcomes for specific conditions including the risk of death is correlated with quality of hospital care. Reports of poorly organized triage and emergency care and mortality associated with non-standardized management has been reported from studies in LICs (6). Several priority areas for improving hospital services have thus been identified. Facilities need to be well organized and managed. Staff (doctors, nurses, others) need to be
specifically trained in guidelines for standard treatment so that inordinate delays in assessment and treatment of patients are avoided. Supplies of basic drugs need to be consistent.

Relevant principles based on international experience of performance measurement in hospitals suggest that (i) performance failures are more often a result of failures in systems and processes rather than of individual competence or knowledge (ii) performance assessment requires reliable methods of measurement against validated standards (iii) the reliability of indicators is determined primarily by the accuracy, completeness and timeliness of patient-based data collected at institutional level (iv) valid comparisons of performance between institutions demand rigorous standardization of assessment criteria and methods, especially if they are to be used between countries.

Performance management has been clearly driven by the continuing emphasis on accountability, effectiveness and efficiency. There are growing demands to ensure transparency, control and reduce variations in clinical practice. Without maintaining a standard level of care, the reputation of the hospital can be in jeopardy. Gauging performance can allow hospital governing boards to recognize areas of improvement. Dashboard metrics and report cards have emerged as viable options for evaluation of healthcare programmes and managerial practices (7).

To develop such dashboards, performance indicators need to be selected with consensus. Such indicators need to be translated into generalizable, standardized, interpretable and useable information for clinicians or health service managers in the form of performance management (PM) tools.

Several performance management tools for hospitals have been created to assist in this process. Total Quality Management (TQM) has had a significant impact on the approach to management in Western economies since its promotion as a concept in US in the 1980s. Between 1989 and 2000, numerous articles promoted the benefits of implementing TQM and associated quality management tools as a means to enhance growth, profitability, and customer satisfaction. In 1993, an international survey found TQM to be the third most commonly used tool (8). Besides TQM, some of the other management tools (commonly associated with TQM) have been widely accepted. It is to be noted that Benchmarking ranked second in 2003 and the number of ISO 9000 (International Organization for Standardization) certificates increased by 25 per cent from 2000 to 2001 and the number of ISO 1400 certifications increased by more than 60 per cent in the same period. In 2001, more than 800,000 copies of the Malcolm Baldrige National Quality Award criteria were distributed in the USA and the British Quality Foundation estimates that more than 20,000 organizations across Europe are using the European Foundation for Quality Management (EFQM) model and that the number is rising. Evidence suggests that successful application of quality management tools: Six Sigma, Malcolm Baldrige, EFQM excellence model, and ISO standards can be significantly strengthened through strategic control. An integration of these concepts when combined with a modern performance management tool such as the Balanced Scorecard (BSC) has the potential to strengthen strategic control and lead to successful quality management.

BSC is a multidimensional framework developed by Kaplan and Norton in 1992 for describing, implementing and managing strategy at all levels of an enterprise. It builds on the critical success factor (CSF) concept of a limited set of performance measures and reports indicators in four different perspectives with an equal weightage: (i) labeled learning and growth, (ii) internal processes, (iii) customer satisfaction, and (iv) financial performance. These indicators can be developed from the currently existing data systems and presented as one integrated report for decision-making. Metrics are usually measured on a monthly or quarterly frequency to evaluate intervention effectiveness, quality improvement, motivate change and move towards organizational excellence.

BSC application was initially limited to the private business sector in HICs but has since moved stealthily into industries from manufacturing, technology (computing, electronics, information) engineering, fast food (Wendy's), banking, hospitality, construction, automotive, telecommunications to healthcare including hospitals. In the new post industrial age, BSC is currently being used by many Fortune 500 and Fortune 1000 companies. In the both the industrial and health settings, BSC application resulted in improved business targets, clinical outcomes, cost reduction and better patient/client and staff satisfaction. A recent successful example in the LIC context emerged in Afghanistan. In 2004, the Ministry of Public Health (MOPH) Afghanistan designed a Basic Package of Health Services (BPHS) delivered primarily through contracting
mechanisms with nongovernmental organization (NGO) and MOPH implementing agencies (9). BSC was used as the performance system to manage the delivery of primary health care services and monitor the trends of 29 key performance indicators over a 5-year period. The BSC demonstrated that there was a progressive improvement in the national median scores scaled from 0100 in all six domains: patient and community satisfaction of services, financial, provider satisfaction; capacity for service provision; quality of services and overall vision for pro-poor and pro-female health services. A hospital based case study conducted in Karachi also showed emerging signs of a positive change in units where BSC was successfully implemented (10). This successful application of BSC to assess and improve health service capacity, quality and service delivery provides an opportunity for exploring large-scale use of BSC and other PM tools to improve quality of care in LIC hospital settings.

There is tide in the affairs of men,
Which taken at the flood, leads on to fortune;
Omitted, all the voyage of their life
Is bound in shallows and in miseries.
On such a full sea are we now afloat;
And we must take the current when it serves,
Or lose our ventures.

William Shakespeare, Julius Caesar

**AUTHOR CONTRIBUTION**

This commentary is based on author's PhD thesis at Karolinska Institutet Sweden and is solely based on author's research on the subject.

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Do we need to be skeptical about Millennium Development Goals?

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ABSTRACT

Background:
Pakistan still presents huge gaps in catering to the massive health needs of the large segment of its population living in rural and remote areas. High maternal mortality, neonatal, infant and child mortality, the population pressure on meager resources and ever increasing differentials in urban and rural, rich and poor and among genders is becoming noticeable. Poverty has compounded the toll of preventable illnesses, preventable malnutrition and preventable deaths. Where are gone the primary health care pledges?

Discussion:
Poverty and hunger has been increasing the toll of morbidity and mortality in Pakistan. The dearth of political commitment compounded by current economic crisis does not allow a respectable allocation to health, education and other social sector projects. The international economic trends and their repercussions on the national agendas are having serious implications for common man’s day to day living and public grievances are on the rise. Access to quality health care and education has become even more difficult. The efforts to revitalize the whole political economy in the country seem invisible or feeble at both government and development partners’ end. Having gone through devastated crisis of population displacement because of terrorism, earthquake and floods, government has shown minimal interest in seeking external debt relief which appears to be a pre-condition for at least keeping the hopes up for meeting the targets of MDGs. The pledges and assistance of the international community has not been sufficient to support the economy of Pakistan and in this scenario, the social sector has suffered the most.

Summary:
Local and national level efforts must continue to safeguard all the determinants of health, particularly in the developing and under-developed countries. There is an intense need of meaningful inter-sectoral collaboration and political and economic reforms in both government and within private sector to achieve the millennium goals directly related to health. What would be the post-MDGs new roadmap, given all the human rights violations and social exclusion across the developing countries? The picture becomes even more skeptic because the MDGs need not only to be attained, but also sustained for a longer term-post 2015.

Key words: Health system; Millennium Development Goals; Pakistan; Primary Health care.

BACKGROUND

With current development trends following the status quo, poverty will be eradicated from the face of this globe in about next 70 years. It is timely to review again the state of affairs in Pakistan in the context of latest data released by UNDP in its Human Development Report 2010, as we reached the 2/3rd mark to 2015. The inequalities in life expectancy, education, income, health, and more so quality of life have become even more evident (1). Only five more years to go before 2015, Pakistan still presents huge gaps in catering to the massive health needs of the large segment of its population living in rural and remote areas. Despite contracting, the primary health care is underutilized for a variety of reasons and does not integrate family planning as essential service in the package. Maternal mortality is incongruously high, contraceptive prevalence rate is just 30% with huge unmet family planning need of 25%, thus resulting into high fertility of more than six children among married women, eventually resulting into a high growth rate (1.9%). Two out of three deliveries still take place at home without any skilled
supervision (2). The differentials of urban and rural indicators make yet another chronicle which presents an uneven journey of Pakistan to achieve the MDGs (3). The pursuit to MDGs seems to be greatly influenced by the donors’ agenda, overemphasis in using the technologies and a great deal of woolgathering around the real social and economic determinants of health (4). The vision to revamp the whole political economy is Pakistan at both government and donors end is missing. What happened to health for all by 2000 slogan emerging from 1978 Alma Ata primary health care declaration, MDGs appear to be a déjà vu fairy-tale. Had we done justice in institutionalizing primary health care pledges, things would have been different today.

**DISCUSSION**

Poverty ought to be dealt with addressing to issues such as preventable illnesses, preventable malnutrition and preventable deaths. The dearth of political commitment compounded by current economic crisis does not allow a respectable allocation to health, education and other social sector projects. Would it be realistic and just to consider 2015 as the yardstick for achievement of MDGs for Pakistan? The millennium agenda actually missed most important factors that matter the most to the poorest of the poor i.e. security, respect, status, dignity, voice and livelihood vulnerability. These should have been the major ‘raison d’être’ of the MDGs. The GDP growth has severely affected because of war against terrorism, earthquake of 2005 and now recent floods in the country. Today, income and consumption issues pose serious challenges to the people of Pakistan where health care gets an allocation of 0.8% of GDP and share of education is around 3% only (5). Having gone through devastated crisis of population displacement because of terrorism, earthquake and floods, government has shown minimal interest in seeking external debt relief which appears to be a pre-condition for at least keeping the hopes up for meeting the targets of MDGs. Au contraire, government is obliged to follow the neo-liberal economic policies directed from the international development partners. These policies are having serious implications for common man’s day to day living and public grievances are on the rise. Access to quality health care and education has become even more difficult. Reforms call for change, but the current state of affairs lack the conditions to make real needed structural change. Reforms must seek to eradicate extreme poverty and hunger which is the millennium goal 1, but reliance seems to be more on aid and not on domestic economic growth which can truly help in eliminating poverty. Health sector reforms must entail financing reforms, organizational management reforms, governance reforms, and most importantly pro-poor reforms (6). Addressing the urgent needs of women and children—the vulnerable segments of population; implicitly will address issues embedded within the notions of equality, equity and human rights. There is an intense need of meaningful inter-sectoral collaboration and political and economic reforms in both government and within private sector to achieve the millennium goals directly related to health (7). Government’s commitment has to more than visible; having the passion is not enough, which more than often culminates in words and promises only. Besides all the gains and claims of revitalizing PHC in Pakistan, government’s step to contract basic health units to non-government sector could face criticism of neoliberal approach. This is not the development paradigm which was the actual vision of Alma Ata declaration. Likewise, non-governmental organizations which have always strived to fill the gaps in the social sector development agenda in Pakistan, need to go into a retreat to revise and remit their role and to be more proactively engaged in the health system strengthening, defining their role beyond service delivery and advocacy.

**SUMMARY**

What would be the post-MDGs new roadmap, given all the human rights violations and social exclusion across the developing countries? The picture becomes even more skeptic because the MDGs need not only to be attained, but also sustained long term-post 2015. Real life today is more complex than MDG slogans. For how many more decades, we will be the signatory of these high-flown objectives, over-ambitious target setting and ambiguous acronyms? This globalized world is increasingly shaped by powerful international and transnational forces, the action of many of which at times have appalling consequences on the social, political, economic and environmental factors that influence all MDGs. The millennium goal about international solidarity calls for global partnership for development. Therefore, local and national level efforts must continue to safeguard all the determinants of health, particularly in the developing and under-developed countries. Youth, our tomorrow’s dividend, must be
provided the enabling environment to unleash their potential. This potential can change the face of the world. However, it would be highly unethical to persuade or ask to change behaviors and transform practices to an empty stomach. Lastly, empowering people would be the prerequisite to ensure good governance and to hold government accountable for inescapable principles of equity, fairness, justice and right to shelter, food, education and health. This is the only key to take the country forward.

References


Prioritized Targeting or Mile Wide, Inch Thin: Time to Strategize Public Sector Health Investments

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The total health care expenditure in Pakistan is Rs 185 billion (USD 3.08 billion), of which the private sector spends Rs 121 million and public sector spends Rs 59.5 million (1). This spending which comes to around 2.2% of the GDP or around USD 19 per head annually is among the lowest in the region. The government's share of this whole is around 0.6-0.7% of the GDP (2) and has largely remained unchanged over the years due fiscal and political constraints.

Public and private sectors combine to provide a range of healthcare services in Pakistan. The public sector provides curative services from a large infrastructure of nearly 15,000 health facilities and around 100,000 lady health workers that provide outreach services at the doorstep, and is the near exclusive provider of preventive health services from its vertical health programs e.g. (MNCH, EPI, Tuberculosis etc.). The private sector while larger in scope provides almost exclusively curative services via many different types of private providers that include quack, hakims, homeopaths along with doctors and as can be expected, slightly favors a more urban and affluent clientele (Khan et al, under review).

Approximately 25% of the government's health budget on preventive programs (1) and accounts for nearly all preventive health investment, except around 5% of vaccination (3) and around 65% of family planning services (4) that are provided by the private sector. Thus, it appears that for many of the essential preventive services, the government is the only sole provider/ guarantor. On the other hand, the public sector contributes only a small fraction of curative health services. For example, only around 21% of all outpatient visits in 2008 happened in the public sector and that this contribution has hardly changed over the years (5,6). The one caveat is that the reliance on government services is somewhat higher in rural locations and among the poorest (Khan et al, under review).

Regardless of particular choices, some sort of strategic prioritization is desperately needed. Even by diverting nearly 50-60% of its funds to curative care, the government currently captures less than 10-21% of these services (1). On the other hand coverage of essential preventive services languishes. For example, full coverage with the modest current repertoire of vaccines has never exceeded 70% (6). Only around 14% of all eligible women receive any family planning services and only a third of these do so from a public sector source (4). Indeed, the contraceptive prevalence rate has risen by 0.5% annually in the past 50 years (4,8) with a quarter of women expressing an unmet need for contraception and the government's contribution of services remaining nearly static (4,9). Some of these issues relate to inefficiencies but largely it's a funding issue. There is just so much that can be done with the current USD 6 per capita annual funding in the public sector (1), particularly when a portion of even these meager
resources are squandered due to inefficiencies. Health has moved from simply managing ailments to providing health as a social good to being a social protection, justice and equity issue. While Pakistan continues to strive to meet these commitments to its people, it will have to take stock of what has been learned. A key lesson of the past 65 years is the meager improvement in virtually any health outcomes despite investments and the rather large infrastructure. The recent devolution of health to provinces presents a unique opportunity to re-address some of these reforms and providing some of these essential services. That said, none of these are any substitute for increasing funding for health to bring them at par with other poor countries in the region, but that will require doubling or tripling of health budgets and under the current political circumstances, this seems unlikely.

References

Power Politics: Researching the Informal Social Networks in Health Policy Analysis

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How are the policy actors interconnected with each other, and how might their decisions be influenced by others? These questions were of particular interest during my (first author) participation in the process for approval of the innovative Punjab Integrated Primary Health Care Model Program (PIPHCMP) in Pakistan, and again as we began our policy analysis of this program.

The importance of informal social networks is under-researched in health policy literature. In this paper, by using the ‘the process for approval of the PIPHCMP’ as a case study; we employ tools from social network studies and analyze the influence of informal social networks on decision-making processes.

The conceptual model of the PIPHCMP was developed by the National Commission for Human Development (NCHD), a semi-government organization, in 2005. This program was jointly implemented by the NCHD and the District Government in Gujrat District with funding from the Bill and Melinda Gates Foundation. After having been pilot tested at the district level, the provincial government considered the PIPHCMP for scaling up as an effective model for universal health coverage across 12 districts of the Punjab Province from 2008 (1, 2). This 4-year systems strengthening program required funding of US$ 42 million from the provincial government to benefit a population of 22.7 million (1). The program was designed as a tripartite institutional arrangement under the devolved governance system. The three partners included: the Provincial Health Department, 12 District Governments and the National Commission for Human Development (NCHD).

In the planning process, developing consensus between various levels of government was not an easy task. The entire process for approval was completed in one-and-half year from October 2006 to March 2008. The decision makers who participated in meetings and deliberations on the PIPHCMP belonged to the civil bureaucracy, public health sector and NCHD. Though they agreed in principle on the need for the intervention, there was a difference of opinion on the implementation modalities and also on the selection of the proposed health interventions. Should the PIPHCMP be implemented through the existing healthcare delivery apparatus or should the powers to implement be shared with the NCHD for technical assistance and guidance? Who should control the fund-flow mechanism: district governments, provincial health department or the NCHD? These questions formed the basis of debate on technical issues, but legal opinion was also needed to align the program implementation with the existing devolved governance system.

The discussions on the PIPHCMP were not just limited to formal proceedings and official interactions; there were other levers of power operating behind the scenes. There were visible shifts during this period where key players changed their positions. Clearly, policy change is a political process that requires lobbying to mobilize support and counter resistance. Extension of PHC services in the context of decentralization cannot be merely considered a set of technical health interventions alone, but demands a systems thinking approach that acknowledges stewards or policy actors’ central role in decision making (3).

How do we think health policies are made? The answer to this question has evolved over time. Until the mid 1990s, researchers largely focused on technical content and design of the health policies and therefore, neglected the role of actors and the processes involved in developing and implementing health policies (4). Since then, the policy analysts have emphasized the importance of integrating politics, process and power in health policy analyses. This paradigm shift has led to changed thinking about the roles played by actors, their coalitions and networks.

A policy network possesses a two-dimensional nature on account of two key elements: actors and their relations (5). Therefore, a two-stage analysis is required to understand the composition of a policy network. Firstly, an analysis of actors’ capabilities informs an understanding of the distribution of power in the network. Secondly, an analysis
of the mode of interaction among them gives insights on the degree of cooperation among these actors. The basic information on these structural elements can then be utilized to understand the impact of these policy networks in bringing about a policy change.

Policy making takes place in an environment with complex interactions among policy actors and policy institutions. The presence of an ‘epistemic community’ (a network of professionals with recognized expertise, competence and an authoritative claim to policy-relevant knowledge) greatly affects the policy making process (6). At the national level, these epistemic communities comprise of senior policy makers, high-placed government officials and politicians. Depending upon their experience, they have direct or indirect influence over the policy-making processes. In some settings, this power is direct and hierarchical through their own institutions and organizations. In others, the power and potential to influence policy actors and policy making is more widely diffused across the network.

It is not uncommon that policy actors working at national and sub-national levels are also sometimes connected to each other through informal social relationships. This ‘hidden’ structure is based on social interactions and informal networks and lies behind the more obvious structure of positional and institutional hierarchies. Given the potential contribution of these informal social relationships to the policy making process, it is interesting that this has not been substantially explored, especially in health policy studies (7). As health policy-making is of key importance in health systems strengthening interventions, it is essential to understand the nature of these ‘invisible’ networks, and to identify the levers of power and influence that exist in the policy environment.

Stakeholder analysis is a popular tool in health policy analysis. Having its roots in political and policy sciences and theories of management, it is capable of generating comprehensive information about various actors involved in the policy-making process (8, 9). It seeks to provide an objective review and analysis of the positions and influences of identified stakeholders in policy formulation and implementation processes, with a view to using these in shaping policy outcomes. This technique is useful for understanding the policy-making process and to assess the level of involvement and influence of the individuals, groups and organizations (10). However, the current approach is limited in terms of exploring the relationships between stakeholders, particularly the important informal aspects that contribute to alliances or opposition between stakeholders. Therefore, we employed tools and techniques from social network studies to extend the scope of the stakeholder analysis in understanding the formal as well as the informal social networks among actors and their potential influence on decision-making processes (7). Moreover, in our innovative approach we used the ‘event-based’ sampling strategy instead of commonly used ‘snowball’ sampling methodology (11, 12). For this purpose, we considered the entire process of program approval as a special event that set the boundaries of our research and helped in visualizing a complete picture of the social network (11).

Our findings showed that besides the public health sector, the involvement of other government departments like finance, law, planning and development, and public administration added complexities to decision-making processes. Acquiring support through forging synergies and maneuvering in response to resistance required building strategies and establishing appropriate linkages. The personal relationships within the superior bureaucracy and political leadership facilitated in lobbying the proposed PHC program on to the policy agenda, which could not have been achieved by the program designers alone. There was a clear differentiation between advice seeking for policy-related issues and for private matters. It was interesting to observe that while policy advice was sought from their seniors, generally, peers were preferred for discussing private matters. The participants preferred to discuss the technical issues related to program design with the program designers whereas rules and regulations were discussed with their immediate seniors. Developing linkages in the government machinery helped in building relations and to minimize time delays. The bureaucrats working in the semi-government sector used their connections in their parent government departments to overcome day-to-day procedural formalities and formal protocols which often slowed down decision-making processes. On the whole, their social networks were generally limited to their parent institutions. However, frequent contact in meetings led to some changes in interpersonal ties, creating new linkages across departments where limited communication previously prevailed.

Our analytic approach allows cutting through apparently rigid structures of formal relationships and identifies key
areas for building alliances to achieve favorable policy outcomes. It is known from experience that ensuring universal health coverage needs strong and consistent advocacy. For many countries, the process of attaining universal coverage has taken decades (13), and a clearer understanding of the networks that secure it and make it sustainable through political change is crucial. Thus, understanding both social-and policy-related linkages between key influential actors enables a more complex understanding of change, and how innovation emerges from a complex set of formal and informal relationships. Understandably, in developing countries like Pakistan, where rigid bureaucratic structure, strong hierarchical controls and professional and political elitism dominate, informal mechanisms play an important tactical role in cutting through these constraints to enable innovation. Understanding these mechanisms becomes critical for achieving lasting incremental change and creating an environment where effective health reform becomes possible. Developing new scientific methods to understand the policy-making environment is an important component of health system research. It serves to identify the levers of power and influence that exist in that environment and provides stepping stones for translating the political debate on universal health coverage into action-oriented health policies. Therefore, in the current push towards universal health coverage, the value of research that exposes the networks that are integral to the success of new initiatives cannot be underestimated.

References:
About the PJPH
The Pakistan Journal of Public Health is a peer reviewed national journal published quarterly by the Health Services Academy, Islamabad, Pakistan. It will soon be abstracted/indexed both nationally and internationally. The JPPHA is an open access journal which will benefit all those working in the field of public health in Pakistan.

Scope of the Journal
The PJPH accepts articles from both national and international contributors with a special emphasis on research that will have a direct impact on the practice of public health in Pakistan and around the world.

The types of articles accepted include original articles, review articles and short communications. Special features will include opinion pieces, letters to the editor, education forum and students corner.

Editorial Process
The PJPH will only publish articles that have not appeared anywhere else. The review process will entail an initial review for short listing articles on the basis of relevance to public health issues, meeting minimum technical/scientific standards, having a significant public health message.

Articles passing the initial short listing process will be subjected to a double blind review by at least 2 reviewers of renowned status in public health field, nationally and internationally. They will assess the articles on the basis of objectives, methodology, scientific rigor and conclusions drawn. Any queries generated during this process will be forwarded to the author/s for correction or revision by the journal editor/s.

When all outstanding issues in the article have been addressed/corrected, the final document will be subjected to a light edit for grammar, punctuation and language. The authors will be given up to a week to approve the final document for printing.

Authorship Criteria
Authorship of the articles can be claimed by those researchers who have made a major contribution in the study. Acceptable contribution would include, design & concept of study, data gathering, interpretation & analysis, article writing, proofing and/or corrections.

Authors would also be expected to declare any possible conflicts of interest as well as the degree of contribution to the above mentioned criteria by each of the authors of the study.

The sequence of authors once submitted will not be changed without the express consent of all authors. Furthermore, the number of authors for each study should reflect the scope of work. National level, multi site studies or those having multiple collaborating partners could have more authors than ones dealing with limited scope.

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This section would require info on any registering bodies for current RCTs/clinical trials.

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The manuscripts should be prepared in accordance with the ICJME guidelines for manuscript submission. Before submitting a manuscript, contributors are requested to check for the latest instructions available.
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Articles will have to be formatted to fit PJPH criteria as follows:

1. Original research
Abstract
Abstracts of original research article should be prepared with a structured format i.e. Introduction/background, objectives,
methods, results and discussion/conclusion. Authors must include 4-6 key words. Review article, Case report and other require a short, unstructured abstract. Commentaries do not require abstract. Abstract should not exceed the word limit of 300 words for original articles and the total word count not more than 3000 words, excluding the abstract and references.

Introduction
This section should include the purpose of the article. The rationale for the study or observation should be summarized; only strictly pertinent references should be cited; the subject should not be extensively reviewed. Data or conclusions from the work being reported should not be presented.

Methods
This section must include the type of study, study population, study area, study duration, details of developing tools for data collection, pre-testing, data collection, plan of analysis, ethical considerations and any other detail deemed necessary to be submitted to support the researchers’ work. References to established methods should be given, including statistical methods; references and brief descriptions for methods that have been published but are not well known should be provided; new or substantially modified methods should be described, giving reasons for using them, and evaluating their limitations.

Results
These should be presented in a logical sequence in the text, tables, and illustrations. All the data in the tables or illustrations should not be repeated in the text; only important observations should be emphasized or summarized.

Tables and figures
Tables and figures should be kept to a minimum. Tables must be comprehensible without reference to the text. References should not be cited in the tables. Authors should indicate at approximately what point in the text the table should appear. Figures, graphs, drawings etc. should not be over complex and must be intelligible when reduced in size for printing. They should be on separate sheets, numbered and with legends.

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