Design for Rural Community Regarding Health

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Abstract. Pakistan is a developing country and it has lot of issues but health is its one of the leading issue because up to 67% of its population is currently in rural areas. Rural community of Pakistan is badly affected by this issue. Allocation and distribution of resources in the Pakistan is un equal because of this inequality, rural community suffers a lot regarding serious health issues and facing many dangerous diseases. Both developed and developing countries report geographically skewed distribution of healthcare professionals, favoring urban and wealthy areas, despite the fact that people in rural communities are experiencing many health related problems. To prevent from this big problem govt. should distribute the resources equally and provide the necessary staff and skilled professionals to rural community and introduce such a system which helps them to decrease the healthcare issues. We are going to propose a design for the rural community which helps them to facilitate with first aid in emergency problems and give them relief. It can help them in a cases like maternity etc.

Keywords: Facilities, Maternity, Resources, Health, Govt. Expenditures, Rural Areas, Pakistan, Problems.

1 Introduction

Health plays the productive role in determining the human capital. A better health improves the productivity of labor force. In all over the world Pakistan considered as developing country and the population of Pakistan is almost according to the research of 2008 is 130 million. Pakistan facing many critical problems in which two problems are inversely proportional to each other one is illiteracy and other is high fertility rate and according to economic scenario Pakistan's economic graph go down and down with the passage of time. The ratio of maternity mortality is 340/100,000 live births as well as infant maternity rate is 86/1000 live birth. In the case of health women and children are the most UN protected segment against maternity attack. The statistics about mortality which is given above is the worst statistics in the world. The cause of mortality in the present age of medical is much avoided.

Deaths because of pregnancy of women who lived in Pakistan are 1 in 80 compared to 1 in 61 in developing countries statistics as a whole in 40.85 in industrial countries. A high maternal issue in Pakistan is due to absence of maternal health data. The accurate measurement regarding maternal mortality is quiet difficult in rural

community. Sindh is most populous province of Pakistan after Punjab. "Majority of population of Sindh lived in rural areas". [1]in this province high fertility rate with addition to high mortality rate show the bad governance and dismal picture of health in the province. "The women in this area which are pregnant 40 percent of them suffer from anemia" [2] and also facing hemorrhagic complications in pregnant women in rural areas of Sindh. There is need of most effective and efficient strategies regarding health care in rural area of Pakistan in case of maternity.

"Women were asked whether there were any deaths due to obstetric complications in the household in the last three years.61% women received their antenatal care in their last pregnancy"[3]

According to the Economic survey of Pakistan in (2005/06), on health sector Government of Pakistan spent their 0.75% of GDP to make their population more healthy and sturdy. In this way numerous numbers of programs are run regarding health facilities in Pakistani rural areas. Many agencies and NGOs spent their time to help needy people and try to reduce poverty but they also don't have many facilities to entertained people. [4]

First aid precautions about this disease also play a vital role to save the lives of rural community. Government spends its expenditures in health sector just 0.7% per year but it's not enough for massive populated areas in developed country like Pakistan. The education sector also infected from this budget. [5]

2   Literature Review

Although about 68 percent of Pakistan's population lives in rural areas. While some small groups and UN bodies observe health problems in Pakistan, most national NGOs, the government and the media do not give special attention to the rural area's health problems. The health care system in Pakistan [11] is beset with numerous problems like structural fragmentation, gender insensitivity, resource scarcity, inefficiency and lack of accessibility and utilization.

2.1   Problem Identification

The issue which is faced by rural community is lack of emergency maternity health care centers. The survey was conducted from May 2010 to December 2011. Survey based on 314,623 women at 16 facilities in Punjab, Sindh and Islamabad, who were studied to determine the occurrence and management of maternal and neonatal problems.. There were 94 near-miss maternal mortality cases and 38 maternal deaths, giving a maternal mortality ratio of 299 per 100,000 births.

Much of this stems from the low incidence of skilled birth attendance and high fertility rates. What is more alarming is that the rate of skilled birth attendance a proxy for maternal mortality has actually declined from 48 percent in 2004–06 to 41 percent in 2008/09 (Pakistan, Planning Commission, 2010). The situation is even worse in rural areas where the maternal mortality rate is almost double that of urban areas: 319 per 100,000 in rural areas and 175 per 100,000 in urban areas (Pakistan, Planning Commission, 2010). [6]

The report suggested four main reasons of this in which two of them related to accessibility i.e.

- Delay in transporting patient to primary or secondary health care centers.
- The delay occurs at health care centers due to unavailability of professional medical staff.
- Another important aspect related to this is the absence of decision maker.
- Due to strong cultural and religious norms; traveling of rural women is very limited and often household head is responsible for distant travel decisions.

2.2   Policies Emphasizing Health Care Services in Pakistan

Pakistan is in the middle of epidemiological transition where almost 40 percent of total burden of disease (BOD) is accounted for by infectious/communicable diseases. These include diarrheal diseases, acute respiratory infections, malaria, tuberculosis, hepatitis B&C, and immunisable childhood diseases. Another 12 percent is due to reproductive health problems. Nutritional deficiencies particularly iron deficiency anemia, Vitamin-A deficiency, iodine deficiency disorders account for further 6 percent of the total BOD.In Pakistan, the Statistics of dying under the age of five child mortality is at 101 per 1,000 live births with a life expectancy of 62 years. Table below indicates some comparative health indicators. The major problem in Pakistan seemed by some specialist in reference of child mortality. In 2004 on immunization of children under 12 month age shows that 33% didn't get immunization against measles and 20% didn't get immunization against tuberculosis, diphtheria, pertussis and tetanus.[6] According to age wise the expectation of life in Pakistan are given in the table below:

There are numerous number of policies held for providing better health care service in Pakistan. Including Millennium Development Goals (MDG), Poverty Reduction Strategy Papers and National Health Policy.

Table 1. Source: WHO (2006)*Calculated by NIPS (2006)

	Total Population(000)	Life Expectancy at Birth(Years) Both Sexes	Probability of Dying (per1000) underage 5 years Both Sexes	1 Year Old Fully Immunized (%) Against Measles	Against TB	Population Growth Rate(%) 1994-2004	Physicians (per100 ,000 People) 1990-2004
Bangladesh	139,215	62	77	95	77	2.0	26
Bhutan	2,116	63	80	92	87	2.2	5
China	1,315,409	72	31	94	84	0.8	106
India	1,087,124	62	85	73	56	1.7	60
Nepal	26,591	61	76	85	73	2.3	21
Pakistan	154,794	62	101	80	67	1.9*	74
Sri-Lanka	20,570	71	14	99	96	1.0	55

2.3   Health Millennium Development Goals(2015)

Pakistan has adopted 16 targets and 37 indicators from 18 targets and 48 indictors fixed by the UN Millennium Declaration for achieving eight millennium goals. Pakistan is the only country which was signed to UN Millennium Development Goals (MDG), 2000-2015. Three of the eight MDGs emphasize directly to health sector with four targets and sixteen indicators. The MDGs include: Reducing Child Mortality (1 target, 6 indicators); Improving Maternal Health (1 target, 5 indicators) and Combating HIV/AIDS, Malaria and Other Diseases (2 targets, 5 indicators). [6]

Table 2. Reduce by Three-quarters, between 1990 and 2015, the Maternal *Mortality Rate*

Indicators	Definitions
Maternal mortality ratio	No. of mothers dying due to complications ofpregnancy and delivery per 100,000 live births
Proportion of births attended by skilled birthattendants	Proportion of deliveries attended by skilledhealth personnel (MOs, midwives, LHVs)
Contraceptive prevalence rate	Proportion of eligible couples for family planning programs using one of the contraceptive methods
Total fertility rate	Average number of children a woman delivered during her reproductive age
Proportion of women 15-49 years who had given birth during last 3 years and made at least one antenatal care consultation	Proportion of women (15-49) who deliveredduring the last 3 years and received at least one antenatal care during their pregnancy period from either public/private care providers

2.4   Access to Health Care Centers in Rural Areas

The major challenges in Pakistan rural areas facing by Pakistan underlining are maternal mortality and morbidity. Progress underlining proportion of women (15-49) who gave birth in last 3 years and are attended by the skilled birth attendants is somewhat satisfactory; however the maternal mortality is unsatisfactory.

There has been negative improvement in the mortality ratio for example Out of 100,000 live births 350 mothers died due to complications of pregnancy in 2000-2001 and it reaches 400 deaths in 2004-2005 whereas MDG targets is 140 in decade time. On the other hand, targets for skilled birth attendants and antenatal care are on track but still need efforts to achieve the MDG targets in Pakistan. This major factor of increasing in deaths is due to unavailability of gynecologist doctors whether its male/female, in rural areas and also there is no first aid maternal health care centers. The proper treatment of pregnant women during the period of pregnancy would reduce the complications facing by them.
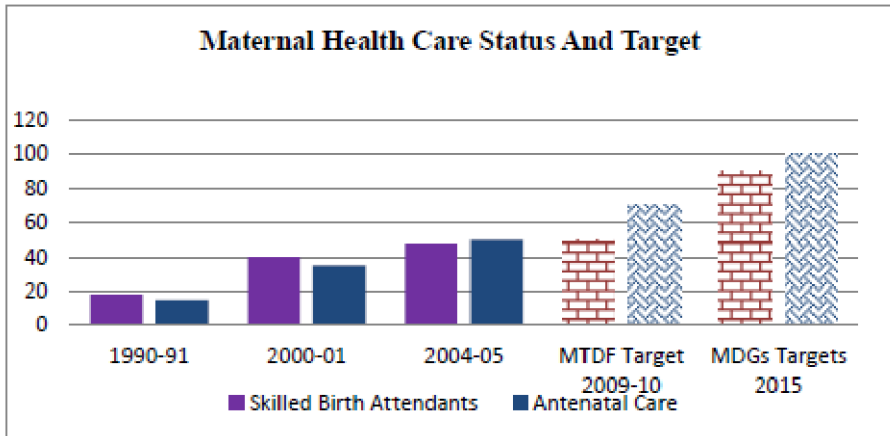
Fig. 1. Fig **2.4**. : Source: PMDGR (2005). Chart shows that a year wise birth attendants.

3   Research Focus

The research will conduct from different divisions of Pakistan like Gujrat, Gujranwa-la, Lahore and Rawalpindi etc. The reason to choose these areas is that the villages are more effective by the deaths of maternal cases. The overall data will be collected from taking interviews. The interviews will be taken from households and in some areas where women don't allow to come outside for interviews, their we will take inter-views from men.

3.1   Survey

We will choose our suspects randomly from different interviewers from above men-tioned districts. There will be 15 villages which are estimated by us to collect data. We will take interview from 10 villagers from total population of per village. The Table below shows the criteria for collecting data about specific maternal issues.

Table 3. Total population and collected data

Survey	Population Size	Total number of Villages
Interview (villagers)	10* 15 = 150	15

According to above table it is assume that from 15 villages there are 150 interviews will be taken from different people related from different fields of life. In interviews

we will discuss face to face every small a minor issues which are facing by rural community.

4   Purposed Solution

The main part of our study is to purpose the best solution for the villagers to reduce the rate of deaths due to maternity cases. From different researches about health and education in held in Pakistani rural areas it is assume that maximum part of the rural community is un-educated. So by take into account the rate of illiteracy amongst the rural community in Pakistan we want to purpose the icon base design. In this form of design there will following important things present.

- Mobile Application (ICON based application).
- Information System (For technical Person).
- Ambulance Availability for emergency situations

4.1   Propose Framework

The following Design for an application and IS will be made.

Framework
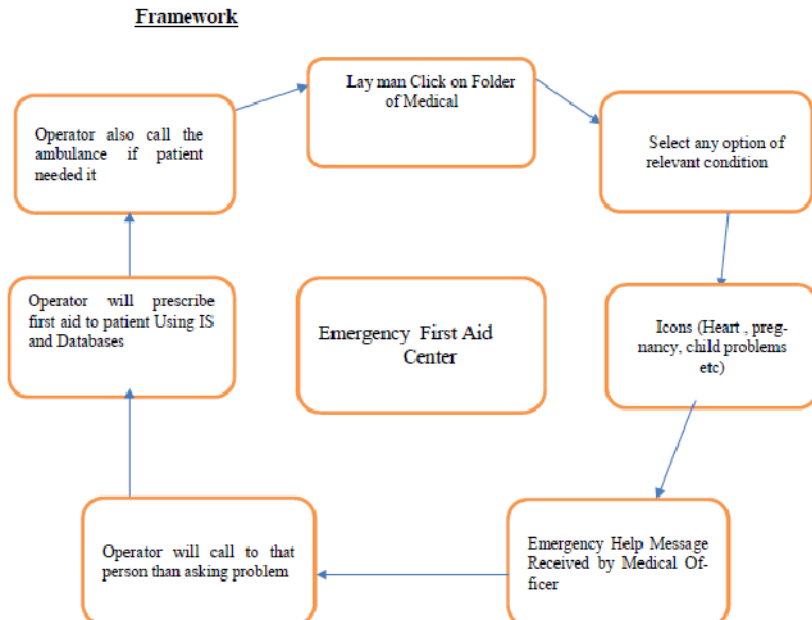
We want to introduce new design for rural community[13][14] to facilitate them. This design will help them in emergency situations when they need first aid to survive. Our design will facilitate them by providing emergency medical offices located in every Union Council. As the design [12][15][16] discuss above in a figure that describes each and every point very clear. First we want to make an application for Symbian cells because according to the reference of research in Pakistani rural areas there are 75% people using Nokia Symbian cell phones to communicate with each other.

5   Expected Results

The results according to our point of view will be 100% chances of decrease of death rate and educate rural community in the form of first Aid precautions in a related emergency situation.
   The following points will give benefits to people, that are as follow.

- Fast communication between a layman and a technical person.
- Time saving
- Give help to fast decision making
- Helpful for first aid precautions
- Will receive a best service on early basis.
- No delay of transport
- Free of cost transport availability.
- Free of cost First Aid Precautionary measures.

6   Discussion

During study we realized the main reason that why most of the women in rural areas of Pakistan died when they were in the stage of giving birth to baby. The big reason was their husbands didn't allow them to operate from male gynecologist doctors that is caused by the strong cultural [17] or religious norms present in that particular area. So that's why most of the women died during the last moment of giving birth due to unavailability of lady doctors in the rural areas of Pakistan.
   Another reason of sudden deaths of pregnant women is their men take a long time to make decision to go to hospitals for treatment. Decision making was not taken on the early basis, the decision making delayed due to much illiteracy amongst the people. That reason also makes big hurdles to save the lives of women. During interviews some respondents also reveals the major issues like delay of transport, men don't allow their women to go to hospitals, also they didn't trust on doctors for treatment, that issues were caused due to lack of facilities like transport, ignorance percentage in rural areas etc.
   Following chart reveals, the permission is necessary for women for going to hospitals from different family members.

Table 4. Person's Permission for going to hospitals in case of Emergency situations. (n=1176)

Persons	%
Husbands	55
Mother-In-Laws	25
If husbands are not presents then Father-In-Laws/Brother-In-Laws	10
Permission is not necessary for going to health care centers	10

With the reference of above discussion it is concluded that Pakistan has a high rate of deaths in maternal cases. There is no attention of Government and other public or private NGO's which working for health care centers in Pakistan's rural areas.

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