Reproductive Health in Pakistan: Evidence and Future Directions

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Introduction

Reproductive Health (RH) and specifically women's reproductive health has been elevated in the consciousness and action agenda of governments and donor agencies throughout the world in part through the International Conference on Population and Development resource allocation, program priorities, service provision, utilization and, of course, research.At the start of the new millennium, information available regarding the reproductive health of Pakistani women and men portray an unsatisfactory picture. Pakistan is the second largest Muslim state and the seventh most populated country of the world with a growth rate of 2.6%1. The majority of the 130.58 million people continue to live in rural areas (67.5%). It is estimated that only about 28% of Pakistanis women are literate with rural female literacy rates ranging from 3% to 9%2.
The maternal mortality ratio (MMR) officially quoted for Pakistan is 340 per 100,000 Iivebirths3. However, small scale hospital and community-based studies report much higher MMRs. The average MMRs as reported by 20 public hospitals in Pakistan for the year 1989 - 1990, collated by the Society of Obstetricians and Gynecologists of Pakistan, was 740 per 100,000 livebirths4,5. Community-based studies from selected clusters in the provinces of Sindh, Balochistan and NWFP (1988-1992) ranged from 673 in the remote hilly regions of Balochistan to 281 in the urban squatter settlements of Karachi6.The tragedy regarding the status of maternal health in Pakistan is reflected in the evidence from Jinnah Postgraduate Medical Center (JPMC), a large public health tertiary hospital in Karachi, where the MMRs during the past twenty years has not changed -710 for the period 198 1-90; 883 for the period 199l-99[7]. In fact, the MMR for the period 1960 - 69 was about the same as for 199 l-99[8]. A cautionary note is strongly advocated regarding evaluating the burden of maternal ill health based on these statistics. The official MMR is the WHO revised estimates based on a modeling strategy with its inherent biases; hospital studies include only those who have sought treatment and the community based studies is small scale and not representative of the province or country. However, the secular trends reported from JPMC are significant and merit serious consideration by policy makers, program managers, donor agencies and advocacy groups (Table 1).

Table 1. Maternal Health Indicators - Maternal Mortality Ratio and Perinatal.

Mortality Rate	
Maternal Mortality Ratio per 100,000 livebirths	
National[1]	340
Hospital-based[2,3]	740
Community-based[4]	756 - 281
Hospital	
1960 - 1969[5]	899*
1981 - 1990[6]	710
1991 - 1999[6]	883
Perinatal Mortality Rates per 1,000 births	
Hospital[7]	92
Community[8,9]	54 - 67

* per 100,000 total births

Sources

1. Unicef, State of the World's Children, 2000.
2. Jafarey SN. Maternal mortality in hospitals: In: Unicef, ed. Maternal and Infant Mortality: Policy and Interventions. Report of an International Workshop at Aga Khan University, Karachi. Unicef, 1994, pp 47-51.
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4. Fikree FF, Midhet F, Sadruddin S, et al. Maternal mortality in different Pakistani sites: ratios, clinical causes and determinants. Acta Obstet. Gynaecol. Scand. 1997; 76: 637-645.
5. Jafarey SN. Review of Maternal Mortality over 10 year period at JPMC. Karachi J. Pak. Med. Assoc, 1972; 22-26
6. National Committee on Maternal Health Newsletter, June 2000.
7. Zaidi S. The role of the obstetrician in reducing perinatal mortality. In: Zaidi, S. ed. Maternal and Perinatal Health in Pakistan. Proceedings of Asia Oceanic Federation of Obstetrics and Gynecology Workshop, Karachi. TWEL Publishers, 1992; pp 115-120.
8. Fikree FF, Gray RH. Demographic survey of the level and determinants of perinatal mortality in Karachi, Pakistan. Pediatric. Perinatal Epidemiol. 1996; 10: 86-96.
9. Jalil F, Lindblad BS, Hanson LA, et al. Early child health in Lahore, Pakistan. IX Perinatal Events. Acta Paediatr. Suppl. 1993; 390: 95-107.

A suggested proxy indicator for maternal mortality is perinatal mortality, as the main underlying factors for both (nonnal pregnancy and a clean and safe delivery) are essentially the same. The data for perinatal mortality is scantier than that for maternal mortality. A recently concluded multi-center hospital study reported a perinatal mortality rate of 92 per 1,000 births (about 72% stillbirths)[9]. Small-scale community based studies from Karachi[10] and Lahore[11] report much lower rates varying from 54.1 to 67 per 1,000 births respectively. However, what is most disturbing is that despite the lack of

information on newborn health, data from JPMC illustrates that, for the past 25 years, there has been no change in the perinatal mortality rate - at 109 per 1,000 births - reminiscent of the stagnant maternal mortality ratio mentioned earlier[12,13] (Table 1). For example, the coverage of antenatal care is 30%, birth attended by skilled health staff is 18% and postpartum care is 11%14-16. However, we lack information on the quality of the services provided, the competency of the service providers or the category of "skilled health staff'. Nevertheless, we do know that tetanus toxoid coverage, at 30% among women giving birth, is one of the lowest in the world[14] and that nearly 45% of pregnant and lactating women are anemic with 10% being severely anemic[14] (Table 2).

Table 2. Maternal Health Indicators - Antenatal, Natal and Postpartum.

	Percentage
Antenatal Care	30
Deliveries conducted at home	82
Births attended by skilled health staff	18
Postpartum care	11
Maternal tetanus toxoid coverage among women giving birth	30
Pregnant and lactating women anemic	45
severe	10

Sources

1. Pakistan Integrated Health Survey, 1996-97.
2. World Bank -World Development Indicators, 2000.
3. National Institute of Population Studies, 1992.

The maternal health indicators so far discussed do not examine the social and community paradigms surrounding emergency obstetric complications and death. Community and hospital based studies highlighted delayed referrals as a key risk factor for maternal mortality in urban Karachi[17,18]. Delays resulting from inappropriate maternal services (2 1%), access to health services (36%) and decision-making at the family level (34%) contributed largely to the deaths of 150 pregnant or recently delivered women who were brought dead to JPMC[18]. Not surprisingly, most of these women resided in communities within a distance of 5-10 kilometers from this hospital18. Results from couples residing in the catchment population for JPMC illustrate the low level of awareness regarding emergency obstetric complications, though women were generally more aware than men.

Among the four major obstetric complications, men and women were most aware of excessive bleeding during the postpartum period (22% women and 15% men) though less than 4% of women and men were aware that convulsions during antenatal, delivery or postpartum was an emergency obstetric complication. (Table 3).

Table 3. Percentage Distribution of Knowledge regarding Emergency Obstetric Complications.

	Women (n=396)	Men (n=363)
Antenatal		
Spotting > 24 hours	2	1
Frank bleeding	13	10
Convulsions	3	1
Natal		
Labor > 18 hours	3	4
Labor > 12 hours	10	3
Excessive bleeding	16	13
PROM*	1	1
Convulsions	3	3
Postpartum		
Puerperal sepsis	7	2
Excessive bleeding	22	15
Convulsions	4	1

*PROM = Premature rupture of membranes

Source

1. Fikree FF, Jafarey SN, Rahbar MH, et al. Prevalence, Perceptions and Health Seeking Behavior for Obstetric Complications, Korangi 8, Karachi, Pakistan-Final Report. Karachi. Pakistan: The Aga Khan University, 1998.

However, if women reported that they experienced any of these complications, most of them considered it serious and sought care (Table 4).

Table 4. Percentage Distribution of Obstetric Morbidity reported by 396 Women for their Last Pregnancy.

	Perceived Morbidity	Perceived Serious
Antepartum		
Vaginal Bleeding	9	94
Convulsions	2	88
Natal		
Labor > 18 hours	8	90
Excessive bleeding		
Before birth	5	83
After birth	11	86
Convulsions	1	100.00
Postpartum		
High fever	20	86
Foul vaginal discharge	16	69
Abdominal pain	32	78
Convulsions	2	100

Source

2. Fikree FF, Jafarcy SN, Rahbar MH, et al. Prevalence, Perceptions and Health Seeking Behavior for Obstetric Complications, Korangi 8, Karachi, Pakistan-Final Report. Karachi. Pakistan: The Aga Khan University, 1998.

By and large, the major reasons for not seeking care, irrespective of the phase of pregnancy and delivery were "lack of perception of severity of the complication and accessibility to care in the context of costs, distance and unavailability of child care" though surprisingly, "poor services" were not reported as a reason for not seeking care[19]. Cross-sectional studies on maternal morbidity based on women's reports measure only symptoms and not the conditions and suffers from recall bias and women's perception of morbidity. A condition that is not perceived or is not perceived as morbid is not reported. Hence, self-reports cannot be used to diagnose clinically verifiable conditions and self-reports cannot provide accurate clinical estimates of prevalence or incidence.

Nevertheless, self-reports can be a valuable tool in determining the gross burden of obstetric morbidity from the women's perspective and assessing their unmet need for accessing appropriate health services.

A contraceptive prevalence rate of 24% and a 46% unmet need[20], one of the highest in the world, suggests investigating whether induced abortions contribute to the demand for fewer and better spaced children. In addition, the contribution of induced abortions to maternal mortality, hospital admissions and public health expenditures also needs to be evaluated when discussing the reproductive health status of Pakistani women. Data from hospital and community based surveys mention that induced abortions contribute anywhere between 4.7% - 12.6% of all maternal deaths[21,22] and 2.3% of gynecological admissions[23]. Moreover, among these gynecological admissions about 6% were due to injuries to the viscera[23] requiring not only lengthy hospital stay and heavy public health expenditures but, significantly from the woman's perspective, a poor quality of life in the future. National estimates for induced abortions report a prevalence of 0.7%24. However, data from a recently concluded community-based study in the squatter settlements of Karachi mentions an induced abortion rate of 25.5 per 1,000 women 15 - 49 years with a post-abortion complication rate reported of nearly 70%25. Hospital admissions for longer than 24 hours were reported by nearly 20% of women[25]. This information on level and mortality and morbidity consequences of opting for an induced abortion to terminate an unwanted/undesired pregnancy, though unrepresentative for Pakistan, nevertheless merits serious deliberations, as it is indicative not only of the contribution of unsafe abortions to a Pakistani woman's quality of life and public health expenditures but more pertinently to Pakistan's family planning program (Table 5).

Table 5. Induced Abortion - Mortality and Morbidity.

	Percentage
Maternal Mortality due to Induced Abortions	
Hospital[1,2]	2 - 12
Community[3]	5.2
Hospital Reports[4]	
2.3% of all gynecological admissions were due to induced abortions	
5.5% of induced abortion admissions due to injuries to viscera	
National[5]	
Induced Abortion	0.7
Community[6]	
Induced Abortion Rate	25.5 per 1,000 women 15 - 49 yrs.
Post-abortion complication	69
Hospital admissions >24 hours	20

Sources

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2. World Health Organization. Unsafe Abortion. Global and regional estimates of incidence of and mortality due to unsafe abortion with a listing of available country data. Third edition. WHO/RHT/MSM/97.16, 1998.
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The information we have on other aspects of reproductive health is sparse and generally based on hospital records though recently there has been a concerted effort to set-up a cancer registry in a district in Karachi. There is no national level data for reproductive tract infections or cancer among others. Even reports from multi-center, nationally representative hospital based surveys, as has been mentioned for maternal and perinatal mortality, are lacking. However what we do know is indicative that the levels, especially

of sexually transmitted infections (STIs) and HIV/AIDs, are low at the moment. For example, in a community based survey conducted in Karachi, the prevalence of gonorrhea or chiamydia was under one percent though trichomonas and candidiasis was much higher (5% and 6% respectively)[26] while among commercial sex workers the prevalence of all STIs was about 25%[27]. Our statistics for HIV/AIDS is limited though indicative of the current low prevalence of HIV/AIDS. In recently concluded surveys among high risk groups the prevalence of HIV/AIDS among truck drivers was 0%, IV drug users 1% and among the clientele of STI clinics ranged from 0.2% to 4%28 (Table 6).

Table 6. Reproductive Tract Infections and HIV/AIDS.

STI Prevalence in Community[1]	**Percentage**
Syphilis	0.2
Gonorrhea	0.9
Chlamydia	0.2
Trichomonas	5.0
Candidiasis	6.0
HIV/AIDS[2,3]	
Pregnant women	0.6
STD clinic patients	0.2 - 4
IV drug users	1
Truck drivers	0
Commercial Sex Workers	0.7 - 1.2

Sources

1. Sohani S, Tapal KM, Anwar T, et al. Prevalence of sexually transmitted diseases in women of low income communities in Karachi. Presented at the Annual Symposium Jinnah Post Graduate Medical Center, 1997.
2. UNAIDS and WHO. Epidemiological Fact Sheet on HIV/AIDS and sexually transmitted infections, 2000.
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With regards to reproductive tract cancers, the most common female cancer is breast

cancer (peak incidence around 30 - 39 years) with ovarian cancer being the third most common[29,30]. Although lung cancer is the most common male cancer reported, prostate cancer has been reported as the fourth leading male cancer but only for Northern Pakistan[29,31]. However, most seek care late suggesting that community awareness of signs and symptoms of reproductive tract cancers is low.

There are several community-based studies regarding other reproductive health illnesses, based on women's reports of perceived morbidity. Validation of the relationships between self-reported symptoms and signs and clinically verifiable conditions are poor. However, regardless of the imprecise correspondence between the reported signs and symptoms and medically verifiable conditions, women's perception of gynecological morbidity is significant in its own right, because it determines health seeking behavior. Reproductive health services are the most cost-effective health intervention for adults as, especially for women, nearly one quarter of the disease burden is reproductive health. For example, infertility (primary 3.5% and secondary 1 8.4%)[32], pelvic inflammatory disease (8.8% - 12.8%)[33,34] and uterine prolapse- not only reflects the burden of disease among Pakistani women but is indicative of the priority needs for allocation of resources for reproductive health services (Table 7).

Table 7. Prevalence of Specific Reproductive Morbidity.

	Percentage
Infertility[1]	
Primary	3.5
Secondary	18.4
Pelvic inflammatory disease[2,3]	8.8 - 12.8
Urinary tract infections[2,3]	5.4 - 17.0
Uterine prolapse[2,3]	8.7 - 19.1
Menstrual irregularities[2,3]	15 - 45.3
Dyspareunia[2]	5

Sources

1. Qureshi MS, Khan T. Infertility. In: Pakistan Population Research 1980-1990. National Research Institute of Fertility Control, Karachi. pp. 222-231.
2. Bhurt AW, Bozdar NM, Fikree FF. Prevalence and risk factors of presumptive urinary tract infection in a rural community. J. College of Physicians Surgeons, Pak. 2000; 10: 16-19.
3. Sajan F, Fikree FF. Perceived gynecological morbidity among young ever-married women living in squatter settlements of Karachi, Pakistan. J. Pak. Med. Assoc., 1999; 49: 92-97.

Men and women do seek care, from public and private facilities and concerns regarding

quality of care offered by health professionals have been raised in several fora. In a small study (n203) conducted among clients visiting public and private facilities, quality of care was investigated in terms of unsafe needle practices[35]. The majority of adult women and men sought care for minor symptoms but largely unwarranted about 81% of them received an injection for that clinic visit, most often using an unsterilized needle and syringe. This is not surprising but what was most relevant and needs to be highlighted is that the prevalence of Hepatitis C and B among those who agreed to a blood test (n=135) was 44% and 19% respectively[35]. The morbidity and mortality associated with Hepatitis C and B will, of course, impinge on the quality of life of those already infected but what is more essential is recognizing that preventing unsafe needle practices will prevent the transmission of other blood borne pathogens especially HIV and Hepatitis C among adult men and women (Table 8).

Table 8. Quality of Care Provided by Primary Health Care Providers.

Primary symptoms for clinic visit:	Percentage
Generalized muscular and joint aches	22
Abdominal mass and discomfort	20
Acute febrile illnes	18
Respiratory tract infections	13
Received injections	81
Women twice as likely to report receiving more than 10 injections per year	
Hepatitis B	
Overall	19
Men	20
Women	19
Hepatitis C	
Overall	44
Men	32
Women	51

*Sample size for survey: n=203

+Sample size for Laboratory investigations: n=135

Source

1. Khan AJ, Luby SP, Fikree FF, et al. Unsafe injections and the transmission of hepatitis B and C in a periurban community in Pakistan. Bull. World Health Org., 2000; 78: 956-963.

Domestic violence is recognized internationally as a significant social and public health concern as well as a human rights issue. For Pakistan, despite the sensitivity surrounding discussing such issues, there is now emerging a growing awareness of the enormity of violence against women and its effect on the health and social fabric of women and their families. Data from rural Punjab[36] and Karachi[37] indicate that the prevalence of domestic violence, as reported by women, is approximately 35%. However, men perceive domestic violence as a common problem and nearly 28% of them confess to physically abusing their wives in the past year with nearly 49% reporting that they had ever physically abused their wives[38]. What is most disturbing is that nearly half perceived that males had the "right" to physically abuse their spouses. This attitude, albeit from a small sample in Karachi (n=176), nevertheless is indicative of the dire need to raise social awareness regarding violence against women[38](Table 9).

Table 9. Domestic Violence - Prevalence and Perceptions.

Reported by Women	Percentage
Rural Punjab[1]	34.6
Karachi[2]	34.0
Reported by Men[3]	
Common problem	74
Physical abuse	
Past year	28
Ever	49

Sources

1. Sathar Z, Kazi S. Women's autonomy, livelihood and fertility: A study of rural Punjab. Islamabad, Pakistan, PIDE, 1997.
2. Fikree FF, Bhatti LI. Domestic violence and health of Pakistani women. Intl. J. of Gynecol. and Obstet. 1999; 65:197-203.
3. Hussain T, Aurangzeb I, Bhally H, et al. Male perceptions on domestic violence. Paper presented at the Third Annual National Symposium, Aga Khan University, Karachi, Pakistan, 1996.

Physiological changes though none for the introduction of sex education in schools for the 11 - 16 year olds (n=133 boys and 177 girls)[39] (Table 10).

Table 10. Adolescent Reproductive Health.

Knowledge regarding:	Percentage
Menstruation	
Boys	70
Girl	93
Nocturnal emissions	
Boys	76
Girls	30
Approval of sex education introduced in schools for age group 11 - 16	
Boys	70
Girls	79
Adolescent Violence	
Physical abuse	
Boys	66
Girls	28
Sexual abuse	
Boys	14
Girls	19

*Sample size for Boys: n = 133

+Sample size for Girls: n = 177

Source

1. Pakistan Voluntary Health and Nutrition Association and Raasta Development Consultants. Adolescent Reproductive and Sexual Health: An exploration of trends in Pakistan, 2000.

Moreover, fears of detrimental health effects consequent to masturbation abound among young men (18 -21 years) (n=46) vary from erectile dysfunction (30.4%) to physical (67.4%) and sexual weakness (10.9%)a . This is compounded by reports that

approximately 76% and 44% of young males (n=46) reveal feelings of guilt associated with masturbation and nocturnal emissions respectively. Though 93.5% of the 46 young males report ever experiencing nocturnal emissions, only 4.3% mention that nocturnal emissions is a normal physiological processa (Table 11).

Table 11. Adolescent Reproductive Health.

Masturbation	Percentage
Ever	80.4
Past month	41.3
Perceived consequence	
Erectile dysfunction	30.4
Physical illness	28.3
Physical weakness	67.4
Sexual weakness	10.9
Relief from sexual desire	4.3
Feelings of Guilt associated with	
Masturbation	76.1
Nocturnal Emissions	43.5

*Sample size: n= 46

Source

1. Qidwai W. Personal written communication.

Moreover, boys and girls (n133 and 177 respectively) report not only high prevalence for physical abuse (66% and 28% respectively) but also sexual abuse (14% and 19% respectively)[39](Table 10). Though these data reflect small-scale unrepresentative studies, but nevertheless signifies the urgent need for due attention being paid to adolescents.

Discussion

The evidence presented on the reproductive health status of Pakistani men and women, although limited in scope and quality, nevertheless highlights the inadequate progress made in improving the health of Pakistani men and women in the past fifty years. Recognizing insufficient nationally representative data on the elements of reproductive health, the question we need to ask ourselves as public health specialists, scientists, obstetricians/gynecologists, neonatologists, policy makers, donor community and program managers is "Where should we go from here?" Invest our scarce resources in establishing a benchmark for the current status of reproductive health and then move ahead or debate on what our current priorities in reproductive health are and move ahead right now.

The reality is that perfect data - in scope and quality - are unattainable and the need to utilize the information currently available is obvious. The reality is also that actions to improve outcomes along the reproductive health continuum must go ahead even if the data are inadequate. What must however accompany these realities is a continuing push for more representative data and awareness among data users of the significant uncertainties in data quality. Hence, evidence to improve our understanding of the reproductive health status (scope and quality) need not delay sensible and reasonable decisions on policy and program priorities.

The next set of questions to discuss is whether our programmatic interventions at a provincial/national level is evidence-based with small scale district-level operations research to demonstrate the reproductive health impact of culturally relevant innovative strategies or move ahead with provincial/national level strategies based on popular, "good ideas" interventions such as continuing training of traditional birth attendants for reducing maternal mortality. There is no easy answer to challenging the perceived wisdom of the "good ideas" strategy but choices need to be made. While there are justifiable, scientific reasons for wanting to know the impact of interventions, the reality is that these operations research intervention studies take time and the outcome may not be what we had anticipated. However, the evidence from other countries may be sufficient to deliberate programmatic choices. Thus, resource re-allocation can proceed; services can be modified, extended and improved simultaneously with innovative operations research intervention strategies being implemented.

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