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Fertility preferences among pregnant women and associated factors for fertility preferences in Karachi, Pakistan

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Objective: To determine fertility preferences and its associated factors among pregnant women in squatter settlements of Karachi, Pakistan.

Methodology: This was a cross-sectional survey conducted in 10 urban squatter settlements of Karachi from Nov 2014 to Jan 2015 using multistage cluster sampling. A total of 5,140 married women in the reproductive age group of 15-49 years were interviewed using a structured questionnaire. The fundamental themes included in the questionnaire were socio-demographic information, pregnancy history, knowledge, attitude and practices regarding family planning and reasons if not using any methods. The outcome of interest was pregnant women with a desire to have more children. In this, analysis was done on subsample comprising of total 612 pregnant women.

Results: Out of total currently pregnant women, 64% of women desire for more children in future. Future desire of more children was more likely among women who never attended school (aOR: 1.34 95%CI: 1.1-1.9), never used any family planning method (aOR: 3.267 95%CI:2.286-4.671), people with increasing wealth quintiles (aOR: 2.098, 95%CI 1.233-3.571), decreasing with increasing number of male children (aOR: 0.294, 95%CI: 0.169-0.513).

Conclusion: Further desire to have more children among pregnant women is associated with increasing wealth status, and among those who never attended school. With increasing number of sons, the desire is decreased. So there is need to design an effective intervention to change the behavior of women towards increasing family size.

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Cigarette smoking is associated with epigenetic instability in human sperm

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Smoking is one of the most common risk factor for reproductive health worldwide, and it has been proven to be associated with decreased fertility and poor semen quality. During human spermatogenesis, transition of histone to protamine and the remodeling of methylation of whole genome in mature sperm are two critical important epigenetic processes. However, whether cigarette smoke exposure could affect them is largely unknown. In our recent study, we demonstrated that both histones to protamine transition and methylation in sperm from heavy smoking men had significantly compared to their nonsmoking counterparts in an ethnic Han Chinese population in South China. The abnormalities of sperm histone replacement in heavy smokers were found to be closely correlated with sperm motility, viability, concentration, counts, and cotinine levels. The ratios of protamine 1 to protamine 2 mRNA expressions also significantly increased in heavy smokers and in TM3 cells treated with cigarette smoke condensate. In addition, heavy smokers had significantly increased global methylation in sperm DNA than nonsmokers. Further microarray data demonstrated that methylation status had significantly altered in many loci from sperm DNA of heavy smokers, including many imprinting genes and functional genes. These results are being validated in a large group of smoking population. Overall, our study demonstrated that smoking could lead to sperm DNA epigenetic instability by increasing the abnormalities of histone to protamine transition, causing alteration of protamine mRNA expression in mature sperm, and changing methylation profiling in human sperm DNA. These epigenetic alterations associated with smoking may potentially affect human fertilization, embryo development and offspring growth.

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