Evaluation of an Innovative Model for the Early Detection and Referral of Diabetes and Diabetic Retinopathy in Pakistan

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BACKGROUND

More than seven million people have been diagnosed with Diabetes Mellitus (DM) in Pakistan (6.9% of the population), and a further three million remain undiagnosed. Diabetic Retinopathy (DR) – a complication of DM that affects the blood vessels of the retina in the eye – is the leading cause of avoidable blindness in the working age population worldwide.

Eye care services for people at risk of DR in Pakistan are limited. Existing services have poor accessibility and are not integrated into primary health care. Accessibility and uptake of services is also inequitable; it is often particularly difficult for women to use health services unless these are culturally acceptable and accessible in practice.

A health system strengthening program for DM and DR was piloted in collaboration with local government in Pakistan between 2013 and 2016.

AIMS

The key objective of the program was to increase the proportion of the target population accessing services, with a particular focus on increased service uptake among women. The evaluation assessed the extent to which these objectives were achieved.

METHODS

The program built the capacity of the primary health care level to detect and manage DM and DR patients, and to refer cases to secondary level for management. Lady Health Workers (LHWs), an existing cadre of primary health workers, were trained to conduct risk assessments for unknown cases of DM at the community level and to improve suitability and access to services for women with DM. Other healthcare staff at primary health level (e.g. medical officers) also received training.

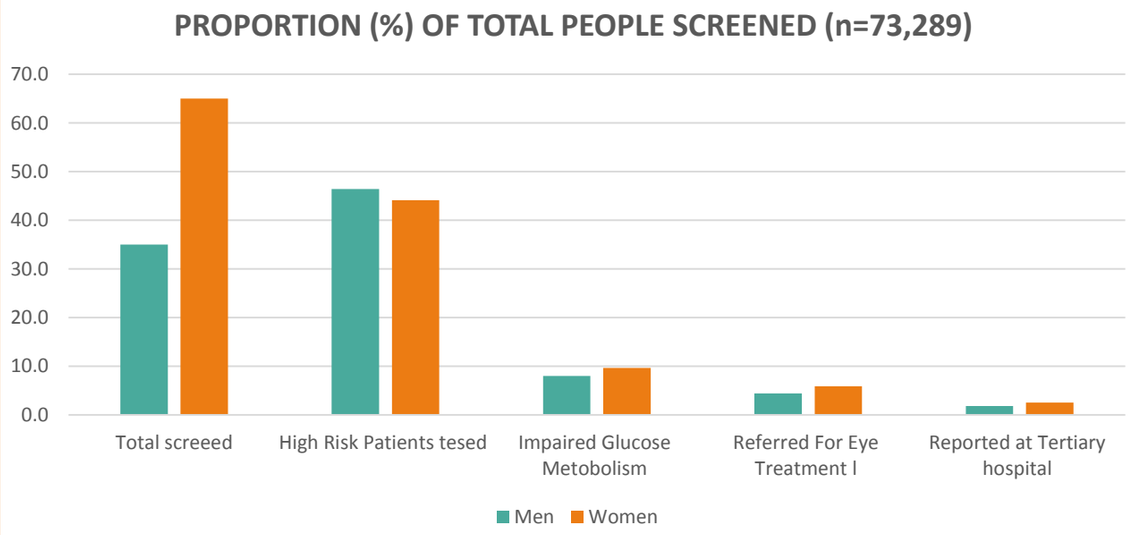
Secondary analysis of program monitoring data was performed to determine the prevalence of impaired glucose metabolism (a proxy for DM) among individuals screened in three districts of Pakistan, to assess the impact of the program on number of people assessed for DM/DR and referred on for further care, and to assess whether this differed for men and women.

RESULTS

A total of 73,289 individuals were assessed for risk of DM. Almost half (45%) were found to be at high risk of developing the disease, and 9.1% were found to have impaired glucose metabolism. Of these, more than half (59.3%) were referred for further treatment for diabetic eye disease. However, only less than half (42.6%) of those referred to tertiary hospitals presented for treatment.

Compared to the first year of the project, the number of people assessed for DM risk more than doubled (227% increase) in year two, before plateauing and then decreasing in years three and four.

Notably, the number of individuals assessed by LHW increased the most in year two compared to all other modes of assessment. Almost two thirds (63.9%) of individuals assessed were women. LHWs were also significantly more likely to refer women than men ($p<0.001$). No difference was observed in the proportion of men and women who were referred to tertiary hospital for DR and later presented for treatment ($p=0.450$).



DISCUSSION

Findings from the evaluation suggest that shifting assessment of DM and DR at the primary level is effective in increasing access to services, particularly among women. This promotes more timely identification of cases and individuals at risk, and reduces stress on the otherwise overburdened secondary and tertiary health settings.

For the first time LHW and the primary health care level were successfully engaged in screening for DM and DR in Pakistan. Focusing on training LHWs was also a successful strategy to increase suitability and equitable access to service for women. Future project should focus on strengthening referral pathways to promote improved presentation rates for treatment at the tertiary care level.

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