Case Study – Kerala Diabetes Prevention Program

1. What is the implementation challenge that K-DPP is addressing?

2. How big is the diabetes problem in India and the world?

3. What are some of the components of the program and how is the program being delivered?

4. At what level(s) is the program being evaluated?

5. What factors might suggest future program sustainability, spread and/or scalability?
Show video clip and then answer questions
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KDPP Study design

Random sample of 60 polling booths

Potential participants selected from electoral roll

Step 1: Invite 80 eligible participants

Step 2: Informed consent & home screening with IDRS

Step 3: Mobile clinic

Included: Those at high risk of diabetes

Exclude if illiterate or pre-existing illness

Exclude if IDRS < 60

Exclude if OGTT ≥ 11.1 mmol/L, FPG ≥ 7.0

Refer to health professional

Health Education Intervention (30 polling booth approx. 660 people)

Lifestyle Intervention (30 polling booth approx. 660 people)

12 month follow up

12 month follow up

24 month follow up

24 month follow up
Lifestyle change in Kerala, India: needs assessment and planning for a community-based diabetes prevention trial

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Abstract

Background: Type 2 Diabetes Mellitus (T2DM) has become a major public health challenge in India. Factors relevant to the development and implementation of diabetes prevention programmes in resource-constrained countries, such as India, have been under-studied. The purpose of this study is to describe the findings from research aimed at Informing the development and evaluation of a Diabetes Prevention Programme in Kerala, India (K-DPP).

Methods: Data were collected from three main sources: (1) a systematic review of key research literature; (2) a review of relevant policy documents; and (3) focus groups conducted among individuals with a high risk of progressing to diabetes. The key findings were then triangulated and synthesised.

Results: Prevalence of risk factors for diabetes is very high and increasing in Kerala. This situation is largely attributable to rapid changes in the lifestyle of people living in this state of India. The findings from the systematic review and focus groups identified many environmental and personal determinants of these unhealthy lifestyle changes, including: less than ideal accessibility to and availability of health services; cultural values and norms; optimistic bias and other misconceptions related to risk; and low expectations regarding one's ability to make lifestyle changes in order to influence health and disease outcomes. On the other hand, there are existing intervention trials conducted in India which suggests that risk reduction is possible. These programmes utilise multi-level strategies including mass media, as well as strategies to enhance community and individual empowerment. India's national programme for the prevention and control of major non-communicable diseases (NCD) also provide a supportive environment for further community-based efforts to prevent diabetes.

Conclusion: These findings provide strong support for undertaking more research into the conduct of community-based diabetes prevention in the rural areas of Kerala. We aim to develop, implement and evaluate a group-based peer support programme that will address cultural and family determinants of lifestyle risks, including family decision-making regarding adoption of healthy dietary and physical activity patterns. Furthermore, we believe that this approach will be feasible, acceptable and effective in these communities with the potential for scale-up in other parts of India.

Keywords: Diabetes mellitus, Real world intervention, Diabetes prevention, Pre-diabetes

Understand local context
Intervention targets

• Dietary
  • Reduction of sugar-containing food items
  • Reduction of sugar containing beverages
  • Increase in fruit and vegetable consumption
  • Reduction of fatty food items
  • Reduction of rice portion size

• Physical activity
  • Increase amount of physical activity
  • Reduce sitting time
  • Increase amount of incidental exercise

• Alcohol use- no consumption

• Tobacco use- no use
Putting it all together ….. Model for behavior change

- Identify existing lifestyle behaviours link with diabetes risk/self-care and need for change
- Identify personal resources and social support
- Identify “willingness” for specific behaviour changes
- Formulate willingness into achievable and measurable goals
- Link with personal and family goals

(Re-)Assess situation

- Individual embedded in family, peer group, neighborhood, community

Plan

- Plan for action with linkages to community & family resources and support: Where, when, how, with whom?
- Establish collective commitment for action + feedback from family, peers etc

Follow-up and maintenance

- Review goal progress
- Get positive feedback to encourage and increase motivation
- Learn from lapses

Identify links btw behaviour and positive outcomes
Intervention design for KDPP in India

Peer leaders
- Two x 2-days training
- Peer leader workbook
- Ongoing support

12 group-based and peer-led small group sessions

Participants
- Two Diabetes Prevention Education Sessions (DPES) by experts
- Participant handbook
- Health information booklet

Contents:
1. Healthy diet
2. Physical activity
3. Tobacco use
4. Alcohol use
5. Stress
Intervention components

**K-DPP Intervention components**

- Peer leaders
  - Two x 2-days group facilitation training delivered by the K-DPP intervention team
  - Peer leader workbook
  - Ongoing support from the K-DPP intervention team
  - Ongoing support from a local resource person

- Participants
  - 11 small group sessions led by trained peer leaders
  - Two diabetes prevention education sessions by the expert panel members
  - Participant handbook, participant workbook and health education booklet

**K-DPP Outcomes**

**Peer leader and Peer group outcomes**
1. Increased provision of emotional and social support to/within the group
2. Increased utilization of community resources by the group
3. Increased linkages to social support networks of the group

**Participant outcomes**

1. **Behavioural outcomes**
   - Improved diet
   - Increased physical activity
   - Reduced tobacco use
   - Reduced alcohol consumption

2. **Psychosocial outcomes**
   - Reduced stress
   - Improved quality of life

3. **Clinical outcomes**
   - Reduced blood pressure
   - Reduced waist circumference
   - Reduced body fat

4. **Biochemical outcomes**
   - Reduced incidence of diabetes
   - Improved glycaemic control
   - Improved lipid profile
KDPP Intervention flow – An Adaptive Intervention and Delivery