Team T2D: Empowering people living with Type 2 Diabetes

Implementation and Evaluation of the Combined RBWH and QUT Health Clinics Model of Care for Patients with Type 2 Diabetes

Adrienne Young: Research Co-ordinator Nutrition and Dietetics RBWH
Jane Musial: Acting Team Leader Nutrition and Dietetics RBWH
Wing Yan Leung (Bonnie): Research Assistant, Nutrition & Dietetics, QUT
Robert Mullins: Senior Lecturer, Director of Clinical Services
School of Exercise and Nutrition Sciences, Faculty of Health QUT

What is the clinical problem?

T2DM

Highly prevalent: One million (4.4%) Australians with T2DM.
Costly: $1.5 billion - T2DM accounts for 60% of expenditure.
High demand for health services

Long wait lists: Only 54% of Category 2 patients seen within recommended timeframes.
No regular input from exercise physiologist, optometry or podiatry.

What is the Evidence?

NHMRC ‘National Evidence Based Guidelines for Patient Education in T2DM’ (2009)
• All patients with T2DM should be referred for diabetes education (Grade A)
• Education should be structured, interactive and delivered in either groups or individually (Grade A)

ADA ‘Standards of Medical Care in Diabetes’ (2017)
• All patients receive diabetes self-management education (Grade B)
• Lifestyle education include nutrition therapy and physical activity (Grade B)
• All patients should have an annual foot and eye examination (Grade B)
Randomised controlled trials meeting below criteria:

- Participants: adults with T2DM
- Intervention: group-based T2DM education; at least 1 x 1hr session
- Control: routine treatment, waiting list, or no intervention
- Outcomes: @ 6 months, 12 months and 2+ years
  - Clinical: HbA1c, fasting blood glucose
  - Lifestyle: knowledge, self management skills
  - Psychosocial: QoL, empowerment/self-efficacy

What is the evidence?
Comprehensive search: five databases, reference lists, experts
Quality assessed using Cochrane Risk of Bias checklist
Mostly moderate risk of bias
Undertaken independently by two reviewers
Test for heterogeneity, sensitivity analysis where results inconsistent
Sub-group analyses
  - incl. who delivered group, how many sessions/duration, follow-up etc
  - attendance rates less than 70%
  - baseline HbA1c 7% or higher
Sensitivity analysis
  - incl. sample size, risk of bias, drop-out

What is the evidence?
Total of 21 studies (n=2833) included in the review
What is the evidence?

• Can results be applied to the local population?
  • Most studies done in developed countries in US and Europe
  • Average age 60 years, 40% male, diagnosis 7 years, HbA1c 8%

• Are the benefits worth the harms and costs?
  • Cost of delivering intervention – expensive, finite hospital resources
  • Benefits – improved patient and health service outcomes

Proposed Innovation

A new multidisciplinary diabetes outpatient model of care, the ‘Combined RBWH-QUT Health Clinics Diabetes Model of Care’, was developed and implemented as a pilot at QUT Health Clinics in 2016

• 10 week multidisciplinary program for patients referred to RBWH Diabetes Service to be delivered at QUT Health Clinics by RBWH and QUT staff and QUT students
• New partnership between RBWH and Queensland University of Technology (QUT) Health Clinics.

Implementation Phase

Assess current services & problem
• Wait list data
• Other alternative pathways for outpatient models
• Existing services mapped and wide investigation of models of care for T2DM
• Literature
• Patient surveys

Consultation and planning
• QUT consulted
• Steering Committee established
• Model of care designed
• Memorandum of Understanding between RBWH and QUT for pilot

Pilot program
• 10 patients invited
• Delivered by RBWH and QUT staff and students: dietitian, exercise phys, diabetes educator, psychology, optometry, podiatry.
• 10 week group program
  – 1: Individual assessments
  – 2-8: 1hr exercise class + 1hr education
  – 9: Individual assessments
  – 10: MDT case conference to determine follow-up
Implementation Phase

- Co-ordinated MOT lifestyle program first approach - remove from hospital wait list
- Combined clinic between university and hospital
- Communication and data sharing
- Staff changes at QUT
- Consistent and accurate data collection
- Student involvement from a range of disciplines
- Inter-disciplinary learning for students and staff
- Allied Health and nursing led

Barriers

- Inter-disciplinary learning for students and staff
- Allied Health and nursing led
- Communication and data sharing
- Staff changes at QUT
- Consistent and accurate data collection
- Student involvement from a range of disciplines
- Combined clinic between university and hospital

Strengths/innovative strategies

- Inter-disciplinary learning for students and staff
- Allied Health and nursing led
- Communication and data sharing
- Staff changes at QUT
- Consistent and accurate data collection
- Student involvement from a range of disciplines
- Combined clinic between university and hospital

Evaluation Plan

Process outcomes:
- Program attendance and completion
- Patient satisfaction: Short Assessment of Patient Satisfaction (SAPS)
- Staff & student satisfaction: surveys modified from QUT Insight surveys & semi-structured interviews
- Student learning: Readiness for Inter-professional Learning Scale (RIPLS)

Clinical: completion of course, 3 and 12 months post completion
- Anthropometric, biochemistry and clinical data
- Physical activity: Active Australia Survey, six minute walk test, 30 second sit to stand test, and grip strength
- Dietary intake: fat and fibre behaviour questionnaire
- QoL: PAID (Problem Areas in Diabetes)

RBWH Diabetes Clinic Waiting List: number of Cat 2 and 3 patients
Outcomes of Pilot Program

Process outcomes:
Patients (n=9):
• 13 patients approached; with three declined and one dropped out
• High attendance and completion: 90% completed the program (attended ≥ 7 sessions)
• High satisfaction (n=9)
  • mean score = 22.8 out of 28, range = 20 – 26
  • lower “access and facilities” scores suggested patients want longer program duration

Outcomes of Pilot Program

Process outcomes:
Students (n=19):
• Survey:
  • High satisfaction; all mean score > 4
(out of 5)
• Interviews:
  • Effective multidisciplinary patient care
  • Good opportunity to observe other allied health members
  • Increased clinical knowledge
  • Inter-professional Learning Scale (RIPLS)
    • Improved ‘teamwork & collaboration’ (p=0.04) and ‘roles & responsibilities’ (p=0.037)

Clinical: completion of course

Improvements in:
• Weight: all patients lost weight; mean weight loss -2.0kg (SD 1.3)
• Blood pressure: 6/8 had reduced diastolic and systolic BP
• Lipids: 4/8 had reduced total cholesterol and triglycerides
• Physical activity: all increased distance on 6 min walk test; median = 60m (range 60)
• Diet quality: 7/8 had improved fat and fibre scores; mean total index = 0.43 (SD 0.54)

RBWH Diabetes Clinic Waiting List:
All patients were removed from the RBWH diabetes dietitian wait list
2 patients required future appointments with the RBWH endocrinologist, others removed from RBWH wait list clinic.
Outcomes of Pilot Program

• New partnership between RBWH & QUT Health Clinics
• Enhanced student experience with inter-disciplinary practical and learning opportunities.
• Effective strategy to address long wait lists for patients with T2DM
• Improved clinical outcomes
• Outcomes consistent with the literature

Where to from here?

• MOU signed between RBWH ad QUT for ongoing programs
• Three programs planned for 2017
• Ongoing evaluation (utilising QUT research students)
• Need to explore alternative referral and funding options to enhance sustainability e.g. direct GP referrals, Medicare rebates
• Dissemination of results: presentations at DAA conference, plan to write up for peer-reviewed journal

The Light & The Dark

• Light: What we learnt
  • Good evidence in the literature for the model → support, enthusiasm and confidence
  • Be patient
  • Plan thoroughly
  • Good communication is vital
  • MOU early, ethics even earlier - be clear what you are asking for
  • Ring patients
  • Clear role clarification and expectations
  • Use validated tools - increased credibility
• Dark: What we would never do again
  • Collect so much data?
References