The effectiveness of nurse-led care in general practice on clinical outcomes in adults with type 2 diabetes

Recommendations

- Nurse-led care for patients with type 2 diabetes can improve the clinical outcomes of blood pressure, LDL and total cholesterol. (Grade B)
- When planning nurse-led care, consideration needs to be given to the use of clinical algorithms, behavioural goal setting, individualised care plans, self-management education, and review and follow-up of lifestyle risk factors. (Grade B)
- Nurse-led care supports the increasing importance of patients taking on a central role in their care rather than the more traditional role of passive recipient of care. (Grade B)
- For nurse-led care to have maximum impact there is an increased need for the practice nurse to have skills in behaviour change techniques, patient education, advanced communication and counselling skills. (Grade B)

Information Source

This Best Practice Information Sheet has been derived from a systematic review published in 2012 in the JBI Database of Systematic Reviews and Implementation Reports. The full text of the systematic review is available from the Joanna Briggs Institute (www.joannabriggs.org).

Background

In Australia chronic disease is reaching epidemic proportions, with cardiovascular disease (CVD) the leading cause of death accounting for 19 out of every 100 deaths and with type 2 diabetes (T2D) prevalence more than doubling in the last two decades. These two diseases share many of the same risk factors and may be caused by, or be a complication of, the other disease. Numerous estimates of the prevalence of diabetes have been made, with the World Health Organization predicting that by 2025 the number of persons diagnosed with diabetes will be three hundred million, from an estimate in 1995 of one hundred and thirty-five million. In Australia, diabetes was identified as a national health priority area in 1996; however, the prevalence of T2D has increased dramatically since then.

There are two main types of diabetes – type 1 and type 2. Type 2 diabetes is the most common form of diabetes accounting for 85-90% of all cases. Type 2 diabetes has been traditionally associated with people over 45-years of age who are overweight, however with the escalating obesity epidemic it is becoming increasingly common for the disease to be diagnosed in young adults, adolescents and even children.

It is estimated that fifty percent of patients with ‘chronic diseases do not receive best practice management’ highlighting the inadequacies of current healthcare management which focuses on acute problems and the urgent needs of patients. The current funding arrangements for general practitioners (GPs) highlight this as they encourage quick consultations with little incentive for extended consultations, which are usually required for patients with chronic diseases and complex needs. General Practitioners have been found to consider the management of chronic diseases time-consuming and a ‘burden’.

It was found that consultations for patients with a chronic disease last longer, progress was hard to define and the care was more complicated.

Grades of Recommendation

These Grades of Recommendation have been based on the JBI-developed 2006 Grades of Effectiveness.

- Grade A: Strong support that merits application
- Grade B: Moderate support that warrants consideration of application
- Grade C: Not supported
The GPs in the previous study also indicated that providing care for patients with chronic diseases was less satisfying than providing acute care.

International studies have confirmed that nurses working in general practice can effectively manage the care of patients with chronic disease and complex needs. It has become apparent that nursing skills are highly suited to health education and illness prevention methods that are required in the management of chronic diseases. Nurses are well placed in general practice to implement behavior change strategies and monitor patient compliance, both recognized requirements for the management of chronic disease. Nurses have been working within Australian general practices for several decades but only in recent years has the role of the practice nurse in primary health care increased. There is some evidence to support the use of nurse-led care in general practice for patients with T2D.

**Objectives**

General practice nursing in the Australian context is an evolving area and to date little research has been done in regards to nurse-led management of chronic diseases. Examining the effectiveness of nurse-led care in the general practice setting will inform the current debate of the role of the nurse within the Australian general practice setting.

The purpose of this Best Practice Information Sheet is to identify the effectiveness of nurse-led care in general practice as compared to general practitioner-led care on clinical outcomes in adults with T2Ds.

**Types of Intervention**

This review considered studies of nurse-led care in general practice on clinical outcomes such as systolic blood pressure (SBP), diastolic blood pressure (DBP), weight, body mass index (BMI), glycated hemoglobin (HbA1c), and cholesterol (LDL and HDL) in adults (>18 years of age) with T2Ds compared to general practitioner-led care.

**Abreviations**

For the purposes of this information sheet the following definitions were used;

- type 2 diabetes (TSD)
- systolic blood pressure (SBP)
- diastolic blood pressure (DBP)
- body mass index (BMI),
- glycated hemoglobin (HbA1c)
- low-density lipoprotein (LDL cholesterol)
- high-density lipoprotein (HDL cholesterol)
- randomized controlled trial (RCT)

**Quality of the research**

The electronic search was limited to English language articles published from January 1990 to December 2011 and yielded 804 potentially relevant papers of which 49 papers appeared to satisfy the criteria for inclusion. Full text of these papers were assessed against the inclusion criteria by two independent reviewers. Five studies met the inclusion criteria.

**Findings**

In this review there is no evidence to suggest that nurse-led care improves HbA1c for patients with T2D. However, there is also no evidence that nurse-led care provides worse outcomes than usual care for this outcome and although this review did not include cost-effectiveness this should be considered in future reviews or studies.

There are a number of other clinical outcomes that are important for patients with T2Ds in addition to HbA1c and these were considered in evaluating the effectiveness of nurse-led care in this review. Significant results showing improved outcomes for patients in nurse-led care included mean SBP, mean DBP, mean total cholesterol and mean LDL cholesterol.
These are important results that have not been reported previously. Adequate blood pressure and cholesterol control will significantly reduce the impact of diabetes, reduce costs to the health system and improve quality of life.

While these results are positive, there was no statistically significant support to show that nurse-led care was more effective than usual care for mean - or a set target - HDL cholesterol, number of patients achieving a set target for BMI, mean fasting blood glucose and mean triglycerides. There was also no evidence that nurse-led care was more effective than usual care for the number of patients meeting specific targets for SBP or DBP or total cholesterol.

This review was limited in the number of randomized controlled trials (RCTs) that have been conducted and published that assess the effectiveness of nurse-led interventions as compared with GP led interventions.

Despite the impetus for the review being to investigate the Australian general practice environment no studies included in the review were conducted in Australia. While results are encouraging, more RCTs are required. These should be well designed interventions with a clear role for the nurse, adequate sample sizes and conducted for a minimum of 12 months to ensure adequate time for changes in clinical outcomes. Outcomes assessing cost effectiveness are also required.

This review indicates that nurse-led care in general practice can improve the clinical outcomes of blood pressure and cholesterol for people with T2D. Nurses in general practice are ideally placed to manage the comprehensive and regular health care contact that patients with chronic disease require. For nurse-led care to have maximum impact there is an increased need for the practice nurse to have skills in behavior change techniques, patient education, advanced communication and counseling skills. Nurse-led care supports the increasing importance of patients taking on a central role in their care rather than the more traditional role of passive recipient of care.

**Implications for practice**

The increasing prevalence of people with diabetes and associated co-morbidities such as CVD and chronic kidney disease is placing the current health system under considerable stress. Consultations for patients with chronic diseases last longer, progress is hard to define and the care is more complicated than standard care. Practice nurses are usually afforded more time in their consultations and are ideally placed to lead the care of these patients. When planning nurse-led care of people with T2Ds, consideration needs to be given to the use of clinical algorithms, behavioral goal setting, individualized care plans, self-management education and review and follow-up of lifestyle risk factors.

The results of this review provide the following implications for practice:

- Nurse-led care can improve the blood pressure, LDL and total cholesterol of patients with T2Ds
- Nurse-led care in general practice does not improve HbA1c for patients with T2Ds
- Nurse-led care in general practice does not improve BMI for patients with T2Ds
- Nurse-led care in general practice does not improve HDL cholesterol for patients with T2Ds
- Nurse-led care in general practice does not improve fasting blood glucose for patients with T2Ds
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References

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This Best Practice Information Sheet presents the best available evidence on this topic. Implications for practice are made with an expectation that health professionals will utilise this evidence with consideration of their context, their client’s preference and their clinical judgement. ¹