

The systematic development of an innovative DVD to raise awareness of preconception care

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Introduction

Rates of adverse pregnancy outcome (stillbirth, perinatal mortality and congenital anomaly) are higher in women with diabetes compared with the general maternity population.^{1,2} Although there is an increasing realisation that preconception counselling/care is cost-effective^{3–5} and can reduce many adverse pregnancy outcomes,^{6–9} most women with diabetes receive suboptimal preconception care and only seek medical

Summary

The purpose of this article is to describe the design, development and process evaluation of a preconception counselling resource (a DVD) for women with pre-gestational diabetes.

DVD design and development centred on two key stakeholders ('DVD user group' and 'professional advisory group') working alongside a professional multimedia company. The DVD user group provided feedback on preferred DVD style, and informed modifications and improvements. The professional advisory group prepared the script, and ensured content and face validity. Evaluation of the DVD's acceptability and usefulness was assessed among women with diabetes via a postal questionnaire.

Development phase: the resulting DVD is a 45-minute programme with three parts, featuring eight women with diabetes sharing their views and experiences, alongside an evidence-based commentary. The programme focuses on the importance of preventing an unplanned pregnancy (highlighting contraception) and on essential planning advice.

Evaluation phase: 97 women (89 with type 1 and 8 with type 2 diabetes) evaluated the DVD using a rating scale of 0–10. Mean (SD) scores were: 9.1 (1.3) for quality; 9.0 (1.4) for content; 8.8 (1.5) for interest; 8.7 (1.8) for usefulness; 7.8 (2.2) for knowledge acquisition; and 8.0 (2.1) for knowledge confirmation.

This combined user and multi-professional advisory group approach has produced an innovative and highly acceptable preconception counselling resource for women with diabetes. The development process and outcome evaluation are an important point of reference for future educational programmes. Future research will evaluate the impact of this preconception counselling resource on pregnancy planning indicators and pregnancy outcome.

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Key words

preconception counselling; preconception care; DVD development; women with diabetes; education

advice upon realising they are pregnant.^{8,10} Various marketing approaches, e.g. pamphlets, posters, public service announcements and patient education programmes, have been used to encourage the use of preconception care programmes among women living with diabetes.^{8,11,12} However, the results of these increased outreach efforts are disappointing, and additional innovative strategies are now needed to increase the proportion of women (reportedly 30–40% in most studies)¹³ availing of preconception care.

The first step towards encouraging effective pregnancy planning is to ensure that, starting from adolescence, all women with diabetes are informed about the need and rationale for preconception care.¹⁴ Unfortunately, this is not always

the case, and knowledge deficits have been reported.^{15–18} Even if pre-pregnancy knowledge is optimal, improvements in both the support that women receive and the quality of the relationships they experience within the health care system may positively influence effective pregnancy planning.^{10,19}

Recently, multimedia technologies such as CD-ROMs and DVDs have proved to be feasible and effective educational interventions in people with diabetes.^{18,20,21}

Given the benefits of multimedia technologies and the urgent need to deliver accessible information in a supportive way,¹⁶ the purpose of this study was to design, develop and evaluate a preconception counselling DVD for women with diabetes. The goal of the DVD was ultimately to

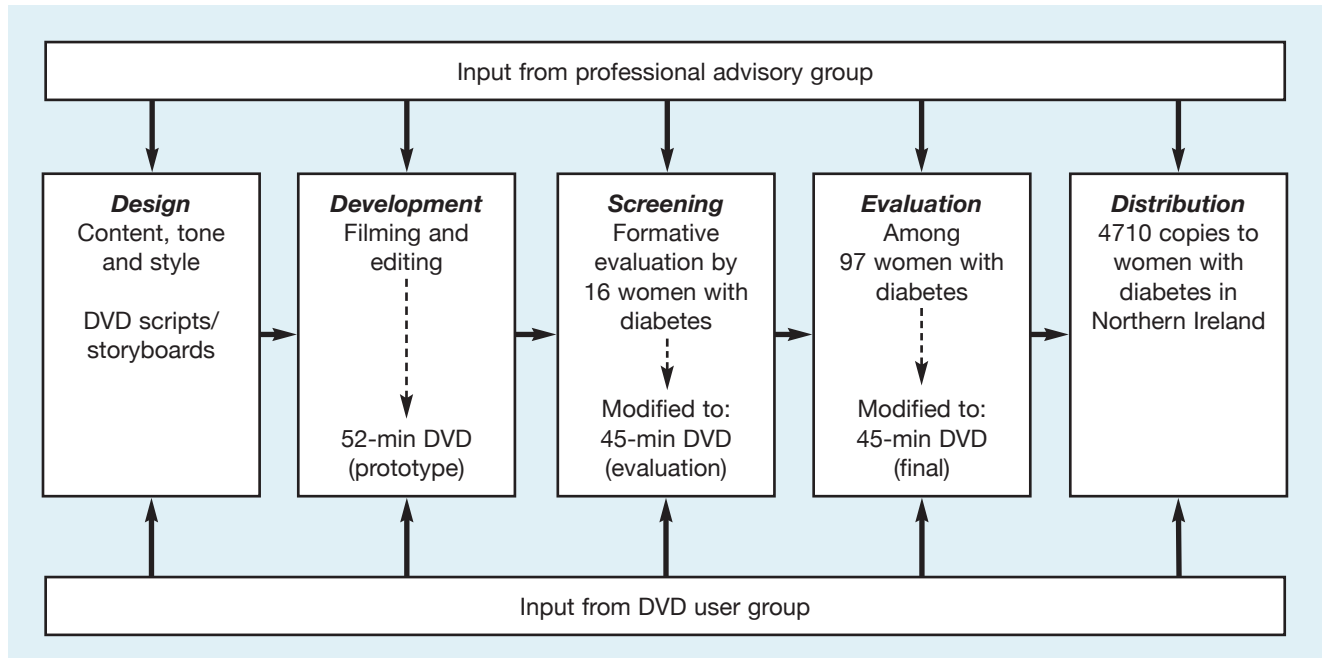


Figure 1. DVD development and distribution process

improve pregnancy management and outcome, by increasing the proportion of women who plan their pregnancies and seek preconception care. This paper specifically outlines: (a) the DVD's design and development phase, and (b) the subsequent evaluation phase, where the acceptability and usefulness of the DVD are evaluated by women with diabetes to inform final programme modifications. The effectiveness of the DVD at increasing knowledge, and positively influencing attitudes with regard to family planning behaviour (including the use of effective contraception and preconception care), has been established through a pre/post questionnaire evaluation (completed as part of the evaluation phase), and those results are obtainable elsewhere.²²

Methods

The authors worked closely with a professional multimedia company and consulted two key stakeholders (the 'professional advisory group' and the 'DVD user group') during the development phase. The professional

advisory group was chaired by an endocrinologist with expertise in pregnancy, with representation from those directly or indirectly involved in diabetes care/education, including: a diabetes specialist nurse; a diabetes specialist midwife; a dietitian; a general practitioner; a clinical health psychologist; an obstetrician; and a registered nutritionist with multimedia development experience. The DVD user group included women of childbearing potential with type 1 or type 2 diabetes, age range 17–40 years, with and without children. The DVD's acceptability and usefulness were subsequently evaluated by women with diabetes. An overview of the DVD development process is shown in Figure 1.

Ethical approval and copyright

The Office for Research Ethics Committees Northern Ireland (ORECNI) approved all research aspects of the project (REC references: 08/NIR02/50; 09/NIR03/71). Written informed consent was obtained from women participating in the DVD user groups and the

evaluation phase, with participants paid an honorarium of £20 for time and travel costs, and £10 for time costs for each phase, respectively. DVD ownership and copyright were established prior to development, and necessary approvals were obtained to ensure proper usage of all corporate logos on/within the DVD and associated cover.

Development phase

Content and style development. The content and style of the DVD production were guided by the Expanded Health Belief Model (EHBM),²³ with input from the professional advisory group and from focus groups with the DVD user group.

Theoretical framework. The DVD's message and framework were designed to alter cognitive factors embedded within the constructs of the EHBM, a social cognition model used to predict health behaviours which proposes that behaviour is influenced by an individual's beliefs and attitudes towards health outcomes. As detailed in Charron-Prochownik *et al.*,²⁴ several major

constructs of the EHBM are reported to correlate with reproductive health behaviours in adolescents with type 1 diabetes: perceived susceptibility, knowledge, barriers, threat, intention, self-efficacy with using contraception and awareness of preconception care.

Professional advisory group. The professional advisory group drafted the basic content of the DVD in accordance with NICE preconception care guidance.¹⁴ Content included: the importance of planning pregnancy and the role of contraception, pregnancy-related risks for the woman and baby, and health care advice for the preconception period. As the professional advisory group considered that some women may want to know more about diabetes and pregnancy, beyond preconception, additional evidence-based content on antenatal, intrapartum and postnatal care was prepared as optional viewing components to the DVD.

DVD user group. Knowledge and attitudes of the DVD user group towards pre-pregnancy care have been previously reported.¹⁶ In brief, themes that emerged from the focus groups highlighted knowledge deficits in pre-pregnancy planning information, and the need and desire for all women, regardless of age and marital status, to receive guidance in a positive and supporting manner at an earlier age.¹⁶ When women were asked about their preferred style of DVD production, they repeatedly acknowledged that a 'real life' approach was best. Recommended style suggestions included using a good mix of animations and illustrations, alongside evidence-based voice-over, with interview clips from 'real women' (rather than health care professionals) at the forefront of the production.

DVD filming and editing. Two consultant physicians (members of the steering group) were asked to identify

women, with type 1 or type 2 diabetes, to participate in the DVD. A recruitment mix (involving ethnically diverse women, with different accents, ages, and experiences of pregnancy) was preferred to enhance the DVD's wider appeal. A total of eight women (five nulliparous and three parous) aged 17–39 years took part in filming. Four women (three nulliparous and one parous) were currently pregnant.

The women (and four partners) participated in filmed interviews within their homes, designed to explore their views and experiences of the management of diabetes care from preconception to the postnatal period. Interviewees were initially asked a general question about their diabetes ('tell me about your diabetes'), followed by a series of open-ended questions posed in relation to DVD content themes. Three women were also followed up post birth (with their baby) to provide a retrospective view of their pregnancy experience. Excerpts from the interview responses were examined by the authors, and selected for inclusion in the DVD. A scriptwriter, in consultation with the professional advisory group, developed the script for a top UK female voice-over artist to deliver. The professional production company then integrated the DVD components (interviews, voice-over, 2D animations, video footage, and music) and prepared the prototype DVD for screening.

DVD screening. The 52-minute prototype DVD, with a graphic cork-board theme (adorned with post-it notes, pictures and note paper), was screened among 16 women (11 with type 1 diabetes and 5 with type 2 diabetes) for overall opinions, comprehensiveness, impact of personal clips, visual attractiveness of screen displays, and perceived relevance. In a separate screening, the professional advisory group ascertained content

and face validity (realism). The working title for the DVD, 'Women with Diabetes...Things you should know (but maybe don't!)', was carefully chosen to create general interest in the product and to prevent marginalisation of the target audience, e.g. the word 'pregnancy' was avoided as this may not 'appeal' to all women.

Evaluation phase

In all, 116 women attending one of two National Health Service hospitals in Northern Ireland, with no structured preconception care programmes, were recruited to view and evaluate the modified DVD, to inform final programme modifications. Women were eligible if they were of childbearing potential, aged between 16–40 years, had type 1 or type 2 diabetes, were not currently pregnant and were English speaking. Details of the flow of participants and procedure have been previously described.²² In addition to assessing DVD efficacy,²² a further feedback questionnaire was also completed post-DVD viewing and returned via freepost. This feedback questionnaire provided participants with the opportunity to rate their overall impression of the DVD, give their opinion on DVD content and usefulness, and write free-text comments.

Overall impressions. Participants were asked to rate the length of each part as too long, too short, or just right. DVD quality and ease of navigation were evaluated using a rating scale of 0–10.

DVD content and usefulness. DVD content, interest, and usefulness were evaluated using a rating scale of 0–10. The following two statements were responded to on an 11-point scale (0 = little, through to 10 = a lot). To what extent do you feel you have: (1) learned from the DVD, and (2) had previous knowledge

(perhaps you have forgotten) confirmed? Finally, on a scale of 0–10 (where 0 represents 'not strongly' and 10 represents 'strongly'), participants indicated to what extent they would recommend others to view this DVD.

Free-text comments. Participants were specifically asked to comment on the title and suggest alternatives. Any additional comments and criticisms were also invited. Where criticisms were recorded, participants were asked to suggest possible changes and/or additions to the DVD.

Statistics

Participant demographic variables and responses to the feedback questionnaire were summarised using descriptive statistics. Computations were carried out using PASW Statistics 18, Release Version 18.0.0 (SPSS, Chicago, IL, USA, 2009). Free-text questions were analysed by content and categorised.

Results

Development phase

Formative evaluation and modification arising from DVD screening.

Overall, the majority of women's opinions were very positive: (1) *'The title is intriguing, I would watch it'*, (2) *'It was good having people's stories rather than just loads of information being thrown at you'*, (3) *'It makes me feel better to know there's a lot more people out there, around my age, who have diabetes, and it points out, if you do these things, you have a lower risk of having a child with a problem'*, (4) *'I liked the noticeboard effect and the posts'*, (5) *'I would've watched it cos it wasn't just telling you about pregnancy, it was telling you the things you need to know before you get pregnant'*, and (6) *'Doctors always give me leaflets on alcohol, sex and smoking. I don't read them; I throw them in the bottom drawer. I would watch this.'*

A number of modifications were made as a result of the pilot: the title *'...Things you should know...'* was

Opening menu options	Running time	Chapter titles
Part 1: Things you need to know	19 mins	<ul style="list-style-type: none"> • The Cast • Contraception • Why Plan • Risks • Pre-Pregnancy Checklist • Why You Need to Know
Part 2: Things you might not know	8 mins	<ul style="list-style-type: none"> • Support Team • Diet • Blood Glucose Targets, Hypos and Ketoacidosis
Part 3: Things you may want to know	18 mins	<ul style="list-style-type: none"> • First Trimester • Second Trimester • Third Trimester • Delivery • Post Birth • Credits

View each part: Bit by bit

Table 1. DVD main menu contents

amended to *'...Things you need to know...'*; to more accurately convey the DVD's perceived importance and remove the *'authoritative attitude'*. Also, on the basis that some women thought that the background music was *'annoying'* and *'distracting'*, the volume and tempo were lowered. Finally, with respect to content, the following four major changes were made: editing of interview excerpts where appropriate to shorten the running time and avoid repetition of similar quotations; writing, recording and addition of vitamin D guidance; removal of outdated peanut allergy advice; and replacement of background footage in one scene which raised health and safety concerns.

Final DVD. The running time of the final DVD is approximately 45 minutes; it features eight women and two partners. The DVD main menu presents the viewer with several viewing options (Appendix 1). (All appendices are available via EDN online at www.onlinelibrary.wiley.com.) The DVD's main message (Part 1: 19 minutes) is suitable for all women with diabetes of childbearing potential (regardless of pregnancy plans), and emphasises the importance of preventing an unplanned pregnancy

and the role of contraception. The central culminating feature of Part 1 (the pre-pregnancy checklist) is designed to build on viewers' understanding of the type and scope of preparation required when planning pregnancy. While viewing Part 1, women are repeatedly encouraged to contact their GP or diabetes care team for individualised contraception and/or preconception care advice. The remainder of the DVD, Parts 2 and 3, is suitable for women who wish to know more about the antenatal, intrapartum and postnatal periods (Table 1). Each chapter begins with women sharing their views and experiences on the chapter topic, and is followed by user-friendly information and advice (provided by voice-over narration, reinforced by lifestyle scenes and 2D animations).

Evaluation phase

In all, 84% of respondents (n=97) returned the feedback questionnaire: 89 women with type 1 and 8 with type 2 diabetes; mean±SD diabetes duration 14.7±8.5 years; mean±SD age 30.3±6.0 years. Most women were white (97%), from social class I–II (61%), having 12 years or more in full-time education (77%). Sixty-one percent of respondents had never

	Mean (SD)
Overall quality	9.1 (1.3)
Ease of navigation	9.7 (0.7)
Content	9.0 (1.4)
Interest	8.8 (1.5)
Usefulness	8.7 (1.8)
Knowledge acquisition	7.8 (2.2)
Knowledge confirmation	8.0 (2.1)
Viewing recommendation	9.4 (1.1)

Table 2. Participants' overall impressions and opinions on DVD content and usefulness. (Mean [SD] scores are on a rating scale of 0 to 10)

been pregnant, 18% had had a previous miscarriage and 33% had one or more children. When asked about health professional advice, 85% of respondents reported that they had previously been told to use contraception to prevent a pregnancy, and 76% of respondents reported being told of the need to seek preconception care (special medical care and advice) before they become pregnant. Thirty-six percent of women stated that they had previously received preconception care, as reported by Holmes *et al.*²²

Overall impressions and opinions on DVD content and usefulness. Most women (87%, n=84) thought that the running time of Parts 1, 2 and 3 was 'just right'. Mean scores (SD) out of 10 are given in Table 2. Feedback from women in relation to the DVD is summarised in Appendix 2, while changes suggested by women are outlined in Appendix 3. When asked for comments specifically about the title, 46 out of 97 women (47%) responded and comments (n=40) were predominantly positive (Appendix 2). When asked for general comments or

criticisms, a total of 79 women (81%) responded. The most common recurring positive theme was that participants valued the contribution from women with diabetes in the DVD. The most common suggested addition was that participants wished to have more information on pregnancy-related risks (n=17) and, specifically, desired to 'hear from a patient who had a bad pregnancy experience' (n=8).

Final modifications arising from DVD evaluation phase. Upon review of the evaluation results, the authors reflected on possible changes and additions to the DVD, while being cognizant of participants' positive comments and the original aims of this project. Following a full option appraisal, only one criticism effected a change, *viz* the need to highlight more clearly the chapter viewing options. Thus, the fourth playing option on the opening DVD menu 'view each part' was changed to 'view each chapter'. Subsequently, the DVD cover was designed, in keeping with the DVD style and theme. The DVD was replicated for mass distribution as a pre-pregnancy counselling resource for women with diabetes, resident in Northern Ireland, via general practice clinics and diabetes care teams.

Discussion

Practice guidelines concur that, beginning in adolescence, all women with diabetes should receive counselling about the need to use effective contraception and the risk of malformation with poor metabolic control and unplanned pregnancy.^{14,25-27} Every contact with health care professionals should be a preconception counselling opportunity,^{14,25} with the intentions of the woman with diabetes regarding pregnancy and contraceptive use clearly documented.¹⁴ This paper describes the development of a programme intended to deliver essential evidence-based preconception counselling and care advice to all

women with type 1 and 2 diabetes, who may or may not be planning pregnancy. The DVD was informed by evidence-based guidance,¹⁴ and developed in consultation with key stakeholders (professional advisory group and DVD user group) in cooperation with a professional multimedia company.

Participants evaluated this educational programme positively for content, interest, usefulness, knowledge acquisition, knowledge confirmation, and overall impressions. Recently, the DVD has also proven to be effective at increasing preconception care knowledge, and positively influencing attitudes, self-efficacy, and intentions towards seeking pre-pregnancy care and preventing unplanned pregnancies.²²

There were several key success factors in the DVD development. First, a critical step involved clearly articulating the aims and expected outcomes of the intervention at the outset of programme development, resulting in the identification of the target audience. The programme's first focus is on the importance of preventing an unplanned pregnancy, culminating in a pre-pregnancy checklist. The second important step involved consulting women with diabetes to inform and guide the development process. We used gain frames,²⁸ which frame positive educational messages to emphasise the benefits, rather than the losses, of performing relevant behaviours (e.g. using contraception, smoking cessation) in a non-authoritarian manner. The decision to film women with diabetes increased the DVD's appeal, as participants were able to relate to their views and experiences, while hearing from someone who understood their daily challenges. Finally, to ensure content and face validity, the professional advisory group informed the script and provided relevant feedback.

The capacity for this resource to be posted to eligible women using a

validated population-based diabetes registry may prove particularly useful for reaching all women, and especially those who do not attend outpatient and/or GP appointments. Indeed, it may be viewed by the entire family circle, in an effort to improve social support.

Despite positive evaluation, this study has some limitations. Although participants were encouraged to give honest feedback, those who viewed the DVD prototype (development phase) may have provided more positive feedback when faced with researchers (MS, VAH). To overcome this, the evaluation phase was carried out by postal questionnaire; however, the results may have been affected by non-response bias, as only 26% of those invited contacted the research team to take part.²² Furthermore, as the majority of our evaluation phase participants are white (reflective of background demographics) and of a higher social class than the background population, this may limit the generalisability of our findings.

As women in this study enjoyed input from local women, there may be benefits to producing regional versions of this DVD. Indeed, when a 'real lives' approach is preferred, this DVD may be considered as a model for producing educational programmes elsewhere.

The DVD is currently being used as a pre-pregnancy counselling resource throughout Northern Ireland, having been adopted by all diabetes care teams and 34% of GP practices. Long-term evaluation is currently underway and will look at the DVD's impact on pregnancy planning indicators and pregnancy outcomes. For now, the DVD has been favourably received by women with diabetes and by health care professionals, and initial questionnaire data on the DVD's efficacy are promising.²² The DVD has also been converted to website delivery, <http://go.qub.ac.uk/>

womenwithdiabetes, allowing women with diabetes and health care professionals to access the resource online.

In conclusion, the DVD was found to be an effective, relevant, and highly valued educational intervention for women with diabetes that may serve as a model for producing future educational programmes.

Women with Diabetes Project Team

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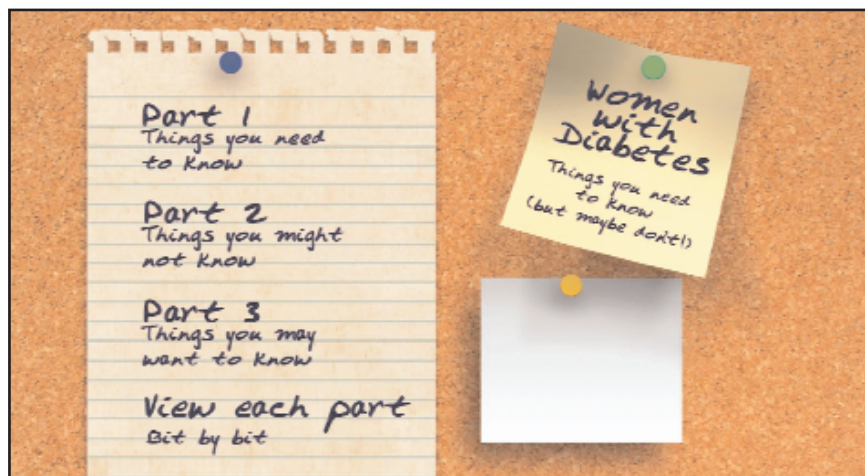
Declaration of interests

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References

- Confidential Enquiry into Maternal and Child Health. *Diabetes in Pregnancy: Are we providing the best care? Findings of a National Enquiry: England, Wales and Northern Ireland*. London: CEMACH, 2007.
- Evers IM, et al. Risk of complications of pregnancy in women with type 1 diabetes: nationwide prospective study in the Netherlands. *BMJ* 2004;328:915–8.
- Elixhauser A, et al. Cost-benefit analysis of preconception care for women with established diabetes mellitus. *Diabetes Care* 1993; 16:1146–57.
- Herman WH, et al. Diabetes and pregnancy. Preconception care, pregnancy outcomes, resource utilization and costs. *J Reprod Med* 1999;44:33–8.
- Scheffler RM, et al. Prevention: the cost-effectiveness of the California Diabetes and Pregnancy Program. *Am J Public Health* 1992;82:168–75.
- Kitzmilller JL, et al. Preconception care of diabetes. Glycemic control prevents congenital anomalies. *JAMA* 1991;265:731–6.
- Suhonen L, et al. Glycaemic control during early pregnancy and fetal malformations in women with type 1 diabetes mellitus. *Diabetologia* 2000;43:79–82.
- Willhoite MB, et al. The impact of preconception counseling on pregnancy outcomes. The experience of the Maine Diabetes in Pregnancy Program. *Diabetes Care* 1993; 16:450–5.
- The Diabetes Control and Complications Trial Research Group. Pregnancy outcomes in the Diabetes Control and Complications Trial. *Am J Obstet Gynecol* 1996;174:1343–53.
- Holing EV, et al. Why don't women with dia-

- betes plan their pregnancies? *Diabetes Care* 1998;21:889–95.
- Janz NK, et al. Diabetes and pregnancy. Factors associated with seeking pre-conception care. *Diabetes Care* 1995;18:157–65.
- Murphy HR, et al. Effectiveness of a regional preconception care program in women with type 1 and type 2 diabetes. *Diabetes Care* 2010;33:2514–20.
- Temple R. Preconception care for women with diabetes: is it effective and who should provide it? *Best Pract Res Clin Obstet Gynaecol* 2011;25:3–14.
- NICE Clinical Guideline 63. Diabetes in pregnancy: management of diabetes and its complications from preconception to the postnatal period. 2008. www.nice.org.uk/ [accessed 1 Jan 2011].
- Charron-Prochownik D, et al. Reproductive health and preconception counseling awareness in adolescents with diabetes: What they don't know can hurt them. *Diabetes Educ* 2006;32:235–42.
- Spence M, et al. An exploration of knowledge and attitudes related to pre-pregnancy care in women with diabetes. *Diabet Med* 2010;27:1385–91.
- Diabetes and Pregnancy Group. Knowledge about preconception care in French women with type 1 diabetes. *Diabetes Metab* 2005; 31:443–7.
- Charron-Prochownik D, et al. Randomized efficacy trial of early preconception counseling for diabetic teens (READY-Girls). *Diabetes Care* 2008;31:1327–30.
- Murphy HR, et al. Personal experiences of women with diabetes who do not attend pre-pregnancy care. *Diabet Med* 2010;27:92–100.
- Fischl AF, et al. Impact of a preconception counseling program for teens with type 1 diabetes (READY-Girls) on patient-provider interaction, resource utilization, and cost. *Diabetes Care* 2010;33:701–5.
- Glasgow RE, et al. Reach and effectiveness of DVD and in-person diabetes self-management education. *Chronic Illn* 2009;5:243–9.
- Holmes VA, et al. Evaluation of a DVD for women with diabetes: impact on knowledge and attitudes to preconception care. *Diabet Med* 2012;29:950–6.
- Burns AC. The Expanded Health Belief Model as a basis for enlightened preventive health care practice and research. *J Health Care Mark* 1992;12:32–45.
- Charron-Prochownik D, et al. Reproductive health beliefs and behaviours in teens with diabetes: application of the Expanded Health Belief Model. *Pediatr Diabetes* 2001;2:30–9.
- American Diabetes Association. Standards of medical care in diabetes – 2009. *Diabetes Care* 2009;32:S13–S61
- SIGN Guideline 116: Management of diabetes in pregnancy. www.sign.ac.uk/guidelines/fulltext/116/index.html [accessed 4 June 2011].
- McElduff A, et al. The Australian Diabetes in Pregnancy Society consensus guidelines for the management of patients with type 1 and type 2 diabetes in relation to pregnancy. *Med J Aust* 2005;183:373–7.
- Rothman AJ, Salovey P. Shaping perceptions to motivate healthy behavior: the role of message framing. *Psychol Bull* 1997;121:3–19.



Appendix 1. DVD opening menu. (Note: when this menu opens, DVD scenes play within the blank post-it)

Category	Participants' grouped responses
Title(s)	Title is good (n=24); title is relevant/suitable (n=4); title is direct without being intimidating (n=1); title is intriguing (n=4); title is effective (n=2); the title of each part/chapter is good (n=1); easy to understand (n=2)
DVD in its entirety	Enjoyable (n=1); interesting (n=7); good (n=5); impressive (n=1); well put together/professional presentation (n=7); worthwhile DVD (n=4); clear (n=6); important to receive DVD early in life (n=5); useful to participants (n=12) and their family/partner (n=4); relevant to all women with diabetes, regardless of pregnancy plans (n=4); relevant to all women who are sexually active (n=1); DVD not imminently relevant but good for the future (n=2); DVD imminently relevant as participant is planning pregnancy (n=3); excellent for women planning pregnancy, particularly for first time mums (n=2)
Evidence-based advice	Informative (n=14); increased participants' knowledge (n=13); participants with no pregnancy plans paid extra attention to their contraceptive use upon viewing DVD (n=2); effective (n=3); lots of quality information, covering all aspects (n=5); concise (n=2); reinforced what participants knew or forgot (n=6); reminded participant about how well she was looked after during pregnancy (n=1); covers material not highlighted at all/enough at diabetes outpatients (n=3); good balance of scientific language (n=1); points to health professionals at the appropriate time for further information (n=1); positive (n=2); some aspects are slightly scary but essential to know (n=1); knowledge of risks is covered in sufficient detail, additional information may cause great concern (n=1)
Patients	Liked the variety of interviewees (age groups; stages of pregnancy; ethnic mix) (n=4); loved the use of real/ordinary people with diabetes (n=7); preferred real women rather than advice from people without diabetes (n=2); experience and views were enjoyable to hear (n=7); could relate to participants, nice to know you're not alone (n=4); loved how the DVD featured women from Northern Ireland, it made it more real (n=1)
Graphics	The checklists were good (n=3); liked the post-its and notice board effect to introduce each scene (n=1)
Running time	The appropriate length (n=1)
Navigation	Easy to navigate (n=4); liked the different sections (n=3); the programme could be tailored for participants' interests/stage in life through menu selection (n=1)

Appendix 2. Participants' comments on the DVD, replying to the question: 'Do you have any positive comments about the DVD?' (n = the number of times the comment was reported)

Original article

Development of a diabetes preconception care DVD: 'Women with Diabetes: Things you need to know (but maybe don't!)'

Category	Participants' grouped responses
Title	The DVD should mention the word pregnancy (n=14) or baby (n=1); remove the word 'women' so that it's relevant to men (n=1)
Evidence-based advice	Include guidance on the best age for a woman with diabetes to give birth (n=1); discuss the ease/difficulty of conceiving a child (n=1); more information on pregnancy-related risks (n=17); more information on contraception (n=1); discuss the chances of your baby getting diabetes (n=1); more factual information (n=1); include a handbook to accompany the DVD (n=1)
Diabetes care team	Have a health professional talking and presenting the facts (n=4)
Participants	Have an interview with someone who had a bad pregnancy experience, e.g. birth defects, miscarriage (n=8); have an interview with someone who had poor control, good control before she conceived, then gave birth (n=1); film more husbands, partners or family members speaking (n=2); follow one person's story from preconception to post-birth (n=1); film and incorporate fewer women (n=1); film and incorporate more women (n=1)
Graphics	Have women's names and ages appear (n=2); more visual pictures, for example, insulin in bloodstream (n=1)
Narration	Slow narration speed and include longer pauses (n=1)
Running time	Part 3 could be longer (n=3); DVD could be longer (n=1)
Navigation	Viewer should be able to view each chapter individually (n=1)

Appendix 3. Participants' suggested changes and additions to the DVD, replying to the question: 'Do you have any suggestions as to how the DVD could be improved?' (n = the number of times the comment was reported)