Scandinavian Journal of
Caring Sciences

EMPIRICAL STUDIES

doi: 10.1111/scs.12248

Psychosocial factors impacting on life transitions among young adults with type 2 diabetes: an Australian – Danish qualitative study

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Scand J Caring Sci; 2016; 30; 320–329

Psychosocial factors impacting on life transitions among young adults with type 2 diabetes: An Australian – Danish qualitative study

Background: Type 2 diabetes (T2DM) prevalence is increasing rapidly worldwide with a significant increase in young adults. There is limited information about psychosocial and service needs of this group.
Aim: To explore similarities and differences in how psychosocial factors impact on Australian and Danish young adults with T2DM and to identify unmet support needs during life transitions.
Method: A qualitative approach was adopted using thematic content analysis of 26 in-depth semi-structured interviews. An inductive descriptive content analysis was undertaken using a comparative coding system.
Findings: Eligible participants were from Australia (12) and Denmark (14), aged 19–42 years who had T2DM for more than 10 months. In general, they reported diabetes management was difficult during transitions and diabetes self-care routines had to change to accommodate life changes. The underpinning sense of 'uncertainty' initiated by life transitions caused guilt that often resulted in low self-worth, anxiety and depression, which in turn had a negative impact on social and professional relationships. The participants emphasised the importance of connectedness to social networks, particularly with T2DM peers, and the need for flexible access to health professionals, age-specific tailored support and lower costs for Australians. Australian participants were more concerned than Danish participants about the cost associated with diabetes care and their ability to stay employed; hence, they were reluctant to disclose diabetes at work.
Conclusion: T2DM had a similar impact on life transitions of Australian and Danish young adults with T2DM, suggesting health care needs to encompass managing life transitions. Participants had to cope with uncertainty and the impact of people's responses to diabetes, particularly at work and in relationships. Health professionals are urged to integrate these factors in care plans and education, which must be individualised and focus on the psychosocial aspects that operate during life transitions.

Keywords: diabetes, young adults, life transition, qualitative research, content analysis, Australia, Denmark.

Submitted 6 January 2015, Accepted 10 April 2015

Introduction

Life transitions profoundly affect people's ability to make decisions and solve problems, which are vital to effectively managing diabetes (1, 2). The worldwide prevalence of diabetes in adults is expected to increase from 5.0 to 6.2%, or 328 million between 2003 and 2025 (3). Adults diagnosed with type 2 diabetes (T2DM) before age 44 doubled between 1996 and 2006 in the United States (3). T2DM is no longer a disease primarily of older people.

Australia and Denmark have two different systems with comparative diabetes prevalence in the general populations of 8.97% in Australia and 8.3% in Denmark (3). Psychosocial stress and the ability to cope with and adjust to change influence people's self-care potential and consequently metabolic control, which impacts on clinical outcomes and mental health (4).

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There is little information about the needs of young adults with T2DM, or how they manage diabetes during life transitions in Australia or Denmark. In addition, little is known about the emotional and social well-being of this group (5). In the current study, young adults were defined as aged 19–42 years. This age range was chosen to ensure that participants had experienced numerous life transitions to enable them to reflect on, compare, prioritise and explain the most and/or least significant transitions.

Life transitions are a developmental concept that has many characteristics, including how they are experienced, their developmental and growth value and their function linking people to their social context (6). Hence, life transitions are often linked transitions and cause stress and the need to adapt to the changed situation (7–9). A life transition and change in health status can be difficult and regarded as negative resulting in low self-esteem, risk-taking behaviours and emotional instability (7). However, transitions can also represent an opportunity for positive change to enhance quality of life (8, 9).

Young adulthood often involves many transitions including leaving home, entering the work force, establishing relationships and becoming a parent. Previous studies suggest young people with type 1 diabetes find life transitions stressful because diabetes impacts on their physical, psychological and social well-being (2, 10).

Diabetes is mainly managed by the individual. Self-care is influenced by the characteristics of the healthcare system, the way the healthcare team functions, the availability and accessibility of resources and diabetes and its treatment (11). Therefore, it is useful to compare two countries that have different services in order to identify the needs of young adults with T2DM.

An Australian–Danish research collaboration identified common knowledge gaps among young people with T2DM, especially about how to provide psychosocial support for this group. Both are high-income countries with similar diabetes rates and total health expenditure (12), which creates a basis for comparing transitional experiences to enable health professionals to plan and provide services and education relevant to young adults with T2DM.

The Danish government sets the health service framework and manages health planning. All registered Danish residents are entitled to publicly financed health care that is largely free at the point of use. The publicly financed health system covers all primary, specialist, hospital services, preventive services, mental health services and long-term care (12). In Australia, a national public health insurance scheme, Medicare, provides universal health coverage for Australian citizens and permanent residents (13). Voluntary private health insurance plays a mixed complementary and supplementary role, enabling people to access treatment in private hospitals and some ancillary healthcare services. Australians can choose to pay for health care in public or private hospitals. Generally, people with diabetes are mainly treated by general practitioners (GPs) usually under the Medicare subsidy (14). However, people also consult specialist services, which is free in Denmark but fee-for-service in specialist private practices is charged in Australia (13).

It is important to understand how young people with T2DM access, use and navigate the health system. Only one qualitative study specifically addressed the information needs of young adults with T2DM, and how they would like to receive information (15). The main finding was that young people wanted clear, consistent, evidence-based information delivered in a range of formats (15). The study also identified that young adults with T2DM wanted enough information to actively engage them in their diabetes care and to be able to locate appropriate information to assist them to manage their diabetes independently (15).

Aim

This study aimed to explore similarities and differences in how psychosocial factors impact on Australian and Danish young adults with T2DM and to identify unmet support needs during life transitions.

Methods

Design

A qualitative design was used to obtain in-depth information about life transitions in young adults with T2DM. A qualitative design was chosen to enable the researchers to capture the participants' unique knowledge and experiences of life transitions. Data were collected through semi-structured interviews (16), and an inductive descriptive content analysis was undertaken (17).

Participants

A purposive sample of 26 participants diagnosed with T2DM according to the sites that the participants attended, participated in the study. The inclusion criteria were adults diagnosed with T2DM for more than 10 months, aged between 19 and 42 years to enable participants to reflect on and explain life transitions and able to read and speak English or Danish. The 26 participants comprised 12 Australians and 14 Danes from metropolitan and regional settings in both countries. The demographic and clinical characteristics of the 26 participants are presented in Table 1.

Table 1 Demographic and clinical characteristics of 26 participants in life transition study

	Australian Participants	*Danish Participants*	*All*
Men	4	9	13
Women	8	5	13
Age (Median) (range)	34	35	34 (19–42)
Duration of Diabetes years	5	6.2	5.6 (0.5–19)
Insulin only	4	5	9
Tablets only	4	6	10
Tablets and insulin	4	3	7
Diet and Exercise only	0	0	0
Living Situation			
Living with partner	6	8	14
Living alone	7	4	11
Other arrangement	0	1	1
Employment			
Full-time work	5	11	16
Part-time	2	1	3
Full-time student	1	1	2
Unemployed	4	1	5

Recruitment

Recruitment occurred between October 2012 and November 2013. Participants were recruited from the following sources.

Australia

Study recruitment. A regional diabetes clinic and one metropolitan diabetes service. The participants were recruited via (a) response to an advertisement about the project on a local website support group for young people with T2DM, (b) names and contact details of potential participants were forward by diabetes clinic staff to the researchers after they gave permission for their contact details to be forwarded to the researchers.

Setting. In Australia, T2DM is predominantly diagnosed and managed in general practices and a GP management plan is developed. Once in place, a GP can refer a patient for a maximum of five allied health services per calendar year. Patients with T2DM who have a GP management plan can also access group services provided by Medicare eligible diabetes educators, exercise physiologists and dieticians on referral from the GP (13). In addition, support for people living with diabetes includes subsidising diabetes-related medicines through the Pharmaceutical Benefits Scheme and providing access to subsidised diabetes-related consumables and information on diabetes management through the National Diabetes Services Scheme (14).

Denmark

Study recruitment. The majority of participants were recruited from diabetes clinics in metropolitan and regional services. One participant was recruited from a general practice.

Setting. In Denmark, T2DM is diagnosed and managed both in general practices and in diabetes clinics in the hospitals. The tax-funded healthcare system ensures free access for all citizens to general practice services (18). Danish GPs operate as independent contractors within the public health service and are remunerated based on a combination of fee-for-service (2/3) and capitation basis (1/3) (4). Approximately 60% of GPs employ nurses who provide a variety of services including diabetes consultations depending on their competencies and the organisation of the clinic (18).

Data collection. Data were collected through face-to-face semi-structured interviews in Australia by a research assistant and first author. The last author facilitated the interviews in Denmark. The participants selected interview location, in quiet public places like libraries or at participants' homes. Interviews lasted between 40 and 80 minutes and were tape-recorded and transcribed verbatim.

The interview guide was developed and commenced with demographic and diabetes-related information and continued using probing questions on different types of transitions based on the transitional framework of Schumacher & Meleis (19). The interview guides were translated by using forward translations and back translations between the research teams in the two countries. Both teams comprised members' who spoke Danish and English fluently. The Australian team was led by a Danish born researcher. The interview guides were pilot tested in both countries to ensure they would be understood by the target audience and were cultural sensitive and relevant.

Data analysis. Data analysis was undertaken concurrently in Australia and Denmark and commenced by researchers noting emerging themes/issues and recording them in tables within main areas related to family and social network, economy, diabetes education, work/study, health services and psychological issues (cognitive abilities, mental stage, perspective on life).

The text was then examined in detail and line-by-line coding applied, and thereafter, open coding was applied to identify emerging information by de-contextualising pieces of data embedded within the primary material. The analysis continued until no more new codes or categories emerged; hence, the data were saturated (20). Comparative analysis was then undertaken by comparing coding sets from the Australian and Danish data sets.

A coding trail was used to analyse nine randomly selected transcripts to ensure coding was consistent. A coding trial consisted of a compilation of the codes, their content descriptions and a brief data as an example (21). The coding trial was reviewed regularly to assess possible evolution of the codes and categories. Minor discrepancies were resolved in discussion to reach 100% agreement. The first and last authors met regularly to re-read the data and compare the two coding frameworks and to cross-code them. Preliminary coding themes were presented to the full research team and discussed with expert clinicians in both countries.

Coding was finalised according to key topics for all transcripts, and the final coding framework was presented to the full research team a second time and discussed with expert clinicians in both countries.

Ethics approval. The study was approved in Australia by Deakin University Human Research Ethics Committee (HREC) 2012-305 and from three public health services. In Denmark, the project was approved by the Danish Data Protection Agency (Journal number 2007-58-0010) according to local policy. The participants were guaranteed confidentiality and informed that participation was voluntary and that they could terminate their interview at any time without prejudice.

Findings

Both Danish and Australian participants reported life transitions had a major psychological and social impact on their lives and identified their potential needs for support. All participants indicated that diabetes management was easier when life was structured and predictable, but became difficult when they needed to change their diabetes self-care routines to accommodate life changes. Transitions and life events had a significant effect on their blood glucose control and their psychological and social well-being, which in turn affected their health service needs.

Psychosocial responses to transition

Participants in both countries indicated that their quality of life during life transitions was affected because diabetes management intruded into their daily activities. Most participants, more Australians than Danes, indicated their quality of life was negatively affected; however, all participants reported their emotional responses to life transitions affected their diabetes self-management.

> Transitions require special attention to diabetes management and you need to 'keep the head cool. (Danish women, Int 7)

The underpinning response to life changes was a sense of uncertainty, for example when moving or entered a new environment, when changing work or beginning study. These changes forced the participants to change their diabetes management routines, which made them feel uncertain. The uncertainty triggered an emotional response and an overwhelming feeling of guilt.

Feeling guilty

All participants reported they felt guilty when their diabetes affected their health and social networks, particularly during major life transitions such as starting a relationship and becoming a parent.

> When I had a baby my husband had to take time of work because of my frequent hypos' [hypoglycemia]. (Australian women, Int 19)

The sense of guilt was exacerbated when the fluctuating blood glucose levels affected their daily activities. Moreover, guilt feelings were particularly evident in relation to self-blame when participants felt they did not do enough to manage their diabetes. Both the Danes and Australians used the expression 'being lazy' to explain their guilt.

> Just other peoples' conceptions that diabetes is what lazy people get. That's been said to me sort of thing. I think that's the main thing, I worry about. (Aus women, Int 16)

Over half the participants from both countries stated the guilt feeling made them depressed and reduced their self-worth during transitions. They used phrases such as 'feeling inadequate', 'trapped with diabetes' and 'difficulty concentrating due to hypos'. An important finding was that depression and low self-esteem were reported by most participants who had been overweight in the past or were overweight or obese at the time of the interviews.

> It was self-inflicted, that is probably what is worst, it is the self-blaming that is in it [being overweight]. (Danish man, Int 12)

Losing body weight

Both Danish and Australian participants who managed to lose weight identified their weight loss as a transition. The outcome of the transition was improved sense of self-esteem and confidence.

> Diabetes has impacted positively on my quality of life, as I slowly changed my life style. (Danish women, Int 11)

Participants who lost weight reported they were able to do so because they were supported by family members, health professionals or were motivated by factors such as 'wanting to be around for my children', 'fear of diabetes complications' or 'wanting to stay healthy to keep my job'. These factors helped them lose weight and to sustain their acquired weight. Some described losing weight as a change in their identity.

Fearing responses from other people

Both Australian and Danish participants reported their social well-being was affected by responses from other people, particularly during life transitions, because they felt uncertain and were more sensitive to people's responses when they felt uncertain. The fear of being judged as 'lazy' or that diabetes was 'self-inflicted' made them uncertain about how to relate and communicate with other people. Most participants felt socially isolated during transitions, particularly at diagnosis, when commencing education programs, entering the work force and when leaving home.

> I felt on my own as I had to learn to self-manage' (Australian women, Int 1) and 'I didn't know anyone else with type 2 diabetes. (Danish man, Int 3)

Participants were afraid of being judged by people in their close and wider social networks. For example, participants were fearful of disclosing diabetes, especially when they entered a new relationship. They found it difficult to constantly have to consider how and when to disclose their diabetes, which resulted in a sense of isolation and loneliness. One Danish participant explained that she disclosed her diabetes to a very few people. She never told her in-laws and only told a few friends because she was afraid they would be judgemental.

> It is actually only my family who knows about it [diabetes], and some of my friends, the ones I am closest to, but not my in-laws. I have not told them, that I had diabetes. It is only my husband who knows. It's not everyone I have told about diabetes, because I think that someone will laugh at it.
>
> VL: Why?
>
> X: That's because when it is type 2 [diabetes], there is some [people] who link it to having lived unhealthy…….. some people are quick to comment on it [having diabetes because of unhealthy life style], so then I just do not say it. (Danish women, Int 5)

Participants also feared being judged in their wider social networks, for example when interacting with health professionals. More Australian participants reported that health professionals were judgmental compared to Danes.

> The doctor (endocrinologists) didn't tell me anything. I don't think it really occurred to him to talk to me and give me more information. He just judged me to be incapable of managing diabetes myself. That's what I found very frustrating. (Australian women, Int 19)

However, all participants, who reported they felt they were being judged, indicated the feeling had a significant impact on their social well-being. For example, the majority of Australian participants worried about how other people would react about their diabetes when they started a new job; consequently, they were reluctant to disclose their diabetes and changed their diabetes self-management routines at work.

> I deliberately didn't tell my boss because he is very critical of people who have got health issues. We did have a girl who had type 1 diabetes and she would have to have sick days you know. When she had health problems, he was very critical and very hard on her. So I've actually hid it [diabetes] from him. (Australian women, Int 19)

The fear of being judged resulted in some participants not wanting to take time away from work for medical appointments, and they were very reluctant to take sick leave, in particular financial concerns.

Financial concerns

Both groups reported financial concerns, especially Australian participants who regarded cost as a major barrier to diabetes self-care. They expressed concern that the high cost of specialist care was not subsidised by any level of government support. In addition, the cost of travel to appointments was an added burden.

> A private endocrinologist costs $ 200 a session. I had to save up for about 2 months before I could go and see one otherwise I have to go and borrow money and stuff which is hard because I like to be independent. (Australian woman, Int 17)

Both groups were concerned about developing diabetes complications, and the effect complications would have on healthcare costs, their ability to manage diabetes self-care tasks and remain employed in full-time work. These concerns were constantly on their minds and affected their social well-being and the care they expected from health services.

Experiences with health services

The participants reported that life transitions changed their diabetes management support needs; hence, their health service support needs also changed. The main support they required from health services were support at diagnosis, effective communication and flexible services, being able to connect to other young adults with T2DM and age-appropriate service and information.

Support at time of diagnosis

A notable difference between the Australian and Danish groups was the level of satisfaction with their respective health systems. Danish participants were generally satisfied with diabetes services, especially when they were diagnosed. All Danish newly diagnosed people with diabetes are offered a 3-day diabetes school; however, not all take up the offer, and in the current study, the Danish participants who took up the offer had a positive experience. They reported that at the 'Diabetes School' they met health professionals, other people who had just been diagnosed with diabetes and gained relevant information, all these factors that might have fulfilled some of their support and information needs at a critical point in their illness trajectory.

Communication and flexible services

The Danish women in the current study reported their diabetes care team was well coordinated and communicated well during pregnancy and childbirth. They praised the diabetes service support they received both during pregnancy and childbirth. A specialised diabetes clinic at a metropolitan hospital coordinated their care and treatment.

However, most Danish participants were diagnosed by their general practitioner and found the general diabetes service frustrating due to the inflexibility. They had to take a lot of time to work and their general practitioners (GP) were not very informed or up-dates on new research and treatments. This finding was similar to the majority of Australians who felt communication among disciplines was often inadequate and services were inflexible.

> It is frustrating at times when you need to see a specialist and they say, "we are here from 9 to 4". Then you have to organize time off work, and it is a hassle . . ... (Australian Man, Int 20)

Most Australian participants also indicated there was a need for improved communication among the different health disciplines. The majority of Australians reported experiencing lack of communication among health insurance (Medicare), GP and other health professionals, including endocrinologists.

All participants highlighted the need for more flexible communicating modes with health professionals. The Australians mentioned that flexible hours, use of social media and smart phones would help them to keep appointments and enable them to better to self-manage their diabetes.

Connecting with adults with type 2 diabetes

Both Australians and Danes wanted to communicate with other young adults with T2DM. They described how the health systems often placed them in groups with older people with diabetes rather than people at their own age. When participants connected with other adults with T2DM similar age as themselves, they reported that the support provided inspiration because of positive role models. They also felt reassurance by others with similar experiences and felt supported to navigate the health system more efficiently, particularly when first diagnosed.

> It would be nice if there were weekend retreat camps for adults that have just been diagnosed. Because that is a difficult time and it is nice to be able to see someone and talk to them once you have been diagnosed and sort of say "you'll be okay. You are not alone". Just to have the reassurance that someone else has been going through diabetes for a number of years and they are fine, they are perfectly fine, they are upbeat. They are leading life that is normal and have achieved great things. I know so equal access for everyone in terms of medication and things. (Aus women, Int 15)
>
> If you could establish dinner clubs or something like that, it would be really interesting [to connect with other adults with T2DM]. (Danish man, Int 14)

Furthermore, most Danish participants reported they wanted more age-appropriate information about T2DM because most T2DM information was developed for older people.

> I would like that there be more of community. There seems to be a community of older people. I wish there would be more age specific information and some groups or Facebook groups or something. (Aus women, Int 19)

Discussion

The study highlights the impact of diabetes during life transitions in both Australian and Danish young adults with T2DM. The life transitions they experienced were common life course transitions; however, the presence of diabetes-related stress significantly impacted on their emotional and social well-being during transitions.

Participants' strong sense of guilt had a major impact on the way they managed life transitions. Although guilt feelings are reported in other studies among women with T1DM (22), the profound sense of guilt participants in the current study is an important finding because guilt lead to reduced self-efficacy (22), inhibited empowerment (23) and negatively impacted on diabetes self-management (24). The term 'empowerment' is used in a wide range of contexts and is generally viewed as a multilevel construct (25, 26) that comprises a process by which individuals experience heightened feelings of control. Empowerment is integral to self-management (23, 24, 27, 28) and can lead to positive health outcomes (24, 29) and as a consequence can diminish sense of guilt (22).

Moreover, guilt feelings are embedded in the fear of being judged by others. Fear of being judged was particularly prominent in all participants. Recent Australian research suggests young adults with T2DM are sensitive to judgmental stigmatising attitudes (22, 29). In a qualitative study of 25 adults with T2DM, 21 participants believed they were stigmatised due to their T2DM (5). Participants felt others blamed them for causing their own condition were subjected to negative stereotyping, discriminated against or felt diabetes restricted life opportunities (5). Their feelings were reinforced by stigmatising attitudes displayed in the media, by healthcare professionals, friends, family and colleagues (29). The study identified important barriers to self-management such as s lack of motivation, feeling burned out and being time-poor. Our study identified similar barriers, especially lack of motivation to maintain diabetes self-management, which participants described as 'being lazy'.

Our findings confirm other Australian studies (15, 22, 29) and are consistent with a US study that found low emotional well-being among young adults with T2DM and also that they were more distressed and depressed than older people with T2DM. In addition, when compared with older people with T2DM, the young adults had lower diabetes self-efficacy that compromised self-management and resulted in suboptimal glycaemic control (30). Another US study (31) suggested younger individuals who experienced high levels of stress and depression or have low self-efficacy are more likely to have suboptimal glycaemic control than older people, which, suggests young adults with T2DM have specific care and education needs and particular health risks that are influenced by their developmental stage. Our study indicates that specific life events and major transitions increase stress and negatively affects glycaemic control.

Our study suggests early intervention in the illness trajectory is critical because it could assist the individual adopt a positive approach to successfully managing their diabetes during their life transition. The participants identified that transition can have a positive outcome, for example if they lost weight and managed to sustain a healthy life style. Even if the diabetes diagnosis was a shock to the participants, some were able to perceive their diagnosis in a positive way as an opportunity to adopt a healthy life style. Positive outcomes from life transitions help prevent emotional distress anxiety, depression and guilt feelings (22). It was clear that the Danish participants who attended a 3 day diabetes school when diagnosed with diabetes in our study felt more confident to manage their diabetes compared to participants who did not attend the school. Moreover, course attendees expressed more positive attitudes to their diabetes self-management and life in general.

Another important finding from our study was that Australians were more reluctant to disclose their diabetes, especially at work, compared to their Danish counterparts. They feared the attitudinal and behavioural responses from other people, particularly from their supervisors. Although, the sample size was small, the finding is robust because nondisclosure is associated with feeling guilty (22) and stigmatisation (22, 29) both of which have an emotional impact that can lead to life-threatening consequences if self-management is compromised.

Being in the workforce helps sustain emotional and social well-being (32). Consequently, living as normally as possible during transitions is important for everybody, including people with diabetes: For example, being active participants in the workforce is important to achieving a sense of autonomy and living a normal adult life (32). Workplaces can support or hinder diabetes self-management. Diabetes Australia, Victoria is a key consumer organisation and recently developed work place guidelines for employers and people with diabetes (33). However, there is very little research concerning young adults with T2DM's social and emotional well-being in workplaces. We were unable to identify any Danish guidelines or policies about young adult T2DM in workplaces; however, the Danish participants had positive attitudes to work; therefore, a systematic investigation of diabetes management policies in workplaces in Denmark is warranted.

Life transitions caused financial concern among the participants, and these concerns affected diabetes self-management, health service utilisation such as visits to specialists and transport to attend appointments. Our study showed Danish participants had fewer financial concerns than Australians. It is possible that the differences in the way health services are funded and delivered in the two countries influenced participants' financial concerns and their satisfaction with the care and education they received. Generally, the Danish participants were more satisfied than their Australian counterparts.

Implications for practice

Comparing Australian and Danish young adults with T2DM provided valuable information for health professionals about unmet support and service needs during life transitions. The young adults with T2DM in the two health systems reported similar needs and experiences. Similar needs related to flexibility in accessing health professionals, which could be improved by using technology and social media, for example relevant and evidence-based apps. Such flexibility would also help to minimise the common frustration among participants that services only were provided within common business hours, rather than being available to suit working hours such as night duty. In addition, health professionals need to provide more age-specific information about T2DM with a more positive and health promotional focus rather than focusing on diabetes complications. Individualised care plans should be managed through central data base to enhance communication among professional disciplines. Enhanced communication between health professionals would help this young adults with T2DM to manage their time and appointments more efficiently and minimise expenses when accessing multiple health services.

Individualised emotional and social support was identified as a common need. A focus away from medical diabetes-related issues to life events, and their impact on the individual person will assist health professionals to identify emotional responses like guilt, anxiety and depression. Information about common emotional experiences during transitions should be included in service and educational programs.

Social isolation was a major issue during life changes. Establishing specific support groups for young adults with T2DM with age-appropriate information, for example via social media should be an integral part of health services.

In learning from each other's health systems, it was evident that offering solid professional support at diagnosis, like the 3 day diabetes school in Denmark, made a significant impact to the way young adults with T2DM perceived diabetes and its management later in life. The Danes appeared to have a more positive outlook about diabetes and better diabetes control; thus, it is worth considering similar support programs in Australia.

Likewise, the Australian support material regarding diabetes management in work places could benefit Danish health professionals to assist their clients in their transition into the workforce. Furthermore, financial concerns must be addressed in consultation with young Australian adults with T2DM because health service expenditure causes uncertainty and emotional stress. Finally, it is worth considering implementing the Danish centralised pregnancy and maternity services in Australia to minimise uncertainty and stress-related emotions for Australian women transitioning into motherhood.

Limitations and strengths

This is to our knowledge, the first study that identified differences and similarities in psychosocial and health service needs of young adults with T2DM during life transitions. Detailed comparative coding by two experienced researchers in both countries during data analysis and frequent consultation with expert clinicians and researchers ensured the findings are highly credibility. We enhanced rigour by paying attention to the voices of the informants (authenticity), staying true to the topics under investigation (credibility), being reflective and critical to both the results and the decision made throughout the research process (criticality) and by having an ongoing reflection and self-criticality of the researcher (integrity) as recommended by Milne and Oberlee (34).

The findings do not fully enable us to go beyond the individual perspectives of the participants; however, they can be transferred to similar situations. According to Sandelowski (35), the sample size in qualitative studies should be large enough to achieve variations in experiences and enough to achieve data saturation. Twenty-six people were considered sufficient to maintain in-depth analysis. Our in-depth analysis provides findings that contribute to better understanding psychosocial issues operating during life transition in young adults with T2DM.

Conclusion

The current study indicated that psychosocial support needs of young adults with T2DM going through life transitions are complex and need to be planned based on individual needs. Thus, the participants in both countries highlighted that more flexibility in accessing health professionals, particular at the time of diagnosis, was paramount in care. More integration of technology and communication via social media were also critical in meeting psychosocial needs of this group of clients. Health professionals have to consider these findings in planning service planning and delivery. More comprehensive and longitudinal controlled studies will assist to gain more information about psychosocial care and health services needs for young adults with T2DM.

Acknowledgement

Thank to participants for their time and contribution for this project we wish to thank Research Assistant Anusha Chandar for her help in conducting interviews and literature reviews. We also thank the Quality and Patient Safety Research Centre, Deakin University and the Diabetes Clinic, Alfred Health, Melbourne, Australia, Alice Stamp Kristensen at Diabetes Outpatient Clinic, Viborg Regional Hospital, Denmark for support.

Author contribution

Bodil Rasmussen and Vibeke Lorentzen were responsible for the study design. Bodil Rasmussen, Vibeke Lorentzen and Anusha Chandar collected data, and Bodil Rasmussen, Vibeke Lorentzen and Anusha Chandar facilitated the data analysis. Bodil Rasmussen was responsible for drafting the manuscript, and all authors commented on drafts and gave final approval of the manuscript to be published.

Ethical approval

The study was approved in Australia by Deakin University Human Research Ethics Committee (HREC) 2012-305 in Australia, and from three public health services. In Denmark, the project was according to local policy and approved by the Danish Data Protection Agency (Journal number 2007-58-0010). The participants were guaranteed confidentiality and informed that participation was voluntary and that they could terminate their interview at any time without given a reason.

Funding sources

Quality and Patient Safety Research Centre (QPS), Deakin University (A1017). No conflict of interest.

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