

## Research and Theory

# Handling the transition of adolescents with diabetes: participant observations and interviews with care providers in paediatric and adult diabetes outpatient clinics

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## Abstract

**Purpose:** The purpose of this study was to explore how care providers handle the transition process from paediatric to adult diabetes outpatient clinic and to describe their perception of adolescents' needs during this process.

**Methods:** Participant observations of patient visits to nurses and physicians and 10 semi-structured interviews with care providers in two paediatric and two adult clinics in Sweden were carried out. Data were analysed using the constant comparative method developed in the grounded theory tradition.

**Results:** The integrated framework developed in the analysis consists of subcategories, process categories and a core phenomenon. The preparation phase showed in this study that *preparing transition requires modified strategies*. The transition phase implied *transferring responsibility and changing care relations* while the evaluation phase revealed that care providers are *creating mutual understanding through appraisal*. All categories are related to the generated core phenomenon: *enabling integration through professional meetings*. The way care providers construct meeting arenas has a crucial impact on the possibility to bridge uncertainty, insufficient knowledge, routines and strategies.

**Conclusions:** The way participating clinics handle transition greatly influences the process. Professional meetings appeared to be of vital importance to enable the building of bridges between paediatric and adult diabetes care in this study.

## Keywords

adolescents, Diabetes Mellitus Type 1, transition, grounded theory

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## Introduction

Adolescence is a challenging time for those living with diabetes. As the incidence of type 1 (insulin-dependent) diabetes has increased among children, due to a shift of diagnosis at a younger age [1], more adolescents will experience this challenge. The disease manifests itself differently in many aspects during this period compared to older adults and younger children [2]. There is a consensus that adolescence in general is a critical period of life, regarding health related behaviour, but for those with long-term illness in particular [3,4]. Several studies have reported highest mean HbA1c (outcome measure for glucose

control) during late adolescence [5–7], which has consequences for diabetes care providers. Support from peers and family is still of vital importance as well as care providers' attitudes and strategies; although studies have shown insufficient compliance to care recommendations among adolescents with long-term conditions [8–10]. Many authors emphasise the need for collaboration between paediatric and adult diabetes care in order to create a smooth transition between the links in the chain of diabetes care for adolescents during this vulnerable phase in life [11–13]. One important barrier to successful transitions has been found to be the healthcare system itself [14,15]. For instance, several countries report

that regional available organisational resources differ, which in turn influences transition strategies [11,16] and different ways to overcome the problem have been presented. Lately, countries like the United Kingdom and Canada have developed standards/guidelines for policies in order to improve transition outcomes and experiences [11,17]. Although the common goal is to achieve integrated diabetes care, the differing national and local conditions must be taken into account. Some authors emphasise that one way to increase transition outcomes is to organise special 'young adult clinics', in order to bridge the gap between two healthcare systems for adolescents with diabetes [18–20]. Kipps et al. [19] have shown that least satisfaction with transition occurred in the group that was transferred from paediatric to adult diabetes service without any special arrangements concerning the transition. Blum et al. [21] have suggested a definition of transition; "*a purposeful, planned process that addresses the medical, psychosocial and educational/vocational needs of adolescents and young adults with chronic and medical conditions as they move from child-centred to adult-oriented health care systems*" (p. 570). This definition has been acknowledged within a wide spectrum of clinical practice/guidelines [11] and research studies and focuses on the passage between two points (i.e. different health care systems). We agree with Kralik et al. [22] who emphasize that the individuals transitional process of inner re-orientation also has to be considered and viewed in order to provide holistic care. However, as this study is part of a larger project, the voice of adolescents with diabetes (and their parents) will be in focus elsewhere in the project.

The Society for Adolescent Medicine [23] claims several remaining unexplored questions about basic mechanisms during transition from child to adult healthcare systems. According to them, the most fundamental question is how to find effective strategies that can engage the adult care, so that young people can be successfully integrated in a coherent care system. Integration is often described as a continuum extending from more or less integrated care, where great differences between services implies a need for higher degree of integration [24]. As integrated care is a complicated phenomenon, it is important to employ various research methods in order to examine the wide range of strategies undertaken in relation to health care transition of adolescents [25]. In order to address this problem it is essential to explore both the perspectives of paediatric and adult diabetes care providers. Qualitative studies in different context are, therefore, needed and although interviews with care providers have been conducted previously, we have not found any study combining participant

observation and interviews in paediatric and adult diabetes outpatient clinics.

## Aim

The purpose of this study was to explore how care providers handle the transition process from paediatric to adult diabetes outpatient clinic and to describe their perception of adolescents' needs during this process.

## Method

This study takes a point of departure in ethnographic tradition in which the main research method is participant observation. This method requires the researcher to be involved in the social events under study as they occur in their natural setting [26–28]. By using the grounded theory method, ethnographers can make connections between events in order to study processes by selecting the scene to observe and direct attention to a phenomenon [29]. Focused ethnographies, commonly applied in nursing ethnography, intend to answer questions formulated before going into the field and can, therefore, concentrate on specific problem areas. Compared to traditional ethnographies the research can be completed in a shorter period of time [26]. Here, the focus was to explore the basic social process of the transition between two care cultures [13,30], based on care providers' actions, intentions and beliefs in relation to adolescents' needs [31]. A shift between insider (emic) and outsider (etic) perspectives [32] were accomplished by studying the care providers' view of the transition process and analysis of observed interactions and strategies in relation to similarities and differences between the settings.

## Settings and context

This study was conducted during 2005 in four different outpatient clinics in Sweden, two in paediatric and two in adult diabetes care. Two clinics were located in a university hospital in an urban city and two in a regional hospital in a smaller city. The hospitals are part of two different regions within a province implying similar political and financial management systems. Differences regarding number of patients/employees were related to paediatric or adult care and not to each hospital, with approximately 2–3 times more patients in the adult settings. Distinguishing conditions between the hospitals were the number of receiving adult outpatients' clinics which the two paediatric units usually referred their patients to. However, in the hospital which had a number of receiving clinics, the most common receiving one was chosen. The

hospitals were selected due to having both a paediatric and adult diabetes outpatient clinic in the same hospital. There were also pragmatic reasons for choosing these hospitals as field studies requires the researcher's presence in the natural context which is time consuming in itself without considering extensive travelling time.

## Participants and procedure

### *Participant observations*

Fifty-one focused participant observations were conducted by attending patient visits to diabetes care providers. Observation of patients' visits to almost all employed nurses and physicians in each setting was conducted in order to achieve a variation of encounters between patients and care providers. Total observation time was 100 h, with approximately 60 h of which was visits and group sessions, with the remaining time in waiting room area or together with care providers in relation to planned visits. Focus during observations was directed to events and care providers actions/strategies in relation to transitional issues and adolescents needs.

As visits to nurses and physicians constitute the basis of diabetes care such visits were chosen as the main focus when collecting data. Diabetes teams are usually composed of nurses, physicians, dieticians, counsellors/psychologists and chiropractors. Though, it differs to which extent these professions are involved in regular diabetes care. Patient visits were selected consecutively as they appeared. Inclusion criteria guided by common praxis for transfer in Sweden were: age of patient, 13 years and older in paediatric care, 25 years and younger in adult care, and type 1 diabetes. The observer was a nurse (CSL), not connected to any of the involved settings, but with experience from previous research projects with young adults with diabetes. The observer did not participate in the conversation during visits unless patients or parents posed questions directly. During other observations, i.e. informal conversations with care providers, patients and parents, the level of participation was higher, by conducting attendant questions in order to explore significant data. Field notes were dictated directly after observations and informal conversations with providers and transcribed later the same day, by the observer.

### *Interviews*

The first author conducted semi-structured interviews [32] with care providers, involving three physicians and seven diabetes nurses in the settings. One of these nurses worked part-time in both a paediatric

and adult outpatient clinic, located in the same hospital. Care providers were chosen according to their experience of diabetes care in relation to adolescents and both nurses and physicians in three of the four settings were interviewed. In one adult setting there was a lack of continuity regarding available employed physicians at the time of data collection, due to sick leave which is why three nurses were chosen instead. The informants were asked to give their view of adolescents'/youths' needs at the time before/after transition and current strategies related to the transition process as well as hindrances and possibilities related to this process. A conversational approach was used and the interviews lasted for 30–70 min. The interviews were tape-recorded and transcribed.

Throughout the whole process, theoretical ideas were formulated and documented in memos which directed focus on following observations and interviews.

The Regional Ethic Board in Gothenburg has performed a counselling statement regarding the study, according to current guidelines (Dnr: 381-04). Verbal and informed consent was obtained from all participants in interviews and regarding participant observations by care providers and the adolescents/youths/parents visiting the diabetes outpatient clinics just prior to the visit.

## Data analysis

Data were analysed by using a constant comparative analysis method developed in the grounded theory tradition [29,31,33,34]. The analysis started during data collection in one paediatric and one adult clinic and was thereafter carried out simultaneously with the remaining collection. The open coding process was carried out by the first author. Each line of data was examined in order to identify care providers' beliefs, events and actions in data, and segmented into smaller units, i.e. codes, by using the software NVIVO [35] for managing and sorting data. The codes were labelled concretely and after comparison similar phenomenon were given the same code-label. Data from interviews were compared with field notes from observations and vice versa. After systematic comparison of similarities and differences between codes, these were gradually grouped into potential categories, which were thereafter cross compared. The recurrent visits to each outpatient clinic made it possible to accomplish systematic checks of emerging categories by gathering more data in return visits. In this phase all three authors considered, discussed and revised the categories on a more abstract level and according to their hierarchical order until consensus were reached

**Table 1.** Illustration of steps in the coding process

Code	Subcategory	Process category
<ul style="list-style-type: none"> <li>• Transfer meetings not worthwhile (I)</li> <li>• Lacking knowledge of strategies in adult care (O)</li> </ul>	<ul style="list-style-type: none"> <li>• Bridging activities</li> <li>• Uncertainty of appropriate strategies</li> </ul>	Preparing transition requires modified strategies
<ul style="list-style-type: none"> <li>• Information about first visit in adult care (O)</li> <li>• Gain an image of future provider (I)</li> </ul>	<ul style="list-style-type: none"> <li>• Introducing adult care</li> </ul>	Transferring responsibility and changing care relations
<ul style="list-style-type: none"> <li>• Meeting each other once or twice a year (I)</li> <li>• More contact after new post (I)</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing contact desired</li> </ul>	Creating mutual understanding through appraisal

(I) = Interview (O) = Observation

(see example in Table 1). Data collection proceeded until no new insights were yielded in relation to emerging categories.

The categories were finally integrated into a framework where causal and intervening conditions and consequences of events, actions and beliefs in the settings and the transition process were sought after and specified. In this phase, the core phenomenon was identified as central to all generated data and emerging categories.

## Results

The integrated framework developed in the analysis consists of subcategories, process categories (similar to main categories) and a core phenomenon. The preparation phase showed in this study that *preparing transition requires modified strategies*. The transition phase implied *transferring responsibility and changing care relations* while the evaluation phase revealed that care providers are *creating mutual understanding through appraisal*. Subcategories will be further elaborated and illustrated by quotes from interviews (I) and observation field notes (O) in paediatric care (P) and adult care (A). All categories are related to the

generated core phenomenon: *enabling integration through professional meetings* (Table 2).

### Preparing transition requires modified strategies

The first step in the transition process is to prepare adolescents for transition from paediatric to adult diabetes care. This is a time for changes regarding adolescents' individual and social development and care providers are not quite sure of how to best prepare adolescents for adult life and care.

#### *Uncertainty of appropriate strategies*

Diabetes care providers perceive many adolescents as more mature and with a growing responsibility for themselves and the self management of their diabetes. However, adolescents seem to have problems in finding their own way in a revolutionary phase. Self management is not always the highest priority, and providers express frustration at finding appropriate types of meetings and strategies which could suit adolescents' needs. It is unclear to them why adolescents are usually not interested in group meetings and day-care: "... they don't listen to this just now... they don't think it is particularly important or interesting..."

**Table 2.** Integrated framework of core phenomenon, process categories and subcategories illustrating adolescents' transitional process from paediatric to adult diabetes care

Enabling integration through professional meetings		
Preparing transition requires modified strategies	Transferring responsibility and changing care relations	Creating mutual understanding through appraisal
<ul style="list-style-type: none"> <li>• Uncertainty of appropriate strategies</li> <li>• Adjustment of strategies</li> </ul>	<ul style="list-style-type: none"> <li>• Deciding time for transfer</li> <li>• Ending relationship in paediatric care</li> <li>• Introducing adult care</li> <li>• Exploring knowledge and motivation</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing contact desired</li> <li>• Improving strategies after feedback</li> </ul>
<ul style="list-style-type: none"> <li>• Bridging activities</li> </ul>		<ul style="list-style-type: none"> <li>• Need for organisational changes</li> </ul>

*I would like to find other ways to meet ....perhaps it's not the right time..." (1-A)*

There are problems with preparing adolescents appropriately, as providers in paediatric care seem to lack knowledge about current strategies in adult care. However, this problem seems to have decreased in the setting where one nurse works part-time in both paediatric and adult care.

#### *Adjustment of strategies*

One care provider in adult care differs from all other participants by emphasising that she does not believe the needs of adolescents differ from other patients with diabetes, except that family relations are often stronger when the diabetes debut occurred during childhood. Despite this, she claims exchanging practice knowledge as fruitful: *"it would probably be good for the patients, to prepare and for us to know what they have been used to before, because we actually don't know that, well I don't anyway"* (I-A). All the other providers stress the need for adjustment of attitudes and strategies when dealing with adolescents during this time. The consequences of previous category, uncertainty of appropriate strategies, are closely related to a need for adjustment of strategies.

#### *Bridging activities*

Different aspects emerge regarding adult care providers need of acquiring knowledge about or seeing patients before transition. One clinic did previously conduct a special kind of 'transfer meetings', together with paediatric care providers in the same hospital, which ended due to high staff turnover and increased workload. One informant claims that this routine might be good for patients, but she has no personal need to meet patients before transition. This former bridging activity can be compared with the joint last visit at the other clinic where one adult care provider states: *"It is important for us to hear how it has...what affects the adolescent and what their weaknesses ...you can't just say that they have neglected themselves but there are a number of problems which they have no control over ....which makes it difficult and you should have an understanding of this as well when they come"* (I-A). Accordingly, the strategy with joint last visits seems to provide improved comprehension regarding how patients' conditions during childhood could have affected their disease control.

## **Transferring responsibility and changing care relations**

This stage involves sending adolescents from paediatric care as well as receiving them in adult care.

Several aspects have to be considered when ending the provider–patient relationship and starting a new one. The clinics' prerequisites have great influence on how strategies in the transitional stage can be worked out, although all providers agree on paediatric responsibility for patients until transition is completed.

#### *Deciding time for transition*

Current routine for transition in both paediatric settings is at the age of high school graduation, with some exceptions due to individual needs. Some providers express that adolescents and sometimes their parents have concerns about leaving the familiar environment: *"I think that there are quite a lot who almost beg and pray to stay and they bring up the question themselves of when they have to leave ..."* (I-P). Another provider describes how she usually mentions the transition when the patients are about 16 years of age, and then repeats the information again the last year of high school. She emphasises that it is the provider's decision, although in collaboration with patients. Adult care providers in turn, sympathises with the ambivalence of transferring adolescents with unstable metabolic control, but claims that it is sometimes harder to receive these patients when they are older than current routines prescribe.

#### *Ending relationship in paediatric care*

There are some differences between the two paediatric clinics regarding how they end the care relationship. One of them always invites a nurse from adult diabetes care to join the last visit, together with the physician and nurse who has been responsible for the patient in paediatric care. The other clinic does not have these routines and it is not always planned prior to a visit that it will be the last one. Nurses, who are not aware of this may in such cases, miss the opportunity to say goodbye which is why frustration at not having the chance to end long lasting relationships with patients is expressed.

Paediatric providers have experienced patients who call for prescriptions and equipment after the last visit, due to long waiting time before entering adult care. In those cases, the appearance of a lost referral letter will be known for paediatric providers: *"The young man came with his father for his first visit to adult diabetes care. He told me himself that they had already talked about it when he was 18 that he would transfer, but that there could be a long waiting time. When he hadn't been given an appointment for 1½ years, he rang to paediatrics himself because he needed a new prescription"* (O-A). However, all care providers seem to agree that it is always the paediatric care that has responsibility until patients have had their first visit in adult care.

### *Introducing adult care*

One of the paediatric clinics has to decide which of the six different clinics in the region will be appropriate to refer patients to, according to their requirements and wishes, although these cannot always be fulfilled. This can lead to a prolonged delivery process when referral letters are sent on to other clinics in the region, due to available resources. This problem is prevented by joint last visits in the other paediatric setting which only has one receiving clinic located in the same hospital, and on occasion refers to a more distant clinic. The risk for lost referral letters seems to increase when no specific transitional arrangements are conducted.

When diabetic nurses from the adult care attend the last visit, they can inform adolescents about practical issues and describe current routines in adult care: *“The nurse, working in both settings, gives the phone number at both places and says that he will be given an appointment in September and perhaps to day-care group if he is interested sometime next year”* (O-P). Patients get to know ‘a face’ and can raise questions about things of interest for them, and a sense of safety can be achieved when meeting the new provider before transition. The other hospital does not have this routine, but sometimes a paediatric diabetes nurse visits adult care together with the patient, which can only be done in the adult clinic located in the same hospital.

### *Exploring knowledge and motivation*

Adult care providers emphasise the importance of making an exploration of adolescents’ own knowledge concerning their diabetes and management related to it, as parents have often had responsibility during childhood and early adolescence. Sometimes adolescents are fairly knowledgeable about certain issues, and less about others, therefore, it is essential to assess each individual’s need of information and education. The appropriate time to check adolescents’ current knowledge is after transition to adult care. One care provider claims that they often are knowledgeable but lack motivation to act upon demands of self-management: *“It’s not really the knowledge that is lacking, but the motivation to self manage and understand ... there are so many other things at this age which is important to them”* (I-P).

## **Creating mutual understanding through appraisal**

Routines for feedback from adult to paediatric care regarding patients proceeding life with diabetes differ and are closely related to the degree of contact

between the settings. Care providers express a desire for increased contact and proposals for organisational changes in order to create a mutual and comprehensive understanding of conditions and consequences of care strategies in relation to adolescents needs.

### *Increasing contact desired*

One condition which has influenced the prerequisites for contacts between the teams in paediatric and adult care is the recently created post for a nurse to share the time between the paediatric and adult outpatient clinics. A paediatric diabetes nurse occupies this position and this strategy seems to have increased contact between the settings. Moreover, care providers have achieved improved knowledge about each others routines and strategies, which in turn implies benefits for patients. As one nurse expresses: *“I think it’s good, now we get a totally different offer from the PDC thanks to the new nurse from paediatrics... it gives us so much more, there are so many things that we don’t always think about on the adult side and vice versa...we have already understood that the nurse has implemented certain things that no one thought about before”* (I A). This could be put in relation to the other hospital, where one nurse in adult care would like to meet paediatric providers at least once or twice a year, in order to improve contact between the settings.

### *Improving strategies after feedback*

The hospital, which transfers adolescents to several different clinics has never had a routine for feedback after transition, which they acknowledge as a deficiency. Except information about development of disease control and self-management, they claim a possibility to design their strategies in a better way, if a forum for feedback could be established. However, they are not sure that adult care providers share this need for contact afterwards. At the other hospital, nurses and physicians from paediatric and adult diabetes care previously met once or twice a year, in order to discuss common patients. These meetings were considered as valuable and worthwhile. Unfortunately, according to care providers there have been no such meeting for the last few years due to practical reasons and available resources. One paediatric nurse expresses the importance of following-up patients with whom they have had frequent and long-lasting contacts, sometimes without experiencing any improvement regarding disease control and self-management: *“It is nevertheless quite encouraging if you find out that something of what you did has stuck...and that they have benefited from the support they received then, maybe it will turn out better in the long-term anyway...so it’s very important I think”* (I-P). Adult care providers seems to understand their desire for feedback, as they often experience that

even problematic patients become more responsible and manage self-care after a couple of years in adult care.

#### *Need for organisational changes*

There seems to be a distinct need for organisational changes in the transitional process, especially at the hospital with no special arrangements concerning the transition. Hence, all providers give examples of how these changes could be designed, which signify that even if some arrangements are made, care providers express that there still remains a lot to do in order to improve transitional conditions. One example is to change the organisation by arranging a special clinic for youths, aged between 16 and 25 (or 18–25), either located separately or connected to adult care. Another is to let nurses from ADC participate in the teenager camps arranged by paediatric care in order to prepare transition which in turn have impact on the preparation phase.

### **Enabling integration through professional meetings**

The core phenomenon includes all aspects of how the transition process of adolescents from paediatric to adult diabetes care is understood and constructed in this study. The casual conditions were identified as three phases in which the transition process proceeds. Intervening conditions and strategies were found to be the way care providers constructed meeting arenas, which appeared to have a crucial impact on the possibility to bridge uncertainty, insufficient knowledge, routines and strategies in provided care. These strategies mediate between two different care cultures and improve the clinical practice of transition. Professional meetings establish relations and enable collaboration between care providers and may contribute to increased comprehension of adolescents' needs during transition. Organisational arrangements as the combined post in one of the two hospitals were found to support the integration of paediatric and adult diabetes care through all phases of the transition process.

### **Discussion and conclusion**

This study has examined how four different clinics handle a well recognised problem in healthcare organisations, namely the transition from paediatric to adult care for adolescents with long-term conditions. Accordingly, the settings can state examples of strategies fostering or hindering successful integration of paediatric and adult diabetes care in order to optimise

youths' experiences of transition. Unfortunately, our findings do not support the notion that transition of adolescents is supposed to be accomplished through a "purposeful, planned process" according to the definition of Blum et al. [21]. Previous research which has identified the three phases of transition process, preparation, formal transition and evaluation, also found insufficient implementation of these stages in diabetes settings [15]. This study adds to this knowledge by comparing two different systems, in which it became obvious that the professionals contact between settings had significant impact on possibilities to promote transition strategies, in all stages of this process. Åhgren [36] and Kodner and Spreeuwenberg [25], among others, argue that it is of crucial importance that links between care providers work well in order to achieve integrated care. Our results show how essential the degree of contact between the links in the diabetes chain of care is for: a) improving knowledge of each other, b) implying forums for discussions and feedback, and c) continuity in provided care strategies. In this study the organizational, service delivery and clinical strategies has been addressed by exploring formal and informal collaboration, continuity and co-ordination of care, understanding of patients' needs, specific and common practices and feedback [25].

In our study one nurse works in both the paediatric and adult diabetes care in this hospital, implying more opportunities for natural and informal ways of following patients into adult life and care. Originally, the post was created for practical reasons but turned out to be a strategic advantage for the degree of contact, exchange of knowledge and the extent of collaboration between settings in this hospital. This quite simple but nonetheless innovative organizational strategy seems to be rarely present, at least in Sweden. The findings regarding the need for collaboration are in congruence with earlier findings [2,13]. Kipps et al. [19] have reported less clinic attendance after transfer to adult care, but higher rates appeared when the adolescent had met someone from the adult team before transfer, which also signifies the importance of contact and collaboration. Another benefit of joint visits prior to transition is a declined risk for lost referral letters which some of our informants described as a problem. Joint last visits might be preferable to 'transition meetings' which one clinic had experience of, as these did not include patient participation, but improved knowledge of patients' history and reasons for chosen diabetes regimen and management during time in paediatric care. The multidimensional factors influencing metabolic control in adolescence may have forced care providers to make trade-offs regarding metabolic treatment goals during childhood, according to chil-

dren's and adolescents' developmental psychological and physiological needs. Although it is proven that increased metabolic control delays the presence of long-term complications [37], a number of studies have failed to prove association between quality of life and metabolic control among adolescence [38–40]. What adolescents with diabetes do need from care providers during this transitional process is a shared understanding of their needs and agreed clinical practices. This requires on-going contact and feedback between care providers in these two healthcare systems, which is in line with a practical application of Kodner and Spreeuwenberg [25] definition of integrated care.

## Methodological considerations

The two hospitals had very differing prerequisites, which could be assessed both as an advantage and a limitation. According to this qualitative analysis it was beneficial to describe the variation of conditions and strategies characterising a university hospital and a regional hospital. Some of the most contrasting results emerging were due to such differences. As human behaviour is always strongly mediated by the context in which it occurs [34,41] the goal of this study was to gain insight of how care providers handle the transition in these four settings. Participant observation brings its own methodological challenges and the role of the observer is not uncomplicated. We would prefer the informants to forget that we are doing research, which naturally is impossible when conducting overt observation [27]. In our study, most of the care providers were used to having medical students and visiting medical salesmen present during visits, which simplified this potential problem. According to our findings, there is no reason to assume that the presence of the observer negatively influenced the data generation.

One common way to ensure credibility and confirm ability in qualitative studies is to let participants respond to the findings. However, in this study it was possible to check hunches and statements throughout the analysis by the recurrent visits to each setting instead. Combining observations and interviews promoted the stringency in developing categories by comparing emerging data from both sources. Furthermore, in the overall analysis, findings were cross compared in relation to similarities and differences between the settings, which could make it hard for care providers in each setting to confirm emerged data. Using the constant comparative model as anal-

ysis method, with emphasis on casual and intervening conditions, strategies and consequences facilitated a more systematic analysis, decreasing the risk for 'getting lost in data'.

One limitation is that involvement of other professionals is only described through the participating nurses and physicians or by following patients' contact with other team members during observations. The voice of dieticians and psychologists could have enriched the findings, although, in this study their presence and participation was not shown to be of crucial importance for transition issues. However, according to other research findings, these professionals should be included in multidisciplinary approaches in order to meet the needs of adolescents at a time of social, psychological and developmental changes [15,30].

## Conclusion

The way participating clinics handle transition greatly influences the process. Professional meetings appeared to be of vital importance to enable the building of bridges between paediatric and adult diabetes care in this study. Due to the clinics' different prerequisites, we must consider that there may be various infrastructural arrangements for transition of adolescents with diabetes from paediatric to adult care, suiting shifting healthcare systems. Letting a nurse and/or a physician share their time between paediatric and adult diabetes care might be an intervention to implement in practice in order to achieve integrated care. This could be one way to substantially affect the settings care conditions and thereby consequences of strategies related to the needs of adolescents during transition.

## Reviewers

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