

Prenatal diagnosis and termination of pregnancy: perspectives of South African parents of children with Down syndrome

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Abstract This study aims to evaluate the attitudes of a group of South African parents with a preschool child with Down syndrome (DS) towards prenatal diagnosis (PND) and termination of a Down syndrome-affected pregnancy (TAP). This study employs a qualitative phenomenological approach with the use of semi-structured interviews. Twelve participants were recruited from two state sector hospitals in Cape Town, South Africa. Thematic analysis was used to interpret the data. The participants had a positive attitude towards PND and felt that it was every parent's right to have the option. They considered a benefit of PND the fact that it allowed parents time to prepare for the arrival of a baby with DS. The induced miscarriage risk associated with invasive prenatal testing procedures caused major negative feelings. They were totally opposed to the termination of a Down syndrome-affected pregnancy due to their personal experience, moral, ethical or religious convictions. South African parents of preschool children with Down syndrome are comfortable with PND for Down syndrome; however, they do not support TAP. These findings will provide health care providers with further insight into the motivations behind the decisions their patients make.

Keywords Down syndrome · Prenatal genetic diagnosis · Termination of pregnancy · Parent attitudes · Qualitative research · Africa

Introduction

South Africa (SA) is a country of 50 million inhabitants, rich in ethnic, cultural and religious diversity. The population comprises the following ethnic groups: black African (76.7 %), Caucasian (10.9 %), mixed ancestry (8.9 %) and Indian and Asian (3.5 %). Christian faith (75.5 %) is practiced by the majority of the population and the Muslim belief represents 1.4 %, practiced mostly by the mixed ancestry population. Specifically, in the Western Cape Province, the majority of the population is of mixed ancestry (59.6 %) and Caucasian (18.5 %) (Statistics South Africa 2004). A small portion of the population has completed education at the secondary level and above (20.4 %), while the great majority has a lower education level (Statistics South Africa 2004). The unemployment rate in SA is high and is currently estimated at 24.9 % (Index Mundi 2011).

A large number of individuals cannot afford medical insurance and make use of the free-of-charge state sector medical services; nonetheless, the utilization of these services is impeded by transport costs, bureaucracy and complex management patterns (Goudge et al. 2009). The double burden of both infectious and non-infectious diseases in SA is causing further constraints on the demographic and socio-economic transitions in this country. It is predicted that non-communicable diseases, including genetic conditions such as Down syndrome (DS), will cause seven out of ten deaths by 2020 (Mayosi et al. 2009).

Children with DS present with intellectual disability and possibly congenital malformations including heart defects (Marder and Dennis 1997). As DS is common and carries a burden of ongoing medical management for those affected, it has led to the development of prenatal screening policies in most countries, including SA (Bryant et al. 2006). The

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prevalence of DS in Cape Town (CPT), in the Western Cape, SA, has been estimated as one in 670 live births (Molteno et al. 1997).

The SA National Health policy states that free amniocentesis should be offered to all women of advanced maternal age (AMA). However, due to lack of financial resources in this country, biochemical screening is limited to the private sector only and prenatal diagnostic (PND) procedures to tertiary centres only (Geerts 2008; Urban et al. 2011). Even though these services have been available since 1979 in SA, they are underutilized due to lack of knowledge and the late initiation of antenatal care (Kromberg et al. 1989; Pelsler 1998; Watcham et al. 2007; Urban et al. 2011).

During the 2-year period 2008–2009, the uptake of amniocentesis in CPT West area was estimated at 38 %. The uptake in Johannesburg and CPT East was estimated as 29.9 and 52.2 %, respectively (Urban et al. 2011). A study by Lampret and Christianson (2007), specifically focused on SA women with a child with DS, found that 76 % of the 50 interviewed would consider PND for a follow-up pregnancy and 42 % would have a termination of an affected pregnancy (TAP).

According to SA law, following a confirmed prenatal diagnosis of DS, the pregnancy may be terminated up until a gestation of 24 weeks (Morrone et al. 2006; Alouini et al. 2011). The data available in SA on the number of individuals that would opt to have a TAP are limited; there is a great diversity of cultural and religious beliefs, and TAP is regarded as controversial and remains a taboo topic, even though this procedure is becoming more acceptable and the demand for it is increasing (Mendes and Basu 2010; Devjee et al. 2012). Devjee et al. (2012) indicated that 61 % of 769 SA women, who had a TAP in KwaZulu Natal, were against the procedure and only did so due to circumstances beyond their control. These circumstances included poverty and coercion by a partner or by parents as teenage pregnancy was culturally considered unacceptable. Mdlalen-Bookholane (2007) interviewed 98 black SA women on how they felt after having a TAP. The majority was happy and relieved but some felt feelings of guilt, shame, sadness and regret as their decision was in disagreement with their cultural, moral and religious beliefs.

There is a paucity of literature available in SA on the attitudes of the public towards PND and TAP. The available literature has mainly focused on the attitudes of the general public in first-world countries towards PND and TAP (Julian-Reynier et al. 1993; Lo et al. 2009). Furthermore, few studies have centred on the views of parents with a child with DS regarding these options (Elkins et al. 1986; Bryant et al. 2006). In addition, there is indeed a paucity of in-depth qualitative studies focusing on the attitudes of parents of a child with DS towards PND and TAP in general, and to the

best of our knowledge no studies have been reported in Africa (Christianson and Modell 2004; Lampret and Christianson 2007).

The successful utilization of such disease prevention programs is generally dependent on the education and attitude not only of professionals but also those of the public (Giardiello et al. 1997; Wonkam and Angwafo 2006). It is therefore important to gain insight into the attitudes of the public towards these programs, which leads us to the aim of this study, which was to investigate the attitude of a group of SA parents raising a preschool child with DS regarding PND of DS and TAP. This group was selected specifically for study for the following reasons: (1) there are no data available in South Africa on the experience and attitude of parents who have a child with DS, (2) from our experience, it seemed that not many women who have a child with DS who attend our clinical genetics services would opt to have invasive testing in a future pregnancy and a termination if the child is affected, (3) this specific group could represent an influential group on how the population in general perceive invasive testing for DS and subsequent TAP and (4) further insight into the attitude of these parents towards PND and TAP will allow for better provision of PND and TAP services, including pre-test counselling to ensure that individuals make decisions in alignment with their moral, religious and ethical beliefs.

Method

Research design and ethical considerations

A qualitative phenomenological cross-sectional approach was selected for this study as it is considered to be valuable when investigating a topic for the first time. The phenomenological approach was consistent with the aims of this study as it focused on describing people's understanding of experiences and behaviour and the meanings and interpretations they attach to these (Holloway 2008). Data were collected at one point in time as it was the most cost-effective. The study was granted approval by the Research Committee of the Department of Clinical Laboratory Sciences and the Research and Ethics Committee of the Faculty of Health Sciences of the University of Cape Town, SA (reference number 252/2010).

Research population and setting

Purposive sampling was used to recruit participants between the period of July and October 2010. The following inclusion criteria were used: parents of children with DS between the ages of 1 and 6 years old who either spoke Afrikaans or English as their home language and who still attended the

health care services at either one of two state sector hospitals in CPT, SA: Red Cross War Memorial Children's Hospital (RCWMCH) and Tygerberg Hospital (TBH).

Parents who met these criteria were identified by two health care professionals conducting early intervention programs at the two state hospitals in CPT. Both of these health care professionals were involved with local DS support groups. They explained the aims and objectives of the study to the parents. The parents were given a week to decide if they were willing to participate. Twelve participants were selected by the researchers from the group of willing participants due to time constraints. The selected participants were representative of parents of preschool children with DS who made use of the health care services offered at these hospitals. Seven participants were recruited from the RCWMCH and five from TBH.

The participants were contacted by the researcher to set up an appropriate time for the interviews, which were conducted at a private venue of the participants' choice: seven took place at the RCWMCH and the other five at the offices of the local DS association. All of the participants were involved with the local DS association and the ones who chose to be interviewed at the association offices felt more comfortable in this environment than in a formal hospital setting. The social worker of the association provided them with transport and therefore choosing this venue did not lead to additional expenses on their behalf.

Instrumentation

Interview guide

In-depth face-to-face interviews were conducted with the use of a semi-structured interview guide (“Appendix”) constructed by the investigators. The interview guide addressed the following topics: sociodemographics, understanding of PND and attitudes to PND and TAP. The schedule combined closed-ended and open-ended questions. Prompt questions were used to gather the maximum amount of information in the allocated time. Content validity was established through a pilot study and critical review by the researchers, a medical geneticist and a social scientist from the Division of Human Genetics, Faculty of Health Sciences, University of Cape Town. The reviewers indicated that the interview schedule was comprehensive and that all questions were relevant and sequentially appropriate.

The research was conducted by a single researcher as was required for her master's dissertation. Reliability was ensured by regular meetings and discussions with her two experienced supervisors (a medical geneticist and a social scientist)

regarding the interpretation of the interview findings, the most appropriate coding of the data, and the decision-making process of deciding on the codes, the patterns of the categories and the lines of enquiry that led to the conclusions.

Pilot interviews

Two pilot interviews were conducted to ensure that the items on the interview schedule were easily understood. While conducting these interviews, we took note of any signs such as body language and facial expressions indicating that the participants were uncomfortable or confused by the questions. Both of these interviews were conducted in Afrikaans and took between 30 and 50 min to complete. The data obtained from these interviews were not included in the final results of the study.

Procedure, risks, benefits

The health care professionals at the RCWMCH and TBH, as well as the researcher, informed the parents of the aims and objectives of the study. The selected participants who were willing to participate were contacted by the researchers to arrange a venue, time and date that were convenient for them to be interviewed. The investigator remained sensitive and respectful of the participants' emotions throughout the interviews. Confidentiality and anonymity was ensured at all times. The opportunity to discuss and deal with emotional issues evoked by the interview was given to all participants during a follow-up telephone call or meeting.

Data collection

The researcher explained the purpose and the procedure of the interview and obtained written informed consent from each participant before the interview was conducted. All interviews were conducted by the same investigator. Seven were conducted in English and the remaining three in Afrikaans. These digital recordings were transcribed verbatim and the transcripts were anonymised by removing personal identifiers which could link a particular participant to a specific interview.

Data analysis

The transcripts that were not in Afrikaans were translated into English to make the analysis easier. The researchers systematically sifted through the transcripts to interpret and capture the participants' responses. Thematic analysis was used to interpret the data collected from the open-ended items of the interview schedule. Analysis sought to identify

patterns in participant responses across the data. Each pattern was used as a code and coding of the dataset was done to determine the frequency of each (Braun and Clarke 2006; Pope et al. 2000). Themes were derived from the most frequent patterns which captured something important about the data in relation to the research question (Braun and Clarke 2006). The responses to specific sections, especially the closed-ended items, were characterized by frequency and descriptive statistics.

Results

Sociodemographic characteristics

Twelve parents consented to participate in the study. Two of the parents were used for pilot interviews and the data collected from these were not included. The remaining ten interviews were conducted with nine mothers and one father of preschool children with DS. They were all of mixed ancestry ethnicity and their ages ranged between 19 and 46 years old. Six of the participants were unemployed, married and had not completed secondary education. The participants were from lower- to middle-income groups and lived in lower socio-economic areas of CPT, SA. Six participants defined themselves as Christian and four as Muslim.

Past medical history of prenatal investigations for DS

Nine of the participants went for routine ultrasound scans while they were expecting their child with DS. The one, who did not go for any screening, was in her teens and was not aware of the importance of routine scans. Soft markers for DS and foetal anomalies were detected during the pregnancies of three participants and they were offered PND. Two of them requested testing and one declined for religious reasons. None of the others were offered PND as they were either not of AMA when they were expecting their child with DS or they were too far advanced in their pregnancy for tests to be performed safely.

Knowledge of recurrence risk of DS and prenatal investigations

The participants were asked to describe their understanding of the risk of having another baby with DS. The majority of the participants knew that it was possible to have another baby with DS, while two wrongly thought it was not possible and two were unsure. When asked to elaborate on their understanding, it was clear that only four of the participants had an accurate perception of their risk. None of the participants understood what was meant by prenatal screening

tests even though they were all aware of the option of having ultrasound scanning done. All participants were aware of the option of PND and the majority had some insight into how the amniocentesis is performed. One participant explained it as, “they take some blood from the baby inside the womb”. This participant could not recall the name of the procedure and therefore it is unclear whether she had a misconception regarding amniocentesis or whether she was in fact describing the cordocentesis procedure. Another participant had a clear misconception about amniocentesis by stating that the test was performed through the navel.

Attitude towards PND

As the participants were familiar with PND, they were asked to describe their feelings regarding this option. The themes that emerged from their responses are discussed in the following subsections.

Right to have a choice

There was a strong feeling amongst the participants that all individuals should have the right to choose whether they wanted PND testing. There was a sense of empowerment by providing them with the option to know if the baby had DS before birth. They felt that it should be offered to all pregnant women as highlighted by the following response:

“I think that it should be available to everybody. They should not only consider doing it if the woman's age is over 30, but it should still be the choice of the woman whether she has the test or not.”

This participant was not given the option of PND as she was not of AMA when she was expecting her child with DS, which possibly contributes to her response.

It was interesting that even the participants who stated that they would not go for PND themselves still felt that it was the parents' right and that it was important that they be given the opportunity to make that decision. This was made clear by the response of a participant who would never have availed herself of PND or even recommend it to her friends:

“It's your right as a parent and as an individual to make that decision, but I personally wouldn't have it done.”

Being prepared

PND enabled the parents to prepare themselves for the arrival of a child with DS, which was identified by the majority of the participants as a clear benefit.

This was highlighted by a young mother who did not go for any scans or PND when she was expecting her child with

DS. When asked how she felt about the available testing options, she responded:

“I think it is a good thing. You need to know about your child's health, because if you are not aware many things could happen which you will not be able to understand, because of the stress at the time of the birth, so it's best to know and be prepared.”

As she was unaware of the fact that her child had DS when she was born, she had no idea what caused the complications her child had at birth and why she had to stay in the hospital for a few days. This was a traumatic experience and therefore she felt it was important for parents to know before the child's birth.

A similar view was shared by a participant who was of AMA but was not offered PND due to late gestational age. When asked what her feelings were surrounding PND, she responded:

“It is a good thing, because just now your child is born with DS, as in my case, and you did not even know or have time to prepare yourself. It is actually a bigger shock for you and more difficult to accept when the child is already born.”

A participant, who had known about her child's diagnosis prenatally, makes the benefit of PND clear in her response:

“For me it was a good idea to do the test and find out before birth that he had DS, because if I had to give birth and they had to tell me afterwards, I think it would have been more difficult to hear.”

Harmful to unborn child

The miscarriage risk related to PND had an effect on the attitudes of some of the participants. They believed that the possible harm to the baby was definitely a major negative aspect. This was emphasized by the response of a participant completely against PND:

“I wouldn't go for it, because you read so much that it can harm your baby, you can miscarry. I wouldn't want to do that to an unborn child.”

The possible harm to the foetus was the deciding factor for a participant who was of AMA when she was pregnant with her child with DS. She had heard about PND options from her friends but gave the following explanation for why she was against testing:

“My friends and sisters told me that if they send me to the hospital for the needle-test (amniocentesis) then I mustn't have it done, because it is dangerous for the child.”

Attitude towards termination of pregnancy

All of the participants were aware of the option of TAP. Four of the participants were against TAP in all circumstances, whether the baby is healthy, has DS or a more severe disability. Two of the participants felt it was acceptable to have a TAP for a severe disability, but not for DS. None would terminate the pregnancy if the foetus had DS as most experienced their child positively and saw these children as “special”. The majority was completely against giving people the choice of TAP. The few participants who felt it was good to give the parents a choice believed that some parents would be neglectful and not treat the child with enough love and care. The following themes emerged from the participants' responses regarding their attitudes towards TAP:

Ethics and morals

There was a strong belief amongst the participants that having a TAP was morally and ethically unacceptable. The procedure was described by many as murder and some had a strong moral sense that it was wrong.

One participant acknowledged that it is the individual's personal choice even though she found the thought that babies with DS were being terminated unsettling and stated that she “would try her best to convince them otherwise”. When asked if she would terminate, she responded:

“I've never killed anybody and I won't do it to my own child.”

This participant felt that it was similar to murdering a grown person, which was also a strong feeling amongst another participant who gave the following description:

“It's almost like I can tell my father: ‘Listen, don't you want me anymore? Then put a bag over my head and kill me.’ It's the same thing.”

Precious child

The thought that all children are precious and should be given a chance to live was another recurring theme amongst the participants' responses.

One participant, whose child with DS had a lot of health problems at birth, responded:

“I personally think that every child deserves a life; whether it is a disabled child or whether it is any other type of child, come let me give you life.”

After this participant's experience with almost losing her child, she believes that every child, regardless of whether the child has DS or not, deserved a fighting chance. Another

young mother who was advised by her family to stop the pregnancy for social reasons felt similarly and emphasized the innocence of a child in her response:

“I will never terminate, because it is really wrong. I mean after all that is a life you are carrying inside of you. I mean it is an innocent baby that did nothing to anybody. It just wants to be in the world so I think it is wrong for parents to abort a baby, even before a month. It is totally wrong.”

One of the participants agreed that all children are precious and even more so children with DS. She responded:

“Why terminate a pregnancy if the child is DS, because they are so special? What more would you want? They bring happiness, luck, love and families closer together.”

It was clear from this participant's response that she had had only positive experiences regarding her child with DS, which made it difficult for her to comprehend why people would not want these children. A participant who was offered a TAP was also against the procedure as she had only had positive experiences with raising her child with DS. She would recommend other parents in a similar situation to make the same decision to keep the baby.

Religion

Religion was a major determining factor in the attitude of the participants towards TAP. Negative feelings towards TAP were especially seen amongst the participants of Muslim faith. The participants who were of Muslim belief had the strongest negative attitudes towards TAP. This was explained by their religious belief that these children are blessings and will carry them into heaven one day. One of the participants, who attended an Islamic boarding school and memorized the whole Koran, gave the following explanation:

“A DS child, or any child that is not of full mental ability or is physically disabled at birth, are promised to go to Jannah (heaven). Our religion says that they are going to be waiting for us no matter how long. So it makes things a lot easier for us.”

This same participant continued: “whatever the Man above gives us, you must take. He won't give you something you can't handle.”

Another participant who was from a religious Muslim family and regularly attended the Maka supported this view by responding:

“If the Lord chose this path for me then I must take it. My sister-in-law went to the Maka and there we were

taught that TM (child with DS) is going to take me to heaven, because she is the Lord's child.”

The participants who were strongly motivated by their Christian faith seemed to have a similar view. A participant who was from a Christian family responded:

“I don't think it is our decision to take away that child (with DS). God won't give you life, if He didn't want you there. He would've taken it away Himself.”

A participant, who had had PND and was faced with the decision to decide about TAP, gave the following response when asked how she felt about TAP:

“I don't think it is right. God looks at us and He determines whether you will be able to carry your cross. I think we as parents are being tested and we are special parents that were chosen. When I had to make that decision, I went to my priest and to my friends in the church congregation to help me make the right decision. With their support I decided to keep my baby and felt that if it was in God's will for me to hold the baby I will, if not He would take the baby away.”

Discussion

There is very little information available on attitude towards PND and TAP of parents who have a preschool child with DS worldwide and the findings of this study will add to the literature, specifically from a sub-Saharan African perspective.

In general, the participants were pro-choice regarding PND and believed that everyone had the right to decide whether they wanted to know if their baby has DS before birth. This was an interesting finding which further strengthens the belief that the under-utilization of these services in SA is not due to negative attitudes but due to accessibility difficulties in this country (Kromberg et al. 1989; Watcham et al. 2007). To contact women who had chosen TAP or parents who did not care for a child with DS is worthy of consideration for future research.

A positive aspect of PND was identified as allowing parents time to gain control of the situation, their emotions and for preparation for the arrival of a baby with DS. Sapp et al. (2010) reported similar views regarding PND amongst women from the general public in the USA; nevertheless, the reason this was perceived as beneficial was because the majority of these women in the USA would terminate a child with special needs or disabilities. This differed from the current study as none of the participants felt that they would terminate a baby with DS or any other disability. A possible reason for this difference in opinion could be attributed to

the fact that the population investigated by Sapp et al. (2010) comprised members of the general public who did not have a child with a disability. Landsman (1998) reported that women's opinions regarding disability and TAP change once they have their own child. As previously reported, the finding suggests that participants who experienced their child with DS positively were even more against TAP (Julian-Reynier et al. 1993; Skotko 2005).

The participants' view of children as precious was another strong elicitor of negative emotions towards TAP. Some of the participants felt that all children deserved to have a life, even if they have a disability. There was a strong sense that the parents should give them a fighting chance in life. These findings show that the attitude of individuals regarding PND and TAP is impacted by the value they place on the life of a child or baby, which was previously reported by Sleeboom-Faulkner (2010).

Sleeboom-Faulkner (2007) had reported that moral and religious views impacted on how Asian women perceived PND and TAP. In the current study, moral and ethical beliefs regarding TAP similarly had a major impact on the participants' attitudes and many believed it to be the same as murder. Similar findings were reported by Kelly (2009) who conducted in-depth interviews with parents of children with various genetic conditions in the USA; in addition, religious convictions were found to play a big role in parents' attitudes towards TAP (Kelly 2009). Indeed the participants of Muslim belief had the strongest feelings against TAP as they believed that these children with DS would carry their parents into heaven. There was also a strong sense amongst both the Christian and Muslim believers that people do not have the right to interfere and that one was chosen by God to have a child with DS. These findings are similar to those reported amongst Christian mothers of children with disabilities in the USA by Landsman (2005) or Michie and Skinner (2010), as well as amongst Muslim women in Pakistan by Bryant et al. (2011) or Muslim women in Australia (Tsianakas and Liamputtang 2002).

The perception of the invasive procedure causing harm to the foetus and the related miscarriage risk caused major negative feelings towards PND in this group of SA parents. This finding was similar to those reported by Tsianakas and Liamputtang (2002) in Australia and Sapp et al. (2010) in the USA.

All of the participants in our study were against TAP. This finding differs from the findings of Lampret and Christianson (2007), who found that 42 % of SA women they had interviewed, who had a child with DS, were pro-TAP. The reason for this difference could be attributed to the fact that the ethnicity of the women interviewed by Lampret and Christianson (2007) differed from the ethnicity of the parents in the current study. It is also important to

note that, even though the participants were against TAP, some still acknowledged that this is each individual's personal choice. Being part of a DS support group could possibly have led some participants to a more positive attitude towards DS, which in turn could have led to a more negative attitude towards TAP. Further investigations are needed to test this possibility.

Limitations

A limitation of this study was the sample size as only a small number of participants could be included due to time constraints. All the interviews were conducted in a formal setting, which is another limitation as the participants could have felt more comfortable expressing themselves in their home environment. In addition, the paucity of available literature regarding the experiences of parents of children with DS in developing countries made it difficult to find a point of reference and comparison.

Future research

It is important to repeat this study in a larger group to validate these findings. It would be valuable to include the attitudes and opinions of more fathers of a child with DS as fathers might feel differently from the mothers. Health care professionals should be made aware of these findings and should take these into consideration when counselling parents regarding their options of PND and TA.

Conclusions

The findings of this study indicate that the majority of parents of a preschool child with DS had a positive attitude towards PND as it allows the parents preparation time for the arrival of a child with DS. However, this group of SA women was uncomfortable about TAP due to personal experience with DS and moral, ethical and religious beliefs. A strong negative feeling about the testing was the perception that it was harmful to the baby because of the risk of miscarriage. This information will provide health care professionals working in the prenatal setting with more insight into the motivations behind the decisions their patients make.

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Appendix

Interview schedule

Participant code number:

A. Sociodemographic Information

Family history

Date of birth of both parents (if available)

Age of mother when pregnant with child with Down syndrome

Marital status

How many children?

Ages of children?

Are the children all well?

Age of child with Down syndrome?

How old was child with Down syndrome when he or she was diagnosed?

What type of housing do you have?

Which grade/standard did you complete at school? (both parents)

Have you started any further courses/training since leaving school?

Yes

No

Are you currently working in a permanent full-time job? (both parents)

Yes

No

If No to question 11, are you?

Unemployed

Unable to work due to caring for child with Down syndrome

Housewife

Full-time student

Part-time student

Unfit for work

Retired/Pensioner.

Casual employment

Other:

How many people contribute to the household income?

How many people does the household income support?

What is the current household income per month?

B. Understanding of prenatal genetic diagnosis

Is it possible to determine whether a baby has Down syndrome before birth?

Yes

No

If Yes to question 14, explain your understanding of how this is possible?

Were you offered any prenatal testing or screening when you were pregnant with your child with Down syndrome?

Yes

No

If Yes to question 16, what prenatal testing/screening were you offered?

Did you have any of the prenatal testing/screening done to determine your risk to have a baby with Down syndrome?

Yes

No

C. Attitudes towards prenatal genetic diagnosis and termination of pregnancy

Describe your feelings regarding prenatal genetic diagnosis?

Would you recommend it to other people?

Describe your feelings regarding the termination of pregnancy if the foetus has Down syndrome?

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