Mothers' perspectives on their child's mental illness as compared to other complex disorders in their family: Insights to inform genetic counseling practice

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Abstract

To facilitate the development of a therapeutic alliance in genetic counseling, it is important that the counselor understands how families might perceive the condition that constitutes the reason for the referral. Through training and professional practice, genetic counselors develop a thorough understanding of families' perceptions of the conditions that are common indications for genetic counseling. But, for referral indications that are less frequent, like serious mental illnesses, genetic counselors may feel less confident in their understanding of the family's experience, or in their ability to provide psychosocial support when serious mental illness is reported in a family history. This may impede the establishment of a therapeutic alliance. As research shows that most referrals for genetic counseling related to serious mental illness are for female first-degree family members of affected individuals, we sought to explore how this group perceives serious mental illness. To provide a frame of reference with which genetic counselors may be more familiar, we explored how women perceived serious mental illness compared to other common complex disorders in their family. We conducted semi-structured interviews with women who had a child with a serious mental illness (schizophrenia, schizoaffective disorder, bipolar disorder) and a first-degree relative with another common complex disorder (diabetes, heart disease, cancer). Interviews were transcribed and subjected to thematic analysis. Saturation was reached when nine women had participated. Serious mental illness was perceived as being more severe and as having a greater impact on the family than diabetes, heart disease, or cancer. Themes identified included guilt, stigma, and loss. Some of the most important issues that contribute to mothers' perceptions that serious mental illness is more severe than other common complex disorders could be effectively addressed in genetic counseling. Developing a heightened awareness of how family members experience a relative's mental illness may help genetic counselors to be better able to provide psychosocial support to this group, whether serious mental illness constitutes the primary reason for referral or appears in the family history during counseling for a different referral reason.

Keywords

stigma; guilt; psychiatric disorders; schizophrenia; bipolar disorder; serious mental illness; perceptions of mental illness

INTRODUCTION

Establishing a therapeutic alliance is key to promoting optimal outcomes from clinical encounters such as genetic counseling (Zolniersek & DiMatteo 2009). Genetic counselors are perhaps best able to develop a therapeutic relationship with clients when they feel comfortable and competent in their understanding of how the indication that constitutes the reason for referral might be perceived and experienced by their client. Graduate training programs typically provide genetic counselors with a firm grounding in understanding families' experiences and perceptions of the indications that are most frequently encountered in clinical practice (e.g., prenatal, pediatric and cancer). Further, ongoing exposure to these indications in daily professional practice provides ample opportunity for clinicians to refine and develop their understanding of the range of clients' experiences. Thus, both training and clinical practice provide genetic counselors with insight into families' experiences of commonly encountered indications, which contributes to confidence in competently establishing a therapeutic alliance with clients referred for these conditions.

However, teaching related to understanding clients' experiences of indications that are less frequently encountered in clinical practice – such as serious mental illnesses [schizophrenia, bipolar disorder, schizoaffective disorder, etc. (Hunter et al. 2010)] typically (and perhaps appropriately) occupies a smaller proportion of the content of graduate training programs. Further, by virtue of the fact that they tend to be less frequently encountered as the primary indication for referral in clinical practice, genetic counselors may accrue less insight into how families experience these conditions. This may result in genetic counselors feeling less prepared to provide service for clients referred for less frequently encountered indications, including serious mental illness.

Individuals with serious mental illness and their family members have expressed a high level of interest in receiving genetic counseling (DeLisi & Bertisch 2006; Lyus 2007). Research has shown that unaffected relatives of individuals with serious mental illness overestimate the probability for others in the family to develop similar illnesses, and this overestimation correlates with decisions not to have children (Austin et al. 2006). These data suggest genetic counseling could have a profound impact for relatives of individuals with serious mental illness. Specifically, facilitating more accurate perceptions of the probability for children to be affected could promote informed decision making about childbearing among relatives of individuals with serious mental illness, and potentially more unaffected relatives would feel able to have children of their own. Further, preliminary data suggest genetic counseling could help parents of individuals with serious mental illness with respect to issues around guilt (Austin & Honer 2008). While small numbers of individuals are typically referred for genetic counseling related to serious mental illness, most of those seen for this

indication are female first-degree family members of affected individuals (Hunter et al. 2010).

Serious mental illnesses are common conditions; schizophrenia and bipolar disorder each affect approximately 1% of the population (Smoller & Finn 2003). Although serious mental illnesses represent the indication for genetic counseling referral infrequently, they are so common that they may often be uncovered during a review of the family history in the context of sessions aimed at addressing other indications. In such situations, even though serious mental illness may not be the reason for referral, the manner in which the counselor responds to its disclosure may be important in determining the trajectory of the establishment of therapeutic alliance. However, a recent study found that some genetic counselors reported feeling uncomfortable addressing family histories of serious mental illness (Monaco et al. 2009). Their discomfort, at least in part, may be a result of feeling under-prepared to demonstrate an appreciation of how families experience and perceive these conditions.

Purpose of the Present Study

The purpose of this exploratory, descriptive qualitative study was to explore perceptions of serious mental illness among mothers of affected children. To provide a frame of reference, we explored how serious mental illness was perceived in relation to other etiologically similar (common complex) disorders (i.e. cancer, diabetes, or heart disease) that affected other first-degree family members of these women. A major research question concerned how their lived experience of the severity and impact on the family of serious mental illness compared to the other common complex disorder in their family.

Our approach to the study design was influenced by a constructivist perspective (Ponterotto 2005). In brief, in contrast to the assumptions that typically underlie quantitative research study designs, constructivism is not founded on the premise of the existence of a single objective reality which can be “observed, measured and tested and the results replicated and verified for accuracy” (Cook 2011, p.?). Rather, constructivism is founded on an acceptance of inter-subjectivity of reality and, in social science, typically seeks to give voice to a particular group –in this case mothers of children with serious mental illness [For a thorough comparative overview of the differences between and value of positivist, constructivist and other approaches to qualitative research, see Guba and Lincoln (1994)].

METHODS

Participants and recruitment

Women who had a child with schizophrenia, bipolar disorder or schizoaffective disorder and an additional first-degree relative affected with another common complex disorder (specifically: diabetes, heart disease, or cancer) were recruited between November 12, 2008 and March 15, 2009 using advertisements through the National Alliance for Mental Illness (NAMI), Boston University School of Medicine, Craigslist Boston, and various electronic newsletters and support groups for family members of individuals with mental illness across North America. All participants were required to be over age 18, fluent in English, and have

no personal diagnosis of schizophrenia, schizoaffective disorder, bipolar disorder, diabetes, heart disease, or cancer. All study related data were gathered via telephone interview. The study was approved by the Boston University School of Medicine Institutional Review Board.

Confirmation of Psychiatric Diagnoses in Participants' Children

The Family Interview for Genetic Studies (FIGS) was administered to potential participants via telephone in order to verify the psychiatric diagnosis in the child with serious mental illness. The FIGS is widely accepted as the standard, validated instrument that can be used to make a psychiatric diagnosis [according to Diagnostic and Statistical Manual for Mental Disorders, 4th edition (DSM-IV) criteria (American Psychiatric Association 1994)] in a third party, based on information provided by a family member informant (Fogelson et al. 2004).

Semi-structured Interviews and Procedures

For each participant, the first author (a genetic counseling student) documented age, ethnicity, level of education, and family history (with particular attention paid to the number of the participants' relatives diagnosed with schizophrenia, schizoaffective disorder, bipolar disorder, cancer, diabetes, and heart disease, and the type of relationship with the participant). The semi-structured telephone interview (again conducted by the first author) was designed to draw out information about how participants perceived the serious mental illness and the other common complex illness in their family in terms of their severity. Sample questions include: "When you think about the serious mental illness and the [other condition] do you see them as equally serious/severe, or is one more serious/severe than the other? Can you tell me what makes you say this?". The interview also was designed to draw out information about perceived impact on the family. Sample questions include: "Can you tell me about how the serious mental illness has affected you/your family? How about the [other condition]? Have these conditions affected you/your family similarly/differently?". The participants were asked to focus on their child with serious mental illness and their first-degree relative(s) with another common complex disorder. All interviews were recorded, transcribed, and then reviewed for accuracy by the first author.

Data Analysis

We took an inductive approach to analysis. The transcripts were coded for themes related to perceptions of severity of illness and impact on the family, according to standard qualitative methods (Braun & Clarke 2006; Coffey & Atkinson 1996; Fereday & Muir-Cochrane 2006) by one coder, the first author. One-third of the transcripts were randomly selected and coded for themes by the second author, to allow discussion in order to clarify and solidify thinking [not to verify the reality of the results. Such verification would necessitate the application of metrics such as inter-rater reliability which are in conflict with the constructivist approach to the study (Armstrong et al. 1997). Verbatim quotations were selected with which to illustrate the themes that were identified.

RESULTS

Participant Demographics and Confirmation of Psychiatric Diagnoses

Nine of the 23 individuals who expressed interest in the study were determined to be eligible. The 14 individuals who were not eligible were excluded for one of two reasons; either they either did not have *both* a child with serious mental illness *and* another first-degree relative with cancer, heart disease or diabetes, or because they were *personally* affected by one of the conditions of interest. All were Caucasian, and their average age was 59.5 years (Range: 52–65). All participants but one (whose highest level of education attained was completion of high-school) had some post-secondary education. In total, participants had 10 children with serious mental illness (6 daughters, 4 sons), as one participant had two affected children. In all cases, the FIGS confirmed the psychiatric diagnoses reported by the participant (3 children had schizoaffective disorder, 5 had schizophrenia, and 2 had bipolar disorder). The average age for the onset of serious mental illness in their children was 15 years (range: 5–21), and at the time of interview, the average age of the children was 30 years (range: 22–44). Table 1 summarizes the diagnoses of participants' first-degree family members with other common complex disorders. Although some participants also had second-degree relatives with the conditions of interest [i.e., two participants each had one second-degree relative with serious mental illness in addition to their affected child, and five participants had additional (range: 1–4) second-degree relatives with other common complex conditions], they were asked to focus on their perceptions of illness associated with their affected first-degree relatives. The mean duration of the semi-structured interview was 31.6 minutes (range: 21.9 – 40.2 minutes).

Themes

Participants perceived serious mental illness as more severe and as having a greater impact on the family (particularly the parents and siblings) of the affected individual than the other common complex disorder. The nine major themes that emerged are described below.

Theme 1. Manifestations of the illness—In terms of participants' perceptions of serious mental illness as compared to other common complex disorders, the features of the illness itself emerged as an important theme. For example, participants felt that illnesses that affected older family members who had often already lived most of their life (such as diabetes or heart disease) were somehow less difficult, or less unexpected and devastating than serious mental illness, which typically affected younger family members.

“The fact my father was elderly - uh - lessened the degree. He lived a good life, etc. Whereas our daughter - uh - it's - the pain just never seems to stop, because this [mental] illness - uh - just strips away so much.”

Participants also talked about how the symptoms of serious mental illness had a direct impact on the family and affect family relationships and care giving in a way that tended not to happen with other common complex illnesses.

“Well, it was very difficult because [with] our daughter, one of the symptoms that occurs with her that has done so over the years is - um - alienation from the family

and suspicion of, of us, me in particular. And so that is very, very difficult to accept...”

Theme 2. Chronic illness/effects through lifespan—Related to but subtly distinct from manifestations of illness, is the theme that participants viewed serious mental illness as more severe and as having a greater impact on the family than other common complex illnesses because of the lifelong, chronic nature of the condition.

“...it’s a life-long recovery with schizophrenia. With cancer, you know you have it and you deal with it, and you know you have a timeline maybe, perhaps, of living - and you accept it. But with schizophrenia it’s so different.”

“Well with the cancer, she’s been treated, and she has been cancer free for a year and a half, so we keep our fingers crossed in that area. That she will no longer have to deal with that. With the bipolar, it’s there for life.”

Participants talked about the chronic nature of serious mental illness in terms of the stress that often went along with it for family members:

“Even when there is no critical situation, which we have a lot - um - the ongoing level of stress is there.”

“So there was never any question that my father [with heart disease] would die because somebody wasn’t watching him, as the way it was with my son [with mental illness]...”

Theme 3. Outcomes and quality of life—Some participants were hesitant and uncertain in their comparisons of the severities of mental illness and the other common complex disorder in the family, particularly when their experience of the outcomes of these conditions were a life with a low quality and death, respectively.

“Well, my son is still alive, and my father is dead. So, in that respect my father’s illness was more severe. But I have to say that my father lived a long and happy life, and my son [with mental illness] is very disabled and is miserable every day.”

Others expressed less hesitation and uncertainty about their perception of the severity of death as compared to life with serious mental illness, as illustrated by the very painful thoughts shared by one mother related to quality of life for her son.

“This sounds very cruel, perhaps, as a mother - but if I had choice of my son being alive or dead with mental illness, I’d prefer he be dead. I really would because I see his struggle, his pain...I really wish many times that he was in a car accident and he would die because I, I hate - I’d rather have the pain instead of him. I hate to see him so pained - um - I really wish he was dead. Sometimes he says to me, ‘Mom, I wish I was dead’ and I take the upbeat, you know, that ‘Son, you’re young, you’re healthy, you’ve got a whole life, you know, God wants you to have a whole life. We love you. You’re gonna make it.’ You know. But deep down I have to scrouge my feelings saying ‘Honey, I understand, I wish you were dead, too.’”

Theme 4. Issue for individual vs. issue for many—Many participants talked about how they perceived mental illness as compared to other common complex conditions in terms of its impact on the lives of others. One participant succinctly captured the feelings that many articulated:

“[Mental illness] affects many more people around the person who is ill. Whereas the heart disease is more of an issue for the person who has it.”

Participants felt that, as compared to other common complex disorders, serious mental illness had more profound emotional, financial, and practical consequences for others:

“Our family was completely thrown into chaos by [my daughter’s] mental illness. Everyone was impacted seriously. My husband [who] was an executive for [a company], lost his job. Her twin sister was so severely anguished, it disrupted her life. My son, his focus on his studies became so intense that he got his degrees and fled the family. I was determined that I was going to hold my job and, and not, not go under to it.”

“She couldn’t complete high school, so you’re looking at a life that is just completely changed, and the financial implications of that burden always fall back on the family.”

“I am retired, but I’m working [at another job] because I think about what happens when I leave or am no longer there. I would like to leave as much financial support as possible.”

Theme 5. Unfamiliarity with illness and advocacy—Not only did participants initially have to educate themselves regarding their child’s diagnosis of serious mental illness, but as they encountered reactions from friends, extended family, colleagues, and society in general that reflected a general lack of familiarity with mental illness diagnoses, they educated others too.

“People are knowledgeable about heart disease, cancer, and diabetes, and you don’t have to go and explain to them. When you are talking about mental illness, you have to go and try to explain what it is...”

The majority of participants discussed how they and other family members educated themselves regarding mental health issues and how they became involved in advocacy for their relative and others with serious mental illness and in educating their community about issues related to serious mental illness.

“I have become totally over-functioning...because I have jumped into mental advocacy with both feet. I’m on local boards. I’m on advisory councils...I did a presentation at the college yesterday. And I enjoy it. I enjoy helping other people that have these problems because I didn’t really have anyone to help me. I had to do all the study and the research work myself...”

Theme 6. Stigma—Participants either explicitly or implicitly identified stigma related to serious mental illness as a significant contributor to their differing perceptions of serious mental illness versus other common complex conditions.

“Everybody talks about diabetes. Normal people have it and deal with it. But mental illness – people are still afraid of talking about mental illness.”

“People being afraid to - you know - have communication with my daughter...you know she’s not violent, you know she’s not going to kill you, she’s not going to. You know how mental illness has been portrayed. So - um - you know at my work I, I do not tell a lot of people that my daughter has schizophrenia...”

Theme 7. Guilt—Participants talked about guilt related to their child’s serious mental illness diagnosis and saw this as a unique feature of their lived experience.

“You know when it is a mental illness...you always question yourself and you wonder if there is anything you could have done differently that, that might have prevented the illness, or even though I know it’s - uh - it’s a biochemical, you know, a chemical illness, the schizoaffective disorder, and yet at the same time, you always question yourself to think, ‘Is there anything I could have said differently or done differently, or if we had been different as a family so then it might not have happened?’ But the cancer you don’t, like you don’t have that, you don’t put a guilt trip on yourself...if somebody else in your family has cancer, I don’t think, I don’t think you ever wonder whether you might have contributed to that.”

Theme 8. Lack of acceptance and support—Participants talked about how a support system for the affected individual had seemed to be in ready supply for family members with diagnoses of cancer, diabetes or heart disease but described how they felt this support was less available when the health crisis was a serious mental illness. Although participants talked about the support system as being for their ill relative, its absence in the context of mental illness seemed to result in a personal experience of greater burden and isolation.

“People rally around other people and support those who have cancer. You are, you are better supported in the community, you are better supported by the medical community, you are better supported by family. Whereas the person with mental illness is ostracized and isolated.”

“If one of my children [with mental illness] gets taken to the hospital, very few people will think about going to visit them. Whereas if I had [a child] with cancer then they would go and bring flowers.”

Theme 9. Loss—Participants talked a lot about loss as a critical factor in the impact of serious mental illness on their family. They viewed issues of loss related to serious mental illness as quite different from those related to other common complex disorders. Loss as a theme took several different forms. Participants talked about grieving the loss of the personality that the individual with serious mental illness had before the onset of their illness.

“[My relative with cancer] retained his personality to the most degree throughout. So one could relate to him as the way he was, which is not always the case for somebody with schizophrenia-related illnesses.”

“[Our daughter with mental illness] is a changed person. And we grieved the loss of that person.”

Other participants discussed their loss of expectations, hopes, and dreams for their child with mental illness.

“It’s like you have to - um - accept this person for who they are now. And let go of the dreams you had for this individual, you know, this child of yours.”

Participants in this study also perceived issues of loss related to serious mental illness as being relevant for other family members.

“When he [sibling of individual with mental illness] wrote his paper to go to [college] he wrote, ‘I’ve lost my brother. I have but a shadow of a brother.’ And I cried when I read his paper, I mean, it’s very painful....”

DISCUSSION

This is the first study (of which we are aware) that explored mothers’ perceptions of their children’s serious mental illness in relation to other types of common complex disorders in the family. The participants in this study perceived serious mental illness as more severe and as having a greater impact on the family than cancer, heart disease or diabetes. As such, these data contribute an interesting extension to previous work which has shown that unaffected relatives perceive cancer and heart disease to be more serious than diabetes (Walter and Emery 2006).

Participants talked about many factors that contributed to their perception that serious mental illness was more severe than other common complex disorders, and themes that emerged reflected a broad range of issues that map onto Leventhal’s Common Sense Model of Self Regulation (Leventhal et al. 1997). While all of the themes that emerged are important issues for genetic counselors to be aware of, some have more direct implications for the genetic counseling encounter. One striking theme that emerged is related to outcomes and quality of life for serious mental illness as compared to other common complex disorders. Participants felt that although death from an illness such as heart disease or cancer is often perceived as the extreme end of the illness-severity spectrum, the protracted mental and emotional anguish associated with serious mental illness felt somehow worse even than death. The present data suggest that mothers’ perceptions of the suffering experienced by their children with mental illness contribute to their appraisal of these conditions being more severe than cancer, diabetes, or heart disease. Although there are few studies with which to directly compare these findings, in a study of the experiences of stigma among parents of people with serious mental illness, 18% reported feeling their child would be better off dead (Ostman & Kjellin 2002), and a qualitative study of fathers of individuals with schizophrenia identified a similar theme (Howard 1998). While the genetic counseling session is not the best forum in which to attempt to thoroughly address this profound issue, awareness of it may prompt genetic counselors to offer referrals for ongoing support to family members of individuals with serious mental illness.

The mothers in this study perceived serious mental illness as more severe than other common complex illnesses, in part because of the very nature of the illness itself. That is, serious mental illness tends to strike younger people, and the symptoms can have a unique impact on the family (e.g., affected individuals may be suspicious of their family members). Participants perceived serious mental illness as having had more profound and chronic emotional and practical consequences for them than the other common complex conditions in their family.

Another key theme that emerged was loss. Participants described a sense of ongoing loss related to serious mental illness that was not shared in their experience of other common complex disorders. In a previous qualitative study of 5 mothers of children with schizophrenia (Ryan 1993), participants described a similar phenomenon. The concept of loss as an important aspect of the lived experience of family members of individuals with serious mental illness may not be intuitive to clinicians who do not interact with this population frequently, but it is important that they be prepared to address this issue.

Other themes that emerged from the data have more direct implications for the genetic counseling encounter. For example, stigma emerged as a strong theme. Serious mental illnesses are profoundly stigmatized conditions, and previous work has shown that stigma has negative effects for relatives as well as for the affected individual (Goffman 1963; Phelan 2002; Phelan et al 1998; Pinfold et al. 2005; Schulze 2007; Schulze & Angermeyer 2003; Struening et al. 2001; Walter 1998). In this study, participants perceived others' reluctance to talk about the relative with serious mental illness as difficult. This finding suggests family members would welcome a genetic counselor responding to their disclosure of a family history of serious mental illness by demonstrating willingness to talk about this topic (whether or not it constitutes the primary reason for referral). Previous studies have shown family members of individuals would like genetic counseling but that few have received it (DeLisi & Bertisch 2006; Lyus 2007); thus, when serious mental illness emerges in the context of a family history taken during a session for another indication, it may be appropriate to offer a second appointment to discuss it.

The emergence of the "unfamiliarity with illness and advocacy" and "lack of acceptance and support" themes suggest that regardless of whether or not serious mental illness constitutes the primary indication for referral, development of a therapeutic alliance with a family member may be promoted when the counselor is able to: respond empathically to clients' disclosures about family history of serious mental illness; demonstrate some level of familiarity with the symptoms; and show appreciation of how serious mental illness may be experienced by family members.

Guilt has previously been identified as a key issue for relatives of individuals with serious mental illness (Ferriter & Huband 2003; Holzinger et al. 2003; Phelan 2002; Phelan et al. 2006), but has not previously been explored in terms of comparison with reactions to other etiologically similar conditions in the family. Indeed, in the current study, guilt emerged as a factor that was quite different for serious mental illness as compared to other common complex conditions. The mothers' guilt seemed to be related to questions about whether there was anything they did that caused or could have been done to prevent their loved one

from developing serious mental illness. Preliminary data suggest that as genetic counselors aim to help people better understand the causes of illness and provide support around these issues, management of cause-of-illness related guilt is a domain in which genetic counselors are ideally placed to help this group (Austin & Honer 2008).

Study Limitations and Research Recommendations

While three participants were comparing illnesses that affected two of their children, the other six were comparing two illnesses where one affected their child and the other affected another type of first-degree relative (i.e., parent or sibling). It is possible these differences in nature of the relationship could be an important factor in perceptions of the illnesses. Similarly, participants may have had different degrees of emotional and/or practical closeness with the child with serious mental illness as compared to the first-degree relative with the other common complex disorder; such differences may have affected their perceptions of severity (e.g., direct daily contact with and a caregiver role to the child with serious mental illness versus less frequent, telephone-based contact with the first-degree relative with the other condition). Also, differences in the time since diagnosis for the child with mental illness as compared to the family member with the other common complex disorder may have influenced perceptions of severity. These are important issues that should be explored fully in future larger scale studies. As with most studies, one cannot rule out the possibility of bias. For example, perhaps mothers who experienced their child's serious mental illness as more severe were more likely to respond to our recruitment. It also is possible individuals who affiliate themselves with the support/advocacy groups from which we recruited experience serious mental illness as more severe than those who are not involved with this type of organization. Future fruitful work in this area might for example, involve qualitative and/or quantitative comparisons of the perceptions of mothers of children with mental illness to the perceptions of mothers of children with other common complex disorders. Finally, qualitative data are not intended to be generalized to the population of interest; therefore, present results should be replicated in studies with larger and more diverse samples.

Conclusion

Although serious mental illness and other common complex illnesses are etiologically similar, the present results suggest that participants in this study experience them very differently. The fact that serious mental illnesses are perceived as so profoundly difficult - even when compared to the experience of other common complex disorders that result in death - may not be immediately intuitive to those seeking to provide clinical services to this population, particularly if interactions with this group are only sporadic. While each patient and family whom genetic counselors encounter will have a unique experience and perspective, the insight gleaned from this study might help genetic counselors feel more confident about their ability to provide services for this group and promote the potential for successful development of the therapeutic alliance. Given the interest in genetic counseling expressed by people with serious mental illness and their families, the potential for genetic counseling to benefit this population, and the small numbers of referrals to genetic counseling for a primary indication related to serious mental illness, we encourage genetic counselors to ask about mental illness when taking family histories of those referred for

other indications [see Peay et al 2008 for suggestions regarding how to approach this topic]. Further, we suggest that investigating barriers which may limit access of this group to genetic counseling is a worthwhile endeavor.

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Table 1

Information about Participants

Participant #	Non-psychiatric Common Complex Disorders in Relatives	
	Diagnosis	Relationship
1	Cancer	Father
	Heart disease	Daughter
2	Diabetes	Father
	Cancer	Mother
	Heart disease	Mother
3	Diabetes	Father
	Cancer	Mother
	Heart disease	Mother
4	Diabetes	Brother
	Cancer	Son, Sister
5	Cancer	Daughter
6	Diabetes	Father
	Cancer	Father
	Heart disease	Father
7	Cancer	Father
8	Diabetes	Mother
	Cancer	Sister
9	Heart disease	Father