



Research article

High level of expressed emotions in the family of people with schizophrenia: has a covert abrasive behaviours component been overlooked?



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ABSTRACT

Background: High expressed emotion (EE) in a patient's family is a known risk factor of relapse in schizophrenia. The three components of high EE – criticism, hostility and emotional over-involvement – were developed through a data-driven approach and a focus on overt abrasive behaviours. The influence of covert abrasive behaviours has not been explored.

Aims and methods: This study aims to explore both overt and covert abrasive behaviours through semi-structured interviews conducted with 22 people with schizophrenia, who were recruited through iterative purposive sampling.

Results: Thematic analysis suggests that participants' experiences of overt abrasive behaviours resonate with the three-factor structure of high EE, except “emotional over-involvement” is renamed to “over-involvement” to focus on behaviours and embrace different levels or types of emotional reactions. Regarding covert abrasive behaviours, two domains are proposed: disassociation and apathy, which focus on family members' disengaging actions and indifferent attitudes respectively. While both overt and covert abrasive behaviours cause psychological distresses and behavioural reactions on the participants, their precise impacts are not entirely the same.

Conclusion: People with schizophrenia experience both overt and covert abrasive behaviours with family members. The findings of this study may expand the conceptualization of high EE, enhance its content validity, and provide an extended conceptual framework for developing more comprehensive measures.

1. Introduction

Schizophrenia often runs a chronic course, with recurrent relapses (Bradford et al., 2003; Emsley et al., 2013). Despite individuals having a lifetime risk of only around 1%, schizophrenia constitutes a major patient group within psychiatric services, due to its chronicity and the sustained impairments it causes for patients. In Hong Kong, people with a diagnosis of schizophrenia spectrum disorders account for 60%–70% of the service users of community mental health services (Chien et al., 2015). Stigma toward people with schizophrenia is much stronger than that toward common mental disorders, such as depression and anxiety (Crisp et al., 2000). The public often associates schizophrenia with bizarre behaviours, marked psychosocial impairments, unstable mental states and a risk to themselves or others.

Among several risk factors contributing to schizophrenia relapse, including individual circumstances, such as non-adherence to medication (Robinson et al., 1999; Xiao et al., 2015) and poor premorbid adjustment (Alvarez-Jimenez et al., 2012), patients' relationships with their family

members have long been identified as a crucial aspect influencing patients' prognosis (Aquila et al., 1999). The early classic work of Brown (1958) showed that schizophrenic patients who returned from hospital to their own households tended to have greater relapse rates than those who returned to staffed hostels. Later research (Brown et al., 1962) revealed higher relapse rates for patients who stayed with family members with high levels of expressed emotion (EE), which was characterized by three factors: (1) criticism, (2) hostility and (3) emotional over-involvement. Further replications carried out by Vaughn and Leff (1976a) and Leff et al. (1985), which adopted standardized measurements, including the Camberwell Family Interview (Brown and Rutter, 1966), echoed earlier findings. A two- to threefold increased relapse risk was revealed in schizophrenic patients who lived with family members with high EE (Barrowclough and Hooley, 2003; Leff, 1976). The influence of family environment on the outcomes of schizophrenia has also been examined in recent research. Patients living with family members presenting strong family cohesion, warmth and acceptance with rare criticism may have

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less symptom severity (Gurak and Weisman de Mamani, 2016; Butler et al., 2019).

The three-factor structure of high EE was originally developed through a data-driven approach. The three components of high EE were identified through quantitative data analysis. Traditionally, EE was measured by the Camberwell Family Interview (CFI), which is still considered as the golden benchmark in assessing EE (Van Humbeeck et al., 2002; Vaughn and Leff, 1976b; Brown et al., 1972). The three components of EE are examined from the family member's report in the semi-structured interview.

Despite the way in which the concept of EE has been widely recognized and studied in many different places around the world for over half a century, the content validity of the construct has not been rigorously questioned from a conceptual perspective. It should be noted that the three components of high EE are all overt abrasive behaviours, involving direct interactions between people suffering from schizophrenia and their family members. For instance, family members' criticism is often characterized by aversive words and disapproving actions directed toward the patients. The potential influence of non-verbal expressions and the subtle behaviours of family members have largely been neglected.

The literature on interpersonal rejection has argued that ostracism could be more threatening to an interpersonal relationship than direct confrontation or rejection (Leary, 2005). According to Williams (2001), ostracism refers to the action of ignoring and excluding an individual or group. It emphasizes the disassociation between the target and the rejecter. Although the rejecters appear to be passive, by keeping a distance from the target without initiating any direct conflict, their covert behaviours could be conveying an even stronger sense of hostility and disapproval to the targets. In light of the limited research on the covert abrasive behaviours of family members toward people with schizophrenia, this study aims to explore these patients' experience of covert abrasive behaviours performed by their family members. To check the content validity of the current three-factor model of high EE, the current study also aims to explore the patients' experiences of overt abrasive behaviours performed by their family members.

2. Methods

2.1. Design

The study aims to explore the experiences of people with schizophrenia in regard to the overt and covert abrasive behaviours performed by their family members. The study adopted qualitative methods to gain an in-depth understanding of these abrasive behaviours. Semi-structured individual interviews with people suffering from schizophrenia were conducted. An interview guide was developed, taking reference from previous research (Ng et al., 2019; Ng and Sun, 2011; Williams, 1997), and consultations were carried out with the collaborating psychiatrist, who has worked in a public mental health hospital in Hong Kong for over 20 years. The interview covers questions about participants' subjective experiences of abrasive behaviours, both overt and covert, performed by their family members. The psychological and behavioural influences of these behaviours were also explored. It was conducted in an interview room inside the mental health unit where the collaborating psychiatrist worked. Each interview usually lasted between 1 and 1.5 h. Detailed interview procedure and prompts are attached in the Appendix. Demographic data, including gender, age, occupational status, marital status, family composition, educational level and duration of schizophrenia diagnosis, were collected. Informed written consent was collected from each participant prior to data collection. The study was approved by the Institutional Review Board of The University of Hong Kong and the Hong Kong Hospital Authority Island Western Cluster (reference number UW15-010).

2.2. Sampling

By adopting an iterative purposive sampling approach, participants were recruited through the collaborating psychiatrist at a public psychiatric clinic in Hong Kong. The inclusion criteria were:

- (1) aged between 18 and 65 years;
- (2) diagnosed with schizophrenia according to the ICD-10;
- (3) attending regular medical follow-ups and in a stable mental state; and
- (4) proficient in communicating in Cantonese, the local dialect.

People with a history of neurological problems, developmental disabilities, drug or alcohol addiction, or severe cognitive deficiency were excluded. The reason people with addiction to drugs or alcohol were excluded in the current research is that these people tend to have intense relationship problems with family members. If these participants are included, it will be difficult to differentiate if the family relationship problems revealed are due to addiction or schizophrenia. Specifically, the diagnosis of schizophrenia and the evaluation of the participants' mental stability was assessed clinically by the collaborating psychiatrist.

All interviews were conducted by a research assistant who has a background in psychology and extensive experience working with people with severe mental illnesses. A preliminary qualitative data analysis was performed as quick as was practical after each interview was conducted with the participants, followed by a discussion of the findings with the collaborating psychiatrist. The psychiatrist then identified another participant with different attributes and predicaments for the study. The cycle of interview-analysis-recruitment continued until data saturation – a condition in which no more new codes could be generated in two consecutive participants – was reached. Eventually, 22 participants were interviewed in the study.

2.3. Data analysis

All interviews were audio-taped, followed by verbatim transcription and inductive coding. Data management was utilizing QSR NVivo 11 software and all anonymous transcripts were imported into a single NVivo project. Thematic analysis was implemented with a focus on participants' perceived overt and covert abrasive behaviours of family members (Braun and Clarke, 2006). The themes were developed according to their prevalence across the dataset. The subsequent coding scheme was independently reviewed by the three authors of this paper. The final coding scheme was arrived at after repeated, careful deliberations by the team.

3. Results

3.1. Demographic data of participants

A total of 22 participants, comprising 10 men and 12 women, were interviewed. They had a mean age of 46.7 years, ranging between 31 and 65. Seven participants were living with a spouse and another seven participants were living with parents and siblings. Five participants were living in residential hostels and three participants were living alone; these participants had regular contact with their family members. Specifically, regular contact in the current study was operationalized as having at least one contact per week between the participants and their family. Means of contact can be face-to-face or by phone. Half of the participants were first diagnosed with schizophrenia 10 years or more ago and the other half of the participants were diagnosed less than 10 years ago. Detailed demographic data are presented in Table 1.

Table 1. Sociodemographic characteristics of participants (N = 22).

Sociodemographic variables		Number of participants
Age (years)	31–40	5
	41–50	11
	51–60	4
	61 or over	2
	(Mean age = 46.7)	
Gender	Female	12
	Male	10
Marital status	Single	11
	Married	9
	Divorced	2
Living conditions	With spouse	7
	With parents and siblings	7
	Living in residential hostel	5
	Living alone	3
Education	No formal education	3
	Primary education or lower	6
	Secondary education	11
	Post-secondary education	2
Duration since first diagnosed schizophrenia (years)	1–5	5
	6–10	6
	11 or more	11
Employment status	Gainfully employed	10
	Unemployed	9
	Retired	3

3.2. Family members' high EE behaviours, as perceived by participants

All participants reported experiences of both overt and covert abrasive behaviours from family members during their daily life interactions. The results of the thematic analysis of the verbatim transcription are summarized in Tables 2 and 3 for overt and covert abrasive behaviours, respectively. Both types of abrasive behaviours were perceived as being distressful by the participants, but their precise psycho-behavioural impacts appeared to be not entirely the same. Table 4 summarizes the psycho-behavioural influences of overt and covert abrasive behaviours on the participants.

3.3. Overt abrasive behaviours

Experiences of overt abrasive behaviours reported by participants resonate with previous findings (Brown et al., 1958; Butzlaff and Hooley, 1998; Ng and Sun, 2011) and involve actions such as “becoming upset due to the symptoms of my mental illness”, “accusing me of being a family burden” and “restricting my daily

Table 2. Family members' overt abrasive behaviours, as perceived by people with schizophrenia.

Domains	Overt abrasive behaviours
Criticism	Accusing me of being a troublemaker
	Accusing me of being a burden on the family
	Reprimanding me when I complain about my health issues
Hostility	Showing dislike of my behaviours
	Showing annoyance when assisting me
	Showing they are upset due to the symptoms of my mental illness
Over-involvement	Overprotecting me from performing daily duties
	Restricting my daily activities
	Checking on my daily activities
	Controlling my behaviours

activities”. Through a thematic analysis of the transcribed interviews and careful deliberations carried out by the research team, three domains were extracted: criticism, hostility and over-involvement. These three domains largely correspond to the classic three-factor structure of high EE. It should be noted that we named the third domain “over-involvement” instead of “emotional over-involvement”, which is the standard wording used in the literature on high EE. Our study revealed that family members' “over-involvement” behaviours are not necessarily laden with emotion. Details of these three domains are depicted below.

Criticism involves behaviours such as “accusing me of being a troublemaker”, “accusing me of being a burden on the family” and “reprimanding me when I complain about my health issues”. The criticisms were grounded in negative beliefs on the behalf of the participants, who were seen as being not constructive or productive to the family, and not responsible for coping with their illnesses or maintaining good health. Sometimes, they were seen as making trouble and being a burden on the family. These criticisms were often related to the participants' failure to stay in gainful employment or perform a contributory role in the family. While family members often expected participants to maintain a productive role, participants expected family members to be considerate about their physical limitations due their mental illness.

Hostility involves behaviours such as “showing dislike of my behaviours”, “showing annoyance when providing me with assistance” and “becoming upset due to symptoms of my mental illness”. Many hostile reactions from family members were related to the positive and negative symptoms of schizophrenia affecting the participants; for examples, odd behaviours, such as talking to the air, unsatisfactory self-care and low levels of work volition. Overgeneralization seemed to have occurred. Some family members' hostility expanded to general lifestyle issues; for example, personal preferences regarding dress, recreational activities, friends and daily routines.

One difficulty we experienced while coding items was that many of the above-mentioned behaviours could be related to both the criticism and hostility domains. Conceptually, we differentiated between the two domains as follows: Criticism is more about action, whereas hostility is more about attitude and emotional reactions. Along this line, if an item is primarily an action – for example, “accusing” or “reprimanding” – we categorised it under criticism. If an item is primarily an attitude or an emotional reaction – for examples, showing “dislike”, “annoyance” or “upset” – we categorized it under hostility. The validity of this conceptual differentiation may be further examined by exploratory and confirmatory factor analysis in future quantitative studies.

Over-involvement involves behaviours such as “overprotecting me from performing daily duties”, “restricting my daily activities”, “checking on my daily activities” and “controlling my behaviours”. In contrary to the classic naming used in the literature on high EE, we named this domain “over-involvement”, rather than “emotional over-involvement”. As mentioned above, our study revealed that marked emotional expressions were not necessarily present during these interactions. Some family members could appear to be emotionally neutral or cool in the process. Thus, the naming of “over-involvement” as such is more coherent in the context of our findings and can embrace a wider range of emotional reactions, from apathy to histrionic reactions. The proposed new naming focuses more on the actual behaviours exhibited by the family member – overprotecting, restricting, checking and controlling. Disregarding the accompanying emotions, participants found these behaviours to be intrusive and distressful.

As summarized in Table 4, the common psychological forms of distress arising from these overt abrasive behaviours include feeling discriminated against, disgusting and shameful. Common behavioural reactions include not showing up for family activities, not disclosing health conditions, reducing usual activities, not adhering to medications and not seeking professional help.

Table 3. Family members' covert abrasive behaviours, as perceived by people with schizophrenia.

Domains	Covert abrasive behaviours	
Disassociation	Not approaching or visiting me	
	Not staying in the same space as me	
	Avoiding events that I attend	
	Not answering my phone calls or messages	
	Not responding when I initiate an action	
	Avoiding eye contact with me	
	Avoiding bodily contact with me	
	Behaving as if they did not see me	
	Not inviting me to speak	
	Interrupting me when I am speaking	
	Not inviting me to social activities	
	Apathy	Showing no concern about my health condition
		Showing no interest about my social situation
Showing unwillingness to accompany me to handle personal matters, such as attending medical appointments		

3.4. Covert high EE behaviours

All participants reported experiencing covert abrasive behaviours from family members. Some examples were “not approaching or visiting me”, “not answering my phone calls or messages”, “showing no concern about my health condition” and “not inviting me to social activities”. Through a thematic analysis of the transcribed interviews and careful deliberations on the part of the research team, two domains were extracted: disassociation and apathy. Although covert hostility can be presented in different forms, a common key feature is avoiding direct confrontation through non-verbal actions and achieving disengagement between the two parties (Wesselmann and Williams, 2017). Although heated confrontations were avoided, these covert abrasive behaviours were reported to be equally distressful, if not more so, as the overt abrasive behaviours. Details of these two domains are discussed below.

Disassociation involves behaviours such as “not approaching or visiting me”, “not staying in the same space as me”, “avoiding events that

I attend”, “not answering my phone calls or messages”, “not responding to actions I initiate”, “avoiding eye contact with me”, “avoiding bodily contact with me”, “behaving as if they did not see me”, “not inviting me to speak”, “interrupting when I am speaking” and “not inviting me to social activities”. The key strategies involved in disassociation were distancing oneself from, avoiding and not responding to the participants. Participants often felt abandoned and lonely. Some participants also felt that the family members' exclusion behaviours were disgusting. As a result, they were not willing to join in with family activities again.

Apathy involves behaviours such as “showing no concern about my health condition”, “showing no interest in my social situation” and “showing unwillingness to accompany me to handle personal matters, such as attending medical appointments”. A common theme was lack of affection and respect for the participants. Participants felt a subtle but strong form of rejection. While experiencing intense psychological distress, some participants became less proactive in pursuing recovery; for example, by not complying with prescribed medications, not seeking psychosocial help and reducing their usual activities.

During the thematic analysis and coding process, our team carefully deliberated over the differentiation between disassociation and apathy. The key delineation between the two is that disassociation focuses on family members' actions and strategies for achieving disengagement with the participants, whereas apathy focuses on an indifferent attitude and lack of affection.

While covert abrasive behaviours involve some acting out behaviours, such as “avoiding bodily contact with me” and “behaving as if they did not see me”, they are fundamentally different from overt abrasive behaviours in the sense that they aim for disengagement and confrontation avoidance. Overt abrasive behaviours, in contrast, are confrontational and engage both parties.

These covert abrasive behaviours also led to significant psychological distress and behavioural reactions on the behalf of the participants, but these influences were not entirely the same as those caused by overt abrasive behaviours. Table 4 summarizes these influences, such as feeling abandoned, disgusting and lonely, becoming silent, not showing up for family activities and nonadherence to treatment.

4. Discussion

Through in-depth interviews with 22 people with schizophrenia, this study examined their subjective experience of family members' abrasive behaviours. Besides traditional interview with family members, previous research also explored patients' perception of high EE behaviours, revealing that the overt abrasive behaviours from family members might impede patients' interaction with peers and lead to social ostracism (Gandhi et al., 2020). In our study, in addition to the well-researched overt behaviours, we purposely also explored the covert abrasive behaviours experienced by the participants. All the participants reported experiences of both overt and covert abrasive behaviours enacted by their family members. Despite the effects of mental illness and antipsychotic medications, all participants were sensitive to the subtle clues of rejection displayed by family members in various social contexts. All the participants found both forms of abrasive behaviours distressful, although their specific psycho-behavioural effects were not entirely the same.

Through thematic analysis and careful deliberations in our team, we identified three domains under overt abrasive behaviours: criticism, hostility and over-involvement. The findings largely correspond to the classic three-factor model of high EE, except in regard to the naming of the over-involvement domain (Brown et al., 1962). We dropped the word “emotional” from the traditional “emotional over-involvement” because our studies revealed that marked emotional expressions are not necessarily accompanied by family members exhibiting over-involvement behaviours. Some family members appeared emotionally neutral or cool in the process. Our proposed “over-involvement” better matches our findings and can encompass a wider range of emotional reactions, from

Table 4. Psychological consequences and behavioural reactions induced by overt and covert abrasive behaviours experienced by people with schizophrenia.

Effects	Perceived severity of effects*	
	Induced by overt abrasive behaviours	Induced by covert abrasive behaviours
Psychological distress		
Feeling sad	+	++
Feeling abandoned	0	+++
Feeling discriminated against	+++	++
Feeling disgusting	+++	+++
Feeling lonely	0	+++
Feeling distrustful	++	0
Feeling shameful	+++	+
Behavioural reactions		
Becoming silent	0	+++
Not showing up for family activities	+++	+++
Not initiating contact again	+	++
Not disclosing health conditions	+++	0
Not making new friends	++	+
Not complying to prescribed medications	+++	+++
Not seeking psychosocial help	+++	+++
Reducing usual activities	+++	+++

*Note: Severity rating: +++ = severe effect; ++ = moderate effect; + = mild effect; 0 = no or minimal effect.

apathetic to histrionic. The proposed new name further focuses more on the actual behaviours exhibited by family members: overprotecting, restricting, checking and controlling.

Our previous research validated the tool to measure EE level from the patients' perspective and it also complied with the three overt components of EE (Ng and Sun, 2011; Ng et al., 2019). In the current research, besides the three overt components of EE, we identified two domains in regard to covert abrasive behaviours: disassociation and apathy. Disassociation focuses on the strategies and actions used by family members to disengage from the participants. Apathy focuses on family members' indifferent attitudes and lack of affection. While overt abrasive behaviours are confrontational in nature, covert abrasive behaviours involve the adoption of confrontation avoidance tactics. Under the traditional Chinese cultural context of putting a great deal of emphasis on face-saving and harmony in the family (Fung et al., 2007), covert abrasive behaviours may be a preferred way for family members to disengage with the participants, due to their confrontation avoidance nature. On the surface, the family may appear to remain in a harmonious state. In actuality, however, participants and family members are disengaged and there is a severe lack of affection between them. As a result of covert abrasive behaviours, many participants reported feeling a strong sense of abandonment and loneliness. They often chose to remain silent and refrain from contacting family members. These findings are coherent with previous studies on the effects of ostracism (Nezlek et al., 2012; Williams and Zadro, 2001; Williams, 1997, 2001).

Although overt abrasive behaviours were also distressful, participants maintained engagement with family members despite the confrontations between them. The participants did not feel abandoned or lonely while experiencing intensive emotional exchanges with family members from time to time. On the other hand, many participants reported a strong sense of discrimination, distrust and shame as a result of these confrontational experiences. Participants usually did not choose to remain silent in this context. They often argued back and kept the confrontational exchanges going. Participants feel that they could still perceive how others view and judge them during the interactional process. Both sides have the opportunity to explain and redirect the content, or bring up new topics or perspectives.

In contrast, ostracism and avoidance brought by covert behaviour will shut off the possibility of interaction. As no interpersonal connection is established, people will lose the feeling of belongingness and feel being left alone. When immersed in silence and lacking feedback, people can only speculate the reasons of ostracism by themselves. Very often, a long list of misdoings, along with self-blame and uncertainty will gradually nibble the fragile self-esteem and confidence of the ostracized one. The ostracized people have no opportunity to change the pattern, as there will be no responses from the significant others. They lose the sense of control of their environment, and in the end, they may even question the meaning of their existence. Comparing with overt high EE behaviour, ostracism brought by covert behaviour severely threatens self-esteem and belongingness of people with schizophrenia (Williams, 1997, 2001; Williams and Zadro, 2001; Nezlek et al., 2012), which makes the covert behaviour more harmful. It is worth noting is that both overt and covert abrasive behaviours led to participants' nonadherence to treatment, including not taking prescribed medications and not seeking psychosocial help. Adopting the traditional three-factor high EE concept, a recent study conducted by us followed up with 101 people with schizophrenia in Hong Kong and revealed that those in high EE families showed a 6.3-times elevated one-year relapse rate (Ng et al., 2019). If covert abrasive behaviours are incorporated into the measure of high EE, the precision and predictive power of the measure may be enhanced. This is an area worthy of further investigation.

The current study has several limitations. As an exploratory qualitative study, its generalizability is bound to be limited. The self-report of participants' subjective experiences might be influenced by social desirability and recall bias. Most participants have suffered from schizophrenia for over five years and may have developed some social and

cognitive impairments during this time. They might experience difficulty understanding terms about interpersonal relationships and accurately describing their experiences in social interactions.

5. Conclusion

Findings from this pioneer study provide new directions for future research on the old high EE construct. In particular, grounded in our findings, we proposed two types of covert abrasive behaviours: disassociation and apathy. The findings of this study also reveal that these covert abrasive behaviours induce significant psychological distress and behavioural reactions in people with schizophrenia, including non-adherence to treatment, which is a strong known risk factor of relapse. Incorporating the covert component into the existing high EE construct may make its content validity more complete. The new conceptualization may provide a framework through which to develop a high EE measure covering both overt and covert abrasive behaviours.

Declarations

Author contribution statement

Siu-Man Ng: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Hui-ying Fung, Siyu Gao: Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

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Declaration of interests statement

The authors declare no conflict of interest.

Additional information

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