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International Journal of Nursing Studies 38 (2001) 523–531

INTERNATIONAL JOURNAL OF
NURSING
STUDIES

www.elsevier.com/locate/ijnurstu

Making sense of the voices

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Received 8 December 1998; received in revised form 18 October 2000; accepted 20 October 2000

Abstract

Hearing voices is a common occurrence, and an experience of many people in psychiatric/mental health care. Nurses are challenged to provide care, which is empowering and helps people who hear voices. Nursing practice undertaken in partnership with the voice hearer and informed by a working explanatory model of hallucinations offers greater helping potential. This paper uses Slade's (1976. *The British Journal of Social and Clinical Psychology* 15, 415–423.) explanatory model as a framework for exploring interventions which may assist people in exerting some control over the experience and which might be used alongside pharmacological interventions. Principles and practical ideas for how nurses might assist people to cope with and make sense of the experience are explored. © 2001 Published by Elsevier Science Ltd.

Keywords: Nursing; Hallucinations; Voices; Therapeutics; Coping

1. Introduction

Auditory hallucinations reflect an unusual, but not uncommon phenomena. An auditory hallucination may be defined as an auditory perception experienced in the absence of external stimuli and as if it has arisen from outside the person (Gregory, 1987). A hallucination is experienced as “not me” and with the full force of ones usual sensory perceptions. Whilst hallucinations may occur in any sensory mode, auditory hallucinations, that is hearing music, noises or voices appear to be particularly common. Literature is replete with examples of famous, influential and esteemed individuals who have experienced hearing voices (Baker, 1995). The experience has also been found to be relatively common in the general population (Barrett and Etheridge, 1992) with some suggesting the incidence of hearing voices in non-psychotic individuals to be greater than 70% (Nelson, 1997, p. 179). Despite hallucinatory experiences being relatively commonplace occurrences, auditory hallucinations are frequently associated with “madness” in western society and a symptom of ‘serious’ mental illness by western health professions.

Hearing voices may be experienced as one of many frightening symptoms in syndromes such as schizophrenia, or as a valued and sought after experience in some cultures and groups. For example, the ‘matakite’, or visionary in New Zealand Maori society is held in high regard, and prophets as described in sacred texts such as the bible are often credited with hearing voices or experiencing visions. Cultural beliefs invariably influence coping and help seeking behaviour. A comparison of coping strategy use between Saudi Arabian and UK patients whom heard voices (Wahass and Kent, 1997) found that Saudi Arabian patients used strategies associated with their religion whereas UK patients were more likely to use distraction or physiologically based approaches. Cultural attitudes towards hallucinations affect the person's emotional reaction, the degree of control over the experience, and helpers should consider the functional significance and meaning of hallucinations as well as the social context and the stimuli associated with them (al-Issa, 1995).

Hallucinations are pathognomonic of no one mental illness. They may be experienced in a range of mental disorders such as schizophrenia, depression, mania, post-traumatic stress disorder as well as drug withdrawal or intoxication, metabolic disorders, and during periods of high stress, deprivation of sleep or sensory

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stimulation. According to Chadwick et al. (1996) the evidence points to psychotic symptoms including hallucinations being on a continuum with ‘normal’ experience, rather than being outside normal functioning. Many people live with and adapt to hearing voices, for others the experience is nightmarish and debilitating.

2. Helping involves more than giving and monitoring medication

In writing about clinical supervision, Barker (1992) highlighted the differences between ‘helping’ and ‘helpful’ roles. Helpful roles involve intervening on behalf of the person in care and solving immediate problems, whereas helping roles facilitate growth and development (Barker, 1992, p. 67). The person who hears voices poses a challenge to all health professionals to balance both helpful and helping roles. Helpful roles may involve assistance in relieving immediate distress and the administration of medications to reduce or alleviate hallucinations. Administering anti-psychotic medications to someone who is clearly distressed by the content and intrusiveness of hallucinations is likely to be helpful. However, care must be taken that helpful interventions do not relegate the person to a position of helplessness. Helping interventions are those, which reinforce a sense of control and acceptance of the experience of hearing voices. Gaining a sense of control will involve learning ways to reduce fear, the intrusiveness of voices, and socially alienating behaviour in response to voices.

Even with the best pharmacological treatments many people continue to experience voices (Westacott, 1995). Complete and sustained amelioration of voices using antipsychotic medications may come at the unreasonable cost of life threatening adverse effects or stigmatising side effects. Side effects are often stated as reasons for non-compliance with antipsychotics (Sederer and Centorrino, 1997, p. 173) and it has been estimated that 24–80% of “severely and persistently mentally ill” people in the community do not take psychotropic medication as prescribed (Mulaik, 1992, p. 220). In a recent Australian survey of 980 people with diagnosed psychotic illness (Jablensky et al., 1999) it was found that for as many as 43%, symptoms were chronic and whilst for 85% symptoms responded to medication, 75% were impaired in their daily activities because of side effects. The importance of attending to and addressing peoples concerns about medication cannot be overstated. However, it is equally important for health professionals to view hearing voices as an experience that can be coped with, and to intervene to support and develop people’s coping capacities.

Central to assisting people to cope with auditory hallucinations is an understanding of the experience

from the point of view of the individual. Baker (1996) found that the dominant themes in narratives by individuals with schizophrenia included psychic pain, intertwined with themes of lack of control, failure and loss. She suggests that nurses may facilitate symptom monitoring in individuals with schizophrenia by attending to this emotional distress. Fowler et al. (1995, p. 25) state that “. . . understanding of psychotic problems may be improved by taking more account of the patient’s subjective experience of psychosis, and the ways in which people with psychosis may try to make sense of their subjective experiences, and then act to cope with them”. Nurses are in an ideal position to facilitate coping with voices through teaching, coaching, and counselling roles.

Attempts at helping the voice hearer must be informed by an understanding of the experience, a sensitivity to the person’s distress, the person’s own usage of coping strategies and the meaning the person attributes to the experience. Without such knowledge the nurse may unwittingly hinder the person’s attempts to cope and undermine their sense of self-efficacy. An understanding of the biological processes underlying the hallucinatory experience and theories of hallucinations are required to provide some direction to the nurses choice of intervention.

3. An explanatory model of hallucinations

Slade (1976) proposed a four-factor explanatory model, which may be used to consider the factors involved in the development and control of hallucinations. The model is compatible with biological explanations and shares a common assumption with many psychoanalytical and interpersonal models, which hold that hallucinations are adaptive phenomena, which protect against anxiety (Williams, 1989, p. 103).

Slade’s (1976) model proposes that hallucinations arise under conditions of heightened internal arousal (factor 1) in individuals with a predisposition or vulnerability (factor 2) to hallucinate. The prevailing level of external stimulation (factor 3) determines whether the hallucination will be experienced in consciousness. A reduction in arousal has a reinforcing effect (factor 4), which lowers the threshold for future hallucinations.

4. Internal arousal

The idea that certain kinds of situations or a particular frame of mind may precede or trigger auditory hallucinations is widely promoted. One popular nursing textbook relates the intensity of hallucinations to anxiety levels, and promotes monitoring and

intervening to lesson anxiety as key to helping the person who is psychotic (Moller and Murphy, 1998). O'Connor (1991) reviewed five studies which explored the symptoms preceding relapse of psychotic illness and found that heightened anxiety was a significant feature in all of them. It is recognised that people with schizophrenia have an extreme sensitivity to intrapersonal, interpersonal, and environmental stressors (O'Connor, 1994, p. 232) and it has been consistently demonstrated that a high degree of 'expressed emotion' by relatives to people with schizophrenia is predictive of relapse (Brooker, 1990). Exploring with an individual the patterns of occurrence and events antecedent to hearing voices has value in enabling the person to avoid or re-appraise situations in order to control or prevent voices occurring.

Nayani and David (1996) undertook a survey of 100 people who experienced hallucinations and found that body sensations, affective states and cognitive cues often preceded hearing voices. Churning or butterfly sensations in the stomach before, or at the onset of hallucinations were volunteered by 45% of participants. Sadness (52%), fear (16%) and anger (18%) were affective states that some identified as triggering hallucinations. Half of the participants identified the intention to eat as triggering voices and 62% could identify certain times of the day when they were vulnerable to hearing voices.

Different situations are likely to be appraised as stressful by different people and consequently each person may identify different triggers. This may be explained using a cognitive behavioural assessment of the activating event, beliefs about the event and consequences (see Ellis and Bernard, 1985). A central assumption underpinning cognitive behavioural analysis is that a person's beliefs, including their appraisal of what is going on in a situation, and their evaluation of the personal meaning of the situation will lead to feelings and behaviours. This is illustrated in Table 1 in which a person observing a neighbour using a telephone, falsely infers that the neighbour is talking to the police and as a result becomes fearful, anxious and begins to hallucinate. There is some evidence that people who hallucinate may be particularly prone to premature judgement about events and limited consideration of alternative explanations (Heilbrun and Blum, 1984).

Nurses can explore a person's beliefs about events in an effort to explain why some events may trigger hallucinations.

People who recognise that certain moods or patterns of thinking precede the onset of voices may eventually be able to control the voices by learning how to control or avoid particular states of mind (Watkins, 1993). This may involve learning to relax when voices occur, engaging in diversional activities, correcting negative 'self talk', seeking out or avoiding social interaction, considering the effects of drugs and alcohol on mental state and addressing physical problems that effect people's mood.

5. Hallucinatory predisposition/biological factors

All people may experience hallucinations in some circumstances and some people appear particularly predisposed. The nature of this predisposition may be traced ultimately to biochemical factors. One common explanation for hallucinations is excessive bioavailability of dopamine. The effectiveness of conventional antipsychotics at reducing hallucinations has been found to be directly related to their ability to block D2 receptors in the mesolimbic area of the brain (Keltner et al., 1998, p. 78). Furthermore, drugs that increase the stimulation of dopamine synapses, for example amphetamines or L-dopa can induce hallucinations in otherwise normal people (Kalat, 1992, p. 581). It is likely that a large number of interacting neurotransmitter systems are involved in hallucinations. For example, the disruption in the interrelationship between serotonin and dopamine systems has increasingly become the focus of attention in understanding symptoms associated with schizophrenia (Kahn and Van Praag, 1996).

Biochemical factors can also account for the role that stress may play a role in relapse in psychosis or exacerbation of hallucinations in some people. Reduced metabolism has been found in the prefrontal cortex of people with schizophrenia (Wolkin et al., 1988; Buchsbaum et al., 1992) and excess in the limbic system (Tamminga et al., 1992). O'Connor (1994, p. 233) points out that "inhibitory feedback from the prefrontal dopamine system normally halts excessive mesolimbic dopamine output". Stress is accompanied by

Table 1
An ABC analysis of an anxiety provoking event

A	B	C
Activating event	Beliefs about event	Consequences: feelings and behaviour
Observes neighbour on the phone	"The neighbour is reporting my behaviour to the police... This is terrible... They will come and take me away..."	Experiences fear and anxiety... hides in room... begins to experience voices which state that 'The police are coming'

increased dopamine activity in the mesolimbic system and due to the lack of inhibition from the prefrontal cortex, stressful events trigger excessive and prolonged dopamine output in this region which in turn leads to psychotic symptoms. Differences in the availability of dopamine may account for why stressful events may lead to extreme reactions such as hallucinations in some people. Differences in functioning at the level of the synapse are also translated into differences in cognitive functioning or thinking.

Hallucinations occur when private, or mental events are not attributed to the self (Bentall et al., 1994, p. 53). This idea is not new, for example, Sullivan (1953) proposed that hallucinations are residuals from early experience and become dissociated, or “not me” because of the intense anxiety that “owning” them might cause. More recent research supports a number of theories of faulty cognitive processes underlying hallucinations.

In a test which involved recalling the source of words after individuals were asked to listen to some words and imagine others, Rankin and O’Carroll (1995) found that, people highly predisposed to hallucinating were significantly more likely to falsely remember hearing words than others. Morrison and Haddock (1997) found that people who hallucinated were more likely to falsely misattribute emotionally laden words to external sources compared to emotionally neutral words. The predisposition towards hallucinations may be secondary to a bias towards misattributing internal events to external sources.

The source of this bias may be traced to a disruption in the areas of the brain concerned with the generation and monitoring of inner speech. McGuire et al. (1996) found different patterns of neuronal activation when voice hearers were asked to imagine sentences spoken in another person’s voice compared to non voice-hearers. These findings suggest that hallucinations involve “... defective communication between the ‘mind’s voice’ and the ‘mind’s ear’” (McGuire et al., 1996, p. 158) and that these differences are apparent in parts of the brain involving monitoring inner speech even when a voice is imagined. Nelson (1997, p. 184) suggests that it may be relatively easy to mistakenly attribute one’s own thoughts to external sources because some of the same parts of the brain are involved in the process of listening to one’s own thoughts and hearing others talking. Once falsely attributed to an external source, thoughts are subjectively experienced as being ‘heard’.

There is some evidence that people who hear voices may have a relatively enduring functional abnormality of the left hemisphere of the brain, which is thought to be dominant for speech in most people. When two different stimuli are presented to both ears simultaneously non-voice hearers are better able to accurately report the stimuli presented in the right ear, whereas this right ear dominance appears to be absent in voice

hearers (Green et al., 1994). Single photon emission tomography has also confirmed decreased left temporal lobe function and atypical right hemisphere dominance in those with recent experience of auditory hallucinations (Gordon et al., 1994). These findings lend support to the idea hallucinations may arise in the non-dominant hemisphere, and that the dominant hemisphere perceives this self-generated verbal material as alien, due to problems of information transfer between hemispheres (Birchwood, 1986). The idea of reducing sensory stimulation on the non-dominant side through the use of an earplug has been proposed as one simple method to correct the imbalance between hemispheres and to reduce conflicting stimuli.

Further research has investigated the process of speech production. Hallucinations, at least in some people may reflect ‘sub vocal’ speech, which is supported by the observation that many people appear to experience relief from voices by talking out loud, or exercising the muscles involved with speech (Green and Kinsbourne, 1990; Gallagher et al., 1994; Green et al., 1994; Gallagher et al., 1995). Covert movements of muscles involved in speech also accompanies normal thinking, or inner speech which tends to support the theory that hallucinations are a type of inner speech, misattributed to an external source (Morrison and Haddock, 1997). In one published case, the content of amplified sub-vocal speech corresponded to the self-reports of a person’s hallucinations (Green and Preston, 1980). Green and Kinsbourne (1990) found that humming a single note significantly reduced the self-reported intensity of auditory hallucinations in a group of 20 people with a history of frequent hallucinations. Other studies have not supported the assumptions underlying this intervention, for example, Levitt and Waldo (1991) found that of 16 people who were experiencing hypnotically induced hallucinations, none were able to abolish the hallucination by opening their mouths (an activity that would presumably interfere with sub-vocal speech).

Gallagher et al. (1995, p. 154) suggest that it remains to be determined whether or not overt verbalisations reduce the reported intensity of hallucinations because they are suppressing sub-vocalisation or because the subject is attending to the task. Nevertheless, there is sufficient evidence to suggest that people find talking helps reduce the intensity of hallucinations and that activities such as singing, humming, swallowing or even counting ‘under ones breath’ may be effective at reducing the intensity of hallucinations.

6. External stimulation

Feder (1982) asserts that people can only properly cognitively attend to the source (external or internal) of

greatest stimulation. The level of competing auditory stimulation will determine whether or not hallucinations are experienced in consciousness (Slade, 1976). This has important implications for nursing as practices such as seclusion are often justified on the basis of reducing external stimulation, despite some evidence that sensory deprivation may exacerbate hallucinations (Kennedy et al., 1994).

Margo et al. (1981) exposed seven patients who were actively hallucinating to nine forms of auditory stimulation presented in a random sequence. Between each condition, participants rated the voices according to duration, loudness and clarity. Requiring a person to read aloud and then describe the content of the material read, led to the greatest reduction in loudness, duration and clarity of the voice. They concluded that structured, meaningful and attention-demanding stimulation has positive effects on the hallucinations.

Listening to 'white noise' has been found to extend the duration and increase the loudness of hallucinations (Margo et al., 1981; Gallagher et al., 1994). It may be hypothesised that naturally occurring un-patterned noise, such as traffic noises, background chatter (as in a busy day room), or a droning radio or television in the background may make hallucinations worse. Just as it reflects good practice to ensure that a room is brightly lit to avoid misinterpretation of shadows by someone who is experiencing visual hallucinations, so it may be recommended that un-patterned or ambiguous noise is reduced for someone who maybe prone to experiencing auditory hallucinations.

Listening to a radio or tape using headphones has been found to be effective strategy to reduce the intensity of hallucinations (Feder, 1982; McInnis and Marks, 1990), as has watching television (Magen, 1983; Buccheri et al., 1997). Arguably, any loud noise ought to be able to drown out hallucinations. Paradoxically, the techniques, which some people may find most helpful, others find aggravating. Television whilst helpful to many has been found to induce hallucinations in others. Nayani and David (1996) have found that many people find watching the news hallucinogenic. This may be because the television news has particularly emotive and personally relevant content and suggests that an assessment of ideas of reference should precede recommendations to watch television or listen to the radio.

Listening to music via headphones has been found particularly helpful although the personal meaning attributed to the music may have some bearing on its effectiveness. Margo et al. (1981) found that listening to a recording of the Bee-Gees was not as effective as listening to an interesting or boring speech. On the other hand, in a replication of the study Gallagher et al. (1994) found that listening to Fleetwood Mac via head headphones led to the greatest reported reduction in duration of voices. People are likely to find that certain types of

music more effective than others, due in part to the emotional associations that specific pieces of music may hold for individuals.

Engaging in activity that involves movement and verbal responses has been found more helpful at reducing the intensity of hallucinations than movement or verbal responses alone (Gallagher et al., 1995). However, 12 months after a series of training sessions on coping strategies Buccheri et al. (1997) found that talking with someone, watching TV and listening to music with earphones were the most frequently self-selected strategies for managing hallucinations. Other work on coping (Falloon and Talbot, 1981; Frederick and Cotanch, 1995; Nayani and David, 1996; Farhall and Gehrke, 1997) suggests that people self-select a wide range of coping strategies, which involve cognitive techniques (e.g. reducing attention given to voices), changing physical arousal (e.g. walking or listening to music), and behavioural strategies (choosing to isolate self or seeking out interaction). Given the seemingly idiosyncratic response to various strategies it would seem sensible to work with individual's who wish to control hallucinations to experiment with strategies, particularly those which combine reducing arousal, focusing attention and increasing meaningful auditory stimulation. Music, singing, dance, and talking are likely to be helpful.

7. Reinforcement effects

According to Slade's (1976) model, the reduction in arousal as a result of the hallucination lowers the critical threshold for future hallucinatory experiences. Nayani and David (1996) noted that over time the dialogue of voices appears to become more complex, extended and increasingly come to invade the patient's private life. These changes also appear to relate to a lessening of distress and improved coping (Nayani and David, 1996, p. 187). Miller (1996) interviewed 50 hallucinating patients on admission and just prior to discharge. She found that most continued to experience voices after treatment but that the quality of the experience changed, in that many had a sense of increased control, improved mood and the voices appeared more predictable.

Behavioural reinforcement strategies have been used successfully to reduce hallucinations or behaviour associated with hallucinations, in some people. Belcher (1988) described modifying aggressive verbal responses to auditory hallucinations by a 60-year-old man in a rest home. Whenever the man verbally responded to hallucinations nursing staff informed him that the behaviour was inappropriate. If after 30 s the man had not quietened, nursing staff would walk with him in the hallway (which he considered mildly aversive) until he was quiet. The number of aggressive outbursts was

reduced from 4.66 to 0.34 episodes per day after 20 weeks. Jimenez et al. (1996) reported success using a behavioural modification programme with a 49-year-old man who had a 20-year history of laughing and talking to himself in response to hallucinations. Reinforcement such as pats on the back, praise and token reinforcement were given at 15-min intervals when the man attended to tasks without overtly responding to hallucinations. A sharp decrease in behaviours suggestive of hallucinations was reported.

Behavioural reinforcement strategies, which aim to decrease the frequency of bizarre behaviour, may decrease the frequency of hallucinations directly or indirectly by increasing the person's repertoire of skills (Corrigan and Storzbach, 1993). Successful programmes reported in the literature are characterised by careful consideration of the target behaviours, the identification of meaningful reinforcers, consistency in application of the plan, and a large investment in staff time. Corrigan and Storzbach (1993, p. 345) recommend teaching coping skills if symptoms are causing great distress and targeting symptoms operantly if they cause alienation of others. In routine practice nurses should consider using positive reinforcement, that is praise or some form of meaningful reward for engaging in pro-social behaviour or practising coping strategies.

8. Cognitive behavioural therapy

Cognitive behavioural therapy for hallucinations encompasses consideration of all the strategies outlined but it assumes that distress and coping behaviour are consequences not of the hallucination itself, but of the individual's beliefs about the hallucination (Chadwick et al., 1996, p. 19). Chadwick and Birchwood (1995) suggest that much distress and voice-driven behaviour is shaped by beliefs about the voices' power, identity and purpose. Many people believe their voices are all knowing and all powerful (Chadwick and Birchwood, 1995). Beliefs such as the identity attributed to the voice and whether the voice is considered malevolent or benevolent has a close relationship with coping behaviour and affective response (Birchwood and Chadwick, 1997). These beliefs may develop "...as part of an adaptive process to the experience of voices, and are underpinned by core beliefs about the individuals self-worth and interpersonal schemata" (Birchwood and Chadwick, 1997, p. 1345).

In reference to the ABC model of assessment outlined in table one, cognitive therapy treats hearing voices as an activating event and aims to change the beliefs about voices that may cause adverse consequences. For example, believing that a voice may cause harm if instructions are not followed is likely to cause distress and fear. The primary aim of therapy in such cases will

be to show the person that the voices cannot cause physical harm (Nelson, 1997, p. 196). Enhancing the person's use of strategies to control the experience of hallucinations will refute the belief that the voices are all powerful. Whereas many of the strategies described aim primarily to control hallucinations directly, cognitive therapy aims to address the consequences of hearing voices. Research suggests that ultimately this approach may have an effect on the hallucinations themselves.

Controlled trials of intensive cognitive behaviour therapy (CBT) in conjunction with medication for patients with chronic schizophrenia has shown promising results (Drury et al., 1996; TARRIER et al., 1998). Twenty sessions consisting of coping strategy enhancement, problem solving and relapse reduction training led to a significant decrease in the severity and number of positive symptoms compared to those who had an equivalent number of supportive counselling sessions or routine care (TARRIER et al., 1998). More impressively, of 85 patients followed up over three months, those in the routine care group spent a total of 204 days in hospital, whereas, only one from both the cognitive behaviour therapy and supportive counselling group spent 1 day in hospital (TARRIER et al., 1998). While studies have been criticised for not controlling for differences in medication between groups (Johnson, 1996), such results do lend support to the potential effectiveness of cognitive therapy programmes as an adjunct to medication.

With appropriate training and supervision nurses may be ideally placed to extend their counselling role to include cognitive therapy for hallucinations (See: Sullivan, 1997). Cognitive therapy requires a balance between helping and helpful roles (as described by Barker, 1992). At the very least nurses ought to explore with the person how beliefs about voices may affect their response to voice hearing.

Beliefs about voices are central to assessing risk. For example, compliance with command hallucinations will be influenced by beliefs about the power and authority of the voice, and beliefs about the consequences of doing what the voice says. Doing what voices say is not uncommon. Junginger (1995) concluded that psychiatric patients who experience command hallucinations are at risk for dangerous behaviour and that their ability to identify the hallucinated voice is a fairly reliable predictor of reported compliance. Junginger (1995) found that people tended to comply with less dangerous commands and were less likely to comply with commands in hospital than at home. People can develop a relationship with voices over time, which is characterised by expectations and beliefs about the nature of the relationship, meets certain needs and may be valued to a greater or lesser degree. These beliefs are amenable to exploration and change over time.

9. Caring for the person experiencing hallucinations

Consideration of the research on auditory hallucinations in light of Slade's (1976) explanatory model of hallucinations can inform nursing practice. The experience of hearing voices is individual and at this time there are few universal "rules of thumb" in caring for the person. The nurse needs to be cognisant of the role that stress can play on the development of hallucinations and may explore with the person situations or events that may trigger hallucinations. Interventions, which assist in reducing anxiety and solve problems, which cause stress, are likely to be helpful. Vulnerability to hallucinations may be accompanied by a predisposition to misinterpret external events or to misattribute internally generated events to external sources. The nurse can play a crucial role as a trusted person with whom the individual can discuss and validate his or her perceptions. The nurse will be aware of the need to communicate in unambiguous terms and will understand the difficulties that the person may have communicating when hearing voices.

Medication will be integral to the treatment of many people who hear voices. This paper has focused on non-pharmaceutical forms of intervention. Clearly, however medications may play an important role in controlling hallucinations through altering the threshold for hallucinatory experiences and correcting cognitive deficits (antipsychotics), reducing arousal (anxiolytics and anti-psychotics) and controlling mood (mood-stabilisers/antidepressants).

The nurse can explore with the person strategies, which may be effective in controlling hallucinations such as the use of ear plugs, talking, manipulating the environment, listening to music using headphones and activity. The nurse will understand that reducing auditory stimulation may lead to an exacerbation of hallucinations, but that some types of stimulation may increase stress or trigger hallucinations. The nurse may play a crucial role in structured behavioural modification plans but can also play an important role by reinforcing coping strategies that maximise a person's sense of control over the hallucinatory experience.

An awareness of the principles of cognitive behavioural therapy will alert the nurse to exploring the beliefs that a person may have about voices. Behaviour may frequently be understood in light of the beliefs people hold. This applies equally to health professionals as it does to voice hearers. Health professionals who believe that people who hear voices are unable to help themselves are unlikely to be of help to the person. People who hear voices can and do engage in coping behaviour, and the health professional can help by listening, suggesting, guiding, coaching and encouraging people to utilise strategies to cope with hallucinations.

This paper has reviewed some of the key research findings in relation to hearing voices and attempted to structure these findings under the umbrella of Slade's (1976) explanatory model of hallucinations. For the sake of parsimony, a critique of the research has not been offered. It is worth noting that the research in this area has typically involved small samples in highly specific populations, often in experimental conditions, and operational definitions of coping are generally obscure. Nevertheless, when viewed collectively the research results do lend support to at least a working model of auditory hallucinations (open to revision) and provides some optimism and rationale for the effectiveness of nursing interventions to help people cope with hallucinations.

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