Directions Part II, Biopsychosocial Risk and Resilience Assessment Formulate a risk and resilience assessment, both for the onset of the disorder and for the course of the disorder, including the strengths that you see for this individual.

INTERVENTION

There is consensus that the treatment of schizophrenia should be multimodal and include interventions targeted at specific symptoms as well as the social and educational needs of the client and family. A range of interventions will be reviewed in this section. It must be emphasized, however, that many people with schizophrenia are unable, or choose not, to engage in consistent interventions over time. Some factors related to client satisfaction and treatment adherence include an absence of significant adverse drug effects, participation in treatment planning and decision making, and family members being involved in the intervention plan (Chue, 2006).

Medication

Medication is the primary intervention modality for people with schizophrenia. It cannot "cure" a person of the disorder but can be effective in eliminating or reducing many of the symptoms. The first-generation antipsychotic drugs, most popular from the 1950s through the 1980s, act primarily by binding to dopamine receptors and blocking their transmission (Leonard, 2003). These medications act on all dopamine sites in the brain, although only those in the forebrain contribute to the symptoms of schizophrenia. A reduction in dopamine in other areas (extending from the midbrain to basal ganglia) causes the adverse effects of akathisia (restlessness and agitation), dystonia (muscle spasms), parkinsonism (muscle stiffness and tremor), and tardive dyskinesia (involuntary muscle movements of the face and limbs). Other medications (called "anticholinergic") are often prescribed to combat these adverse effects, although they in turn have their own adverse effects of blurred vision, dry mouth, and constipation.

The "second-generation" antipsychotic medications, available in the United States since the late 1980s, act differently from those developed earlier. Clozapine, the first of these, acts selectively on dopamine receptors (Faron-Górecka et al., 2008). Their sites of action are the limbic forebrain and the frontal cortex, and thus they do not carry the same risk of adverse effects for the muscular system. The fact that they block receptors for serotonin suggests that this neurotransmitter also has a role in the production of symptoms. Risperidone, introduced in 1994, has fewer adverse effects than the first-generation drugs and for a time was the most widely prescribed antipsychotic drug (Yu et al., 2006). Olanzapine, sertindole, ziprasidone, quetiapine, aripiprazole, paliperidone, asenapine, and amisulpride are other newer medications on the market (Bentley & Walsh, 2013). Their somewhat greater alleviation of negative symptoms suggests that serotonin antagonist activity is significant in this regard. All of the medications have their strongest effect in their first 2 weeks of use (Zhu et al., 2017).

Both the first- and second-generation medications continue to be used to treat people with schizophrenia. Recent literature reviews have found that, despite the many medications currently on the market, all of them are potentially effective for reducing the symptoms of schizophrenia, although they may or may not improve the person's quality of life. A meta-analysis by Harvey, James, and Shields (Harvey, James, & Shields, 2016) concluded that the medications are helpful in alleviating both positive and negative symptoms in first-episode schizophrenia, although haloperidol, molindone, risperidone, and olanzapine show the strongest effects. Another systematic review

found that both the first- and second-generation antipsychotic medications can be effective for long-term prevention of relapse (Leucht et al., 2012). Prescribing practices depend on the physician's preferences and the client's history and financial status (the older medications are less expensive). The medications are effective for use with adolescents as well as adults (Kumar, Datta, Wright, Furtaldo, & Russell, 2013). Their effects on older adults have not been studied as extensively, however, so there is less data to guide decisions about which medications to prescribe for them (Alpert, 2016). There is some evidence from a recent meta-analysis that the newer atypical antipsychotic medications are safer for older adults than the first-generation drugs (O'Brien, 2016).

While almost all physicians recommend antipsychotic medication for people with schizophrenia, their relative risks and benefits with regard to the patient's physical and emotional well-being are subject to debate. Studies of drug effectiveness for schizophrenia consistently show that many clients discontinue their medication for a variety of reasons, such as perceived ineffectiveness and adverse effects. The Leucht et al. (2012) study noted above found that, even though the second-generation drugs have milder side effect profiles than the first-generation medications, discontinuation rates for those consumers are as high as for users of the older drugs. A systematic review concluded that a positive therapeutic relationship, a positive attitude about medication, and illness insight are the only client factors associated with better adherence (Sendt, Tracy, & Bhattacharyya, 2015).

Because the effectiveness of antipsychotic medications varies from person to person, and not all clients respond to a single drug, a combination of medications is sometimes prescribed. In two reviews of trials in which different antipsychotic combinations were compared with single antipsychotics, it was found that the combinations were often more effective (Ortiz-Orendain et al., 2017; Rubio, Inczedy-Farkas, Leucht, Kane, & Correll, 2016). Still, no differences were found between combination and single antipsychotics for preventing relapse, and roughly equal numbers of people eventually discontinued the medications. There was also no difference between combination therapy and monotherapy regarding hospital admission and the occurrence of adverse events. Antidepressant medications are sometimes used in combination with antipsychotic medications, especially for people with negative and depressive symptoms. A systematic review of 82 trials with 3,608 participants found that add-on antidepressants can be effective for these purposes, although the effect sizes are small (Helfer et al., 2016). The antidepressants appear to be safe with no difference compared to control groups in dropout rates, exacerbation of psychosis, and side effects. Other types of medication occasionally prescribed for people who have schizophrenia, usually along with the antipsychotic drugs, include the benzodiazepines and mood stabilizers (Wolff-Menzler, Hasan, Malchow, Falki, & Wobrock, 2010). There is no clear evidence that these medications help alleviate symptoms of depression or control psychotic symptoms, however.

Electroconvulsive therapy (ECT), which is the induction of a seizure by administering an electrical shock to the scalp, is an intervention that has been used for more than 50 years with people who have schizophrenia, but usually only after several medications have not been effective, or when the client is both unresponsive to medications and suicidal. Although controversial, ECT was reviewed in a recent meta-analysis and found to be an effective short-term option for alleviating symptoms (Lally et al., 2016).

Psychosocial Interventions

Individual Interventions

The utility of psychodynamic interventions with schizophrenia has received limited empirical support. Malmberg and Fenton (2005) concluded that individual psychodynamic treatment is not effective in symptom reduction, reduced hospitalizations, and improved community adjustment.

One positive aspect of this type of intervention, however, is that it alerts the social worker to the importance of the worker–client relationship. People with schizophrenia are often initially distrustful of service providers, so practitioners must take care to develop and maintain a positive working alliance with their clients over time.

Cognitive-behavioral therapy (CBT) is based on the premise that current beliefs and attitudes mediate much of a person's affect and behavior (Kuipers et al., 2006). It encourages clients to openly discuss their beliefs, emotions, and experiences, and then participate in assessing the rationality of their behavior and symptoms. If the client appears to be thinking "irrationally" in any of these core areas (i.e., drawing conclusions that are insufficiently based on external evidence), the social worker helps the client develop more "rational" thinking. Clients are helped to (1) modify their assumptions about the self, the world, and the future; (2) improve coping responses to stressful events and life challenges; (3) re-label psychotic experiences as symptoms rather than external reality; and (4) improve their social skills. It is important to emphasize in this regard is that some clients with schizophrenia, while psychotic, can think objectively about some of their experiences.

While CBT interventions are commonly used with clients who have schizophrenia, findings about their effectiveness are conflicted. A meta-analysis of 31 papers concluded that there were no significant differences between CBT and other talking therapies, although there was some evidence that it might help clients better manage their negative emotions (Jones, Hacker, Cormac, Meaden, & Irving, 2012). Another review of seven available studies compared long (12–20 sessions in four to six months) versus brief (6–10 sessions in four months or less) CBT interventions and found no differences between them (Naeem, Farooq, & Kingdon, 2015). On the other hand, a review by O'Donnell and Martin (O'Donnell & Martin, 2016) investigated methodological issues in prior meta-analyses and suggested that CBT interventions are at least moderately effective in reducing the strength of one's delusions and hallucinations, negative symptoms, anxiety, and depression, and increasing insight and quality of life. They concluded that CBT might achieve its positive effects by decreasing a person's negative emotional reactions when feeling stressed. Another meta-analysis indicated that CBT interventions are effective in helping clients reduce their internalized sense of stigma about having a chronic mental disorder (Wood, Byrne, Varese, & Morrison, 2016). Finally, social skills training (SST) appears to be generally effective, with certain caveats (Kurtz & Mueser, 2008). Clients perform best on tests of the content of their training but less well on their transfer of that training to activities of daily living. SST also seems to have a mild positive effect on general measures of pathology.

Group Interventions

Group interventions include insight-oriented, supportive, and behavioral modalities. They are often used in conjunction with other interventions such as medication and CBT. There are few controlled studies of group therapy. In his review of the literature on both inpatient and outpatient groups, Kanas (2005) concluded that for people with schizophrenia, groups focused on increased social interaction and managing symptoms were often effective. Group interventions are widely used in inpatient settings, but there is little evidence of their effectiveness in helping stabilize people who are highly symptomatic.

A systematic review of group interventions over a 20-year period, including studies with at least 20 participants and a control group, found that a majority (10 out of 16) involved cognitive-behavioral therapy (CBT) and focused on participants' development of social and vocational skills (Segredou et al., 2011). (Five studies used a psychoeducational approach. In most studies there was insufficient information regarding the clinical state of participants prior to the intervention and the competence of the therapists. There were also differences among the 10 studies in terms of duration, follow-up period, sample size, use of a control group, use of evaluation tools, and outcome

measures. Still, in all the studies, improvement in at least one parameter was significantly higher than that found in the control group, most often in particular life skills and less often in symptoms. It is not known whether the skills learned were retained in the clients' everyday lives. Only four studies provided long-term follow-up data.

Family Interventions

Family participation in the client's intervention is a resilience influence (Pharoah, Mari, Rathbone, & Wong, 2010). When a person has schizophrenia, a chronic emotional burden develops that is shared by all family members. Their common feelings include stress, anxiety, resentment of the impaired member, grief, and depression. The related concept of family (or caregiver) expressed emotion (EE) has been prominent in the schizophrenia literature for the past 40 years (Kymalainen & Weisman de Mamani, 2008). EE can be defined as the negative behaviors of close relatives toward a family member with schizophrenia including emotional overinvolvement and expressions of criticism and hostility. The concept is not used to blame family members for the course of a relative's illness, but to affirm that families need support in coping with it. A review of the literature showed that family interventions designed to reduce EE tend to decrease relapse and increase medication compliance, although families are still left with a significant burden (Pharoah et al., 2010).

Another comprehensive literature review concluded that family interventions focused on psychoeducation reduce relapse rates for people experiencing schizophrenia up to 40% more than those in control groups (McFarlane, 2016). The multifamily group format reduces those rates by another one-third. Studies support the efficacy of directive, cognitive, and behavioral family interventions. Recent applications in first-episode psychosis have also shown promising results, leading to their increasing dissemination in the United States and elsewhere. A partial failing of these studies, however, is a failure to document the precise mechanisms by which the approach is effective. It is clear that reducing expressed emotion, the original goal, is necessary but not sufficient. Improvements in functioning and family well-being appear to be related to modifications in coping strategies to address stressors and the client's cognitive impairments.

Intensive Community Treatment and Case Management Interventions

Case management is a term used to describe a variety of community-based intervention modalities designed to help clients receive a full range of support and rehabilitation services in a timely, appropriate fashion (Northway, 2005). Case management interventions are usually carried out in the context of large, community-based programs. The most famous of these, PACT (Program for Assertive Community Treatment; a name that is specific to this single program), was developed by Stein and Test (1980) in Wisconsin and has been replicated in many sites around the world. The core characteristics of the PACT model of service delivery are assertive engagement, service delivery in the client's natural environment, a multidisciplinary team approach, staff continuity over time, low staff-to-client ratios, and frequent client contacts. Services are provided in the client's home or wherever the client feels comfortable and focus on everyday needs. Frequency of contact is variable, depending on assessed client need. Other kinds of case management programs share some, but not all, characteristics of the PACT model. A bit more generally, Intensive Case Management (ICM) is a community-based intervention that may or may not be provided by teams, but emphasizes the importance of small caseloads (fewer than 20) and high-intensity input.

A number of comprehensive reviews of assertive community treatment ACT have been conducted. (These are programs very much like PACT but provided in other areas of the country.) A systematic literature review of 38 studies by Dietrich, et al. (2017) concluded that clients receiving ACT services were significantly more likely to remain in treatment, experience improved general functioning, find employment, not be homeless, and experience shorter hospital stays. There was

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also a suggestion that such clients had a lesser risk of death and suicide. More recently, Dietrich et al. (Dietrich et al., 2017) conducted a systematic review comparing the effects of ICM with non-ICM (caseloads greater than 20) and standard community care. They did not distinguish between models of ICM but reviewed all relevant randomized clinical trials focusing on people age 18 to 65 with severe mental illness and treated in community settings. They located 40 such trials in Australia, Canada, China, Europe, and the United States, which together included over 7,500 clients. They found that when ICM was compared to standard care, those in the ICM group were more likely to stay with the service, experience improved general functioning and employment, have housing, and experience shorter hospital stays. When ICM was compared to non-ICM, the only clear difference was that those in the ICM group were more likely to remain in treatment. The authors add that the evidence was of a moderate quality and it was difficult to make valid comparisons among sites given their different health care and social support systems. The authors were unable to draw conclusions about quality of life and patient and career satisfaction because different scales were used to measure these outcomes.

Vocational Rehabilitation

Vocational rehabilitation is work-related activity that provides clients with pay and the experience of participating in productive social activity. The goals of vocational programs may be full-time competitive employment, any paid or volunteer job, the development of job-related skills, and job satisfaction.

Two reviews indicate that vocational rehabilitation services are helpful in securing competitive employment for people with schizophrenia. In one review of 25 randomized controlled trials published between 1986 and 2015 it was found that engaging in such interventions increased the likelihood of participants' obtaining a competitive job and working comparatively more hours (Carmona, Gomez-Benito, Huedo-Medina, & Rojo, 2017). There was no evidence of effectiveness regarding wages earned. The researchers added that comprehensive treatments beyond vocational intervention are necessary to address the functional deficits that hinder participants' job performance.

Another review investigated the extent to which supported employment (which tries to quickly place people into competitive jobs in normal settings where they receive intensive support from job coaches) was useful compared to other interventions (Kinoshita et al., 2013). The authors explained that these services may feature assertive community outreach, job workshops, job counseling, client choice, peer support, close relationships between employers and mental health providers, and for some clients, job positions created at agency-run clubhouses. (Clubhouses programs are those in which members work side by side with staff to complete the work of the facility; members are not paid, but an employment specialist helps place members in community jobs.) The authors located 14 trials including 2,265 people and concluded that supported employment enables participants to find jobs more quickly and increases the length and time of their employment. The authors acknowledge that there is limited information or measurable differences on other issues such as quality of life, mental status, days in the hospital, and service costs. Another systematic review suggests that ACT intervention models produce vocational outcomes that are superior to usual treatment, particularly when teams designate a vocational specialist (Kirsh & Cockburn, 2007).

"Recovery" Interventions

During the past 25 years recovery in schizophrenia has been conceptualized less as a return to a symptom-free level of functioning and more as a process of developing individual potential and realizing life goals while managing the difficulties presented by the disorder. The disorder becomes less central in a person's life as he or she works toward outcomes that bring meaning and life satisfaction (Roberts, 2009). The client often works toward these outcomes with the assistance of peers, and they prefer to see professionals as partners rather than experts.