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# Ya-Ling Chen, Barbara Rittner, Amy Manning and Rebekah Crofford

## EARLY ONSET SCHIZOPHRENIA AND SCHOOL SOCIAL WORK

*Schizophrenia, while most commonly adult onset, does occasionally occur in children and adolescents. Youths appropriately diagnosed with schizophrenia tend to have significantly lower school success and face more daily academic challenges which can be insurmountable. This article reviews prevalence rates, controversies associated with diagnosis, and school and social problems that youths with schizophrenia confront in the context of classifications, symptoms and course of childhood onset of schizophrenia. Implications for school social workers are discussed.*

**Keywords** early onset; schizophrenia; psychosis; school social work

### Overview of the disorder

In the USA, children with early onset schizophrenia and their families are burdened with both coping with the disorder and frustrations getting appropriate comprehensive services they need to manage the disorder. This is in contrast to many Western countries with more progressive, comprehensive and less fragmented health care where comprehensive services and treatment needs would be wholly or partly met by the state.

The general public and even many professionals view schizophrenia as a disorder with an onset in the late teens and early adulthood, although it has been recorded in childhood and early adolescence – with the caveat that it is a rare occurrence (Asarnow, 1994). Descriptions of various psychotic symptoms in children began to appear in the psychiatric literature at about the same time as descriptions of psychotic symptoms in adults (Asarnow & Asarnow, 1994). While schizophrenia is very rare in young children, there are documented incidents among children as young as 5 years of age (Russell *et al.*, 1989; Spencer *et al.*, 1992). Others argue that making a diagnosis of early onset psychosis or schizophrenia spectrum disorder is severely compromised by the difficulty of assessing thought disorder through middle latency because these children are resistant, and in many ways unable to discuss thought processes (Caplan, 1994).

There has been a delineation of three age-specific subgroups in schizophrenia: adult onset (AOS), early onset (EOS) and childhood onset (COS). AOS specifically refers to onset at or above the age of 20 years, EOS refers to onset before the 19th birthday while COS is specific to a diagnosis by age 13 years (Rhinewine *et al.*, 2005; Kumra *et al.*, 2009). In general, the 18th birthday is the most common cut-off age for EOS when it incorporates both EOS and COS (Rhinewine *et al.*, 2005; Burke *et al.*, 2008; Fulton *et al.*, 2008; Tang *et al.*, 2010). This paper focuses on those below age 18 with EOS, specifically those with a diagnosis of a schizophrenia spectrum disorder limited to schizophrenia, schizophreniform and schizoaffective disorder and excludes psychotic mood disorder or organic psychosis before their 18th birthday based on the International Statistical Classification of Diseases and Related Health Problems (ICD) or the Diagnostic and Statistical Manual of Mental Disorders (DSM) (Fagerlund *et al.*, 2006; Reichert *et al.*, 2008; Øie *et al.*, 2011).

Among the more common terms used to describe childhood presentation before age 18 of schizophrenia is early onset psychosis (EOP) (Thomsen, 1996; Fulton *et al.*, 2008), which encompasses schizophrenia, schizophreniform disorder, schizoaffective, psychotic mood disorders, psychosis not otherwise classified and organic psychosis (Sikich, 2008; Ledda *et al.*, 2009). Concerns are raised by the fact that increasingly more children are being treated with antipsychotics for non-psychotic diagnoses, leading to inflated assumptions about rates of EOP and what constitutes EOP. This position was reinforced by Olfson, Blanco, Liu, Moreno, and Laje (2006) who noted a sharp increase in physicians prescribing second-generation antipsychotic medications for disruptive behaviours associated with mood disorders and other disruptive behaviour diagnoses. Clearly youths on antipsychotic medications alone should not be considered indicative of EOP or EOS.

#### *Associated behavioural and emotional characteristics in EOS*

Early onset schizophrenia has always been subsumed under schizophrenia, although the definitions of childhood schizophrenia have been very variable (Asarnow *et al.*, 1994b; Cornblatt *et al.*, 1998). Historically there have been evolving representations and classifications of this disorder, resulting in a great deal of confusion. Before the 1970s, COS was categorized within the broader nosology of childhood psychosis, which puzzlingly included what is now referred to as autism spectrum disorder. The second edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-II) (American Psychiatric Association, 1968) required only psychotic speech and thoughts to make a diagnosis, but ironically failed to specify the current hallmark criteria of schizophrenia – hallucination and/or delusions. Not surprisingly, the DSM-II criteria resulted in problematic diagnostic overlaps with other psychotic disorders and within the pervasive developmental disorder spectrum, engendering the belief that autism was a form of psychotic disorder (McDonnell & McClellan, 2007). The proposed revisions for the DSM-III included attempts to resolve the diagnostic confusion differentiating EOS, infantile autism and pervasive developmental disorders by creating distinct diagnostic criteria for each (Rutter, 1972). Beginning with the DSM-III and in the current schematics for schizophrenia in both the ICD and the DSM, schizophrenia requires psychotic symptoms such as presentation of bizarre delusions and presence of hallucinations. They do not, however, delineate differential aspects for COS, EOS and

AOS (McDonnell & McClellan, 2007). In the development of the DSM-V, the American Psychiatric Association did not provide specific symptoms for EOS but did note that earlier onset predicts a poorer outcome (APA, 2014).

### *Onset patterns in youth with schizophrenia*

The literature suggests that any psychiatric diagnoses in children should be considered with suspicion. As Kim-Cohen *et al.* (2003) correctly observed, over diagnose psychiatric disorders are common in children, and in their longitudinal study, EOS seemed to be especially unreliable. Furthermore, discussions about severe childhood responses to adverse childhood events, extreme poverty, neglect and trauma appear implicated in both the onset of schizophrenia and the severity of the symptoms, but there has been little systematic research in recent years supporting these as contributing factors (Caton *et al.*, 1998). Most recently, DeRosse *et al.* (2014) attempted to assess the correlation between trauma and abuse histories with increased risk for psychotic symptoms in hospitalized patients compared to general population controls, but found the differences were not statically significant.

In reality, little is known about its aetiology or long-term disease process. Prevalence rates for EOS show it is more common in males (Green *et al.*, 1992; Schothorst *et al.*, 2006). Chronic or insidious onset appears more common in males under the age of 12, and acute onset is more common in females approaching adulthood (Green *et al.*, 1992; Thomsen, 1996; Eggers & Bunk, 1997). In the premorbid period, only some youths are entirely behaviourally and cognitively normal prior to the onset of illness; and it is during this phase that both positive symptoms of hallucinations and delusions as well as the negative withdrawal and introversion symptoms emerge (Hollis, 2003; McClellan *et al.* 2003; Schothorst *et al.*, 2006; Wozniak *et al.*, 2008; Meng *et al.*, 2009).

Equally uncertain are possible premorbid and comorbid conditions associated with an increased probability for EOS, including the role of attention-deficit hyperactive disorder and development of psychosis in youths with family histories of schizophrenia, but findings were inconclusive (Keshavan *et al.*, 2003). Many youths with schizophrenia present with depressive symptoms prior to their transition to psychotic symptoms, and there is apparent continuity in severity of depressive symptoms over the developmental course of the illness (Myles-Worsley *et al.*, 2007). A recent study found links to severe depression, negative schizophrenia symptoms and higher rates of suicide attempts, especially with comorbid alcohol use in males with EOS (Romm *et al.*, 2010). Models have been developed to examine the role of cortical activity in post-traumatic stress and attention-deficit disorders as a trigger for EOS, but findings suggest that they are discrete comorbid disorders rather than predictive or part of a spectrum (Rowe *et al.*, 2004). Additional research on phenomenological, cognitive, neuroimaging and genetic data indicates that cognitive and neurobiological abnormalities are similar in EOS and AOS (Kumra & Schulz, 2008). However, course variability in COS appears greater than is observed in AOS, and it appears that COS results in more severe symptoms and consequences over time (Eggers *et al.*, 2000).

There has been some exploration of genetic vulnerability in EOS (Ota *et al.*, 2010), suggesting greater genetic predisposition and susceptibility in families with histories of EOS and COS. Neurodevelopmental abnormalities are generally accepted

as part of the presentation of schizophrenia, although much of this work has been done on adults using retrospective data (Hata, *et al.*, 2003). Premorbid and prodromal periods show abnormalities in early brain development; eventually these abnormalities lead to failures to attain expected developmental milestones as well as functional decline (Kumra & Schulz, 2008; Ota *et al.*, 2010).

It is also worth noting that some studies are beginning to suggest that these abnormalities may be associated with the long-term side effects of antipsychotics rather than a distinct disease process or genetically caused abnormalities (Whitaker, 2004). Regardless of the cause, abnormalities in white matter, cortical grey matter or structural aberration of the brains have been observed in youths with EOS (Sowell *et al.*, 2000; Burke *et al.*, 2008; Penttilä *et al.*, 2008; Kumra *et al.*, 2009; Tang *et al.*, 2010).

### *Antipsychotic medication and youths with EOS*

There is controversy about the benefits of antipsychotic medication; and findings on subjective experiences would challenge the assumptions of improved cognition, given that most users reporting on a consumer website indicated they experienced sedation and “cognitive and emotional flattening” (Moncreiff *et al.*, 2009, p. 102; Marquis *et al.*, 2011). Indifference, depression, sexual impairment and mental restlessness were reported as the most common impact of the medications (Moncreiff *et al.*, 2009).

Given the impact on possible cognitive functioning of typical and atypical antipsychotics and known patterns of withdrawal and depression as part of prodromal symptoms in EOS, assumptions about overall intellectual functioning and learning disabilities in this population should be considered with caution. However, current research suggests that youths with EOS test below the standardized IQ normative mean, have greater delays in verbal, visual and working memory and display fewer adaptive life skills; although it is difficult to determine if this is due to the disorder or the effects of medications (Asarnow *et al.*, 1994a; Fagerlund *et al.*, 2006; Kester *et al.*, 2006; Walder *et al.*, 2006; Puig *et al.*, 2012). Regardless, cognitive deficits exist across multiple domains, suggesting widespread brain dysfunction in EOS youths (Rhinewine *et al.*, 2005).

### *Long-term outcome for youth with EOS*

Children with early onset schizophrenia confront numerous problems which compromise their familial, academic and social functioning and create wide variances in outcomes as they mature into adulthood (Jarbin *et al.*, 2003; Schothorst *et al.*, 2006; Reichert *et al.*, 2008). Many have histories of other co-morbid psychiatric illnesses, social skills deficits, speech and language delays and motor developmental problems as well as educational failures (Schothorst *et al.*, 2006; Fulton *et al.*, 2008).

Long-term outcomes vary according to the targeted end stage dimension evaluated. One study on psychotic symptomology showed 60% experienced moderate, 20% showed minimal and 17% showed no significant improvement in symptoms over time (Green *et al.*, 1992). Based on global adjustment and psychosocial functioning, another study indicated that 45% showed deteriorating course or minimal improvement, 28% showed moderate improvement and 28% showed good improvement (Asarnow & Tompson, 1999). A 13-year follow-up study conducted

in Germany showed 22% of former patients with EOS still experience acute schizophrenic symptoms at follow-up, and 77% were still in outpatient treatment (Reichert *et al.*, 2008).

### School outcomes of those with EOS

Children with EOS and COS receive services for severe emotional disturbances (SEDs) and are considered eligible for comprehensive programmes under the latest Individuals with Disability Educational Act (IDEA, 2004 Nos. 108-77). Over six million students aged 6 through 21 were receiving special needs services through IDEA, representing 9.1% of school-age children; and, according to the latest available congressional report (U.S. Department of Education, 2008), of those, 7.5% were identified as having emotional problems. Students with EOS and COS as well as other mental health problems often experience multiple school placements unrelated to parental changes in residence. Malmgren and Meisel (2004) noted that children identified as SED had higher rates of school replacements with 72% attending more than one school, even after being placed in special education and, in aggregate, have among the highest dropout rate (44.9%) of all students of ages 14–21 served under IDEA.

In general, children with histories of SED are among the lowest performing special needs students, especially when they have additional comorbid learning and psychiatric conditions (Anderson *et al.*, 2001). On standard tests, adults with schizophrenia often scored well below the 50th percentile in 4th, 8th and 11th grades, and evidenced linear decline in language scores over time in a longitudinal study (Fuller *et al.*, 2002). Interestingly, this study supported Cannon's earlier finding that academic scores at grades 4 and 8 were not below average but dropped significantly between grades 8 and 11, suggestive of emerging cognitive deficits in students with COS and EOS either as part of the disease process, comorbid depression or medication effects (Cannon *et al.*, 1999). In general, children with SED have comprehensive deficits in reading, spelling and arithmetic (Hooper *et al.*, 2010), but those with EOS consistently show poorer academic achievement, lower standardized math and verbal scores, and more disciplinary and social problems (Anderson *et al.*, 2001; Schothorst, *et al.*, 2006).

Finally, problematic school behaviours associated with poor impulse control (such as disruptive behaviours, aggression and disrespectful behaviours) are known symptoms in these populations (COS and EOS) and create adverse consequences, particularly in schools with "zero tolerance" policies for non-compliant behaviours (Malmgren & Meisel, 2004; Algozzine *et al.*, 2008). Many students with COS and EOS struggle with remaining in their seats, avoiding being distracted, processing information, memorizing and taking tests, and, not surprisingly, find school frustrating and depressing and suffer from the severe consequences of multiple suspensions and expulsions (Myles-Worsley *et al.*, 2007).

#### *Services required but not provided*

Between 1995 and 2004 in the USA, the total number of students aged 6 through 21 receiving special educational services increased from 5.1 million to more than 6.1 million in the 50 states and DC. Of those, 7.9% were youths with SED in 2004 with an

estimated annual cost of \$12,639 per student for appropriate additional educational services (U.S. Department of Education, 2003). Clearly, given the high dropout rate, educational needs are not being met for these students. Among contributing factors is that these students often shift into special settings 60% of the day both within school settings and in a variety of specialized day-treatment school and inpatient settings. As demands for services escalate, resources to provide those services become stretched in schools with limited budgets, particularly in light of resistance to higher school taxes in communities struggling to match resources to a wide variety of required services.

Ideally, individual educational plans (IEPs) for this population should incorporate instructional goals coupled with social skills training, but rarely do. Positive pro-social peer interactions are essential in youths with EOS for development of social networks and to counteract experiences of being alone and isolated after hospitalizations or residential treatment, especially given medication side effects (Puig *et al.*, 2012; Remschmidt & Theisen, 2012). In addition, coordinating with ancillary services (occupational, rehabilitative, mental health and health) is implicit in successful outcomes. Many psycho-skills training elements fall under occupational therapy skills, including learning how to have conversations (Lieberman *et al.*, 1998).

### *Case example*

A 14-year-old student had been diagnosed with EOS beginning at age 11 years and had five psychiatric hospitalizations in 3 years. He has a history of poor academic achievement, agitation, fighting with peers and teachers, as well as depression and anxiety. He has few friends and is often the object of bullies who tease and taunt him. In the last week he has been heard arguing with voices and engages in repetitive and ritualized behaviours disruptive to other students. He was suspended for smoking on campus twice in the last month. He refuses his medication because it is “poison”. He tells the school social worker that smoking quiets the voices and then admits in a confidential tone that intergalactic aliens are coming to return him to the galaxy where he was born. His physician wants to hospitalize him, and both the student and parents are resistant. The parents are aware of his “ideas” and report that, every time the doorbell rings, the youth hides in the closet or under the bed. The impoverished parents support their child in refusing hospitalization and medications in part because of the cost.

## **Roles for school social workers with youth with EOS**

### *Interpreting the diagnosis and assessing medication impact*

There is often an assumption that families fully understand their children’s diagnoses and that, with the availability of Internet resources, a great deal of information is accessible to them. However, entering “childhood schizophrenia” into a common search engine results in over 30 pages of links. Often distressed families struggle to understand available materials, much of which is contradictory. School social workers, in the absence of another advocate, can help families decide whether they feel diagnoses are accurate, what they can expect if they are and what the role of medications are in treating the symptoms of delusions and hallucinations. Social workers should be

cognizant of off-label use of antipsychotic medication and the impact of diagnostic labels based solely on types of medication rather than symptom presentation. Stafford (2006) asked whether there should be better federal oversight by the Food and Drug Administration in the USA of the wide use of off-label antipsychotic medications, especially with children, for reasons other than psychotic symptoms (most often for depression and behavioural problems), precisely because of serious side effects and unintended labelling of these children as having psychotic disorders.

In the case study, a school social worker could help by providing some basic information to the family (including useful links that follow frequently asked questions [FAQs]) about the diagnosis. This includes helping them understand symptoms in the context of fluctuating presentation and levels of stress. Management of delusions and hallucinations without conflicts about “reality” is critical because those delusions and hallucinations are both “real” experiences to the youth. There are also simulations that can help the family members understand the experience of auditory hallucinations and why the person often engages in conversations with those hallucinations. This can foster a better understanding of symptoms and their impact on behaviours.

School social workers can encourage youth and their caregivers to keep medication logs to track ancillary information about adherence and non-adherence against symptom presentation and side effects and to serve as potentially powerful tools for youth and caregivers to use when consulting with prescribers about possible nuanced medication regimens. More critically, if all medications are listed, including herbal and other over-the-counter medications along with those prescribed by medical professionals, negative side effects and toxic drug interactions can be identified early to prevent potential life-threatening consequences. As part of casework services, school social workers can encourage families to work with trusted pharmacists or health care providers to balance the need for medication against potential side effects that can lead to fatalities because of cardiovascular, pulmonary, neurological, endocrine and gastrointestinal complications (Spencer *et al.*, 1992; Hrdlicka & Dudova, 2007; Kumra *et al.*, 2008; Haas *et al.*, 2009; Kryzhanovskaya *et al.*, 2009; Robb *et al.*, 2010; Levine & Ruha 2012). It is worth noting that Whitaker (2004) and others (Spina *et al.*, 2002) have expressed concerns about the toxicity of antipsychotics, and Whitaker, in particular, is advocating for the use of less or no medications at the same time as families often report that physicians and other health care professionals tend to add additional medications in attempts to manage thought and behavioural problems (The Medicated Child, Introduction, 2009).

### *School social worker strategies*

School social workers often are the point persons coordinating services for children with EOS within school systems and bear responsibilities for tracking down resources, evaluating outcomes and providing feedback for stakeholders working with children with early onset schizophrenia. There is very little in the empirical literature to support alternative approaches to treating EOS, although youths, like their adult counterparts, seek alternatives to medication approaches. School social workers would benefit from exploring with youths with EOS and their caregivers what alternative approaches they have researched on the Internet including animal-assisted therapy, music therapy, Chinese herbal therapies and so on. A frank and non-judgmental discussion about these



approaches with the youth and their caregivers as alternatives to medications or reduced levels of medication could reduce the potential for covert alternative treatments and might be incorporated into the IEP (Complementary Schizophrenia Treatments, n.d.). Consideration of cognitive-behavioural approaches to manage symptoms, using music and other auditory approaches to block intrusive voice commands and commentaries, may be more effective than increased levels of medication or traditional disciplinary actions (such as suspensions) in reducing behaviour problems associated with delusions and hallucinations. Some families have also tried possible dietary adjustments or vitamins and supplements to manage symptoms that may also help students adjust better to classroom settings.

### *Helping to manage financial and the social services*

There are enormous financial, social, emotional and physical stressors on family members adjusting to a diagnosis of schizophrenia, including learning how to manage the symptoms of the disorder at home and in school and social settings, particularly in the USA where insurance coverage can be problematic and subject to significant limitations, exclusions and discontinuances. School social workers can reduce some of the initial stress by providing contact information on possible community-based resources. While ideally the coordination of resources should be part of the initial diagnosis and certainly part of hospital discharge planning, not all children with EOS are hospitalized and not all mental health clinics provide families with supportive services. These support systems particularly help caregivers navigate the frustration of completing the paperwork needed to obtain services through various educational, medical and mental health systems.

Linking caregivers to support networks also often provides information about strategies for successfully processing insurance claims and possible appeals on denial of services. Peers in these networks frequently can direct families to legal resources which they might need in appeals processes. They can provide guidance about how best to complete applications for disability benefits, determining rights to family leave, assessing the merits of local service delivery systems and resources, and developing plans for respite services. Many of them are knowledgeable about medication issues and locating prescription providers within insurance plans and networks. In the case example, this might diminish some of the family's financial concerns regarding the cost of medication and the challenges in hospitalization.

School social workers are often relied upon to find creative ways to help family members function optimally at home and school. Helping the family in the case example learn to de-escalate symptom exacerbation may also reduce the need for hospitalization by helping stabilize behaviours and may also reduce the need for higher levels of medications. In addition, social workers can connect the family to local mental health support groups. These support groups can work with the family to tailor strategies to manage symptoms as well as provide venues for recreation and socialization. Increased socialization may diminish isolation – especially if it also connects the family to a supportive network able to provide respite services.

Because of the rarity of the diagnosis, it is important for the social worker to develop an FAQ for the teachers and aides to help them understand what EOS is and is not, what impact the diagnosis might have on processing curricular content, what medications the

youth is on and the impact of medications on learning, what the signs are of decompensation and escalation of psychotic symptoms and possible early interventions which might delimit it. It is critical that teachers and aides learn to differentiate behaviours associated with the disorder from other age appropriate or inappropriate acting out when making disciplinary decisions (Malmgren & Meisel, 2004; Algozzine *et al.*, 2008).

In the case example, the social worker could locate practitioners who use cognitive-behavioural techniques with people with schizophrenia as an enhancement to or alternative to medications to promote better reality testing and to help regulate behaviours that contribute to being taunted and bullied. With open communication lines, the social worker could coordinate treatment strategies with family members, teachers and aides who focus on reduction of reactivity to voices – a source of ongoing classroom problems (see Christodoulides *et al.*, 2008).

### *Managing hospitalizations*

Sudden inpatient hospitalizations can occur to manage acute exacerbation of psychotic symptoms (Kumra & Schulz, 2008). The school social worker can work with teachers to coordinate educational resources and assignments as appropriate during the hospitalization. The social worker should coordinate the transfer of relevant information between systems both during the hospitalization and during discharge planning. Managing return to school following hospital discharge or other therapeutic placements should include ensuring treatment, and medication protocols are incorporated into the development of an IEP or amended IEP as part of transitional services between the therapeutic setting and the school. It is a role that may well fall to the school social worker. When the youth is ready to return to school, the school social worker can provide supportive assistance with integration back into the routine of school.

### *Involvement in the individualized educational plan*

School social workers have a central role in ensuring that IEP's incorporate family input and that needed services are identified, especially at the point of re-entry to school. This is especially important since IEP teams may become quite formulaic about the components of plans based on more commonly seen learning disabilities. Because of the complexity of EOS, the IEP should have feedback loops and tracking mechanisms across multiple providers (caregivers, youth, teachers, school nurses, outpatient and psychiatric services, occupational and rehabilitation therapists, mental health providers, etc.) so that plans are comprehensive enough to ensure delivery of needed primary and ancillary services. Furthermore, these plans should include schematics about how team members communicate with each other and who is key worker for which elements in the plan (medication, symptom management, de-escalation of symptoms, etc.). This is an effective mechanism to identify problems early, develop solutions across appropriate systems and monitor outcomes against IEP goals, suggesting changes as indicated. This becomes especially critical when there are changes in school placement either because of reassignments within school systems, hospital admissions or transfer to residential placements so that there is continuity of services.

In the case example, the IEP should address the use of tobacco to manage psychotic symptoms, both because it is illegal and because it violates school rules resulting in

disciplinary actions. Including cognitive-behavioural mindfulness techniques may delimit some of the anxiety and depressive symptoms, thereby reducing psychotic symptoms. These techniques are especially useful as a healthy alternative to tobacco when they are adapted to youths with EOS who smoke (Cown & Reibel, 2010). Involving the youths in how these techniques can be implemented during the school day and at home may be one way to encourage compliance with mindfulness techniques.

School social workers can work with youths about how much information to share with peers and how to manage bullying and other negative peer encounters. Many youths who are diagnosed with EOS find that acute exacerbation of symptoms compounds their problems, especially in the context of side effects of medications and delusional and psychotic symptoms. To address these issues, some school social workers develop peer support groups, if possible, for youths with SEDs. Depending on the size of the student body, however, these groups may focus either on supports for students with disabilities, students with recent psychiatric hospitalizations or more generalized social skills groups which provide coaching on appropriate and positive peer interactions.

School social workers should help school personnel consider possible responses to acting out associated with psychotic symptoms that differ from customary disciplinary responses (suspensions and expulsions) in order to adopt more appropriate and reasonable accommodations (Francis *et al.*, 2012). School social workers can provide teachers, staff and administrators with sufficient knowledge about techniques to de-escalate psychotic reactivity, especially those that re-enforce reality testing and self-calming behaviours.

## Conclusion

Youths with EOS are a rare population. School social workers may never encounter a student diagnosed with EOS during their career, and face the challenge of finding experienced school social worker peers as a mentor and resource. This suggests the importance of professional learning networks (PLNs) in general but especially when working with a very complex and difficult problems, such as rare conditions such as EOS, that require complex and well-coordinated case plans. Access to PLNs, many of which are now web based, can provide both knowledge and strategies that may not be regionally available to an individual social worker. These PLNs are often transdisciplinary with professionals working in a variety of fields, including education, mental health, medicine, occupational and rehabilitation therapy, and in communities. There are a variety of means of access to them, from connecting through national organizations such as the National Alliance for Mental Illness, contacting practitioners who have made podcasts or given presentations, to joining Twitter® discussions or following blogs. These resources often provide access to webinars and conferences where a social worker can directly discuss the issues with more experienced practitioners and find creative solutions. This can lead to enhanced e-learning partnerships. Many digital resources are tailored to schizophrenia and are followed by professionals who work with this population and can serve as invaluable resources to school social workers and families. Finally, contacting authors of papers that the practitioner has found invaluable may lead to a mentor or an expanded network of other practitioners with more experience.

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**Dr Ya-Ling Chen**, Social Work, Chaoyang University of Technology, 168, Jifeng E. Rd., Wufeng District, Taichung 413, Taiwan. [email: [yalin813053@gmail.com](mailto:yalin813053@gmail.com)]

**Dr Barbara Rittner**, Social Work, University at Buffalo, 670 Baldy Hall, Buffalo, Buffalo, NY 14260, USA. [email: [rittner@buffalo.edu](mailto:rittner@buffalo.edu)]

**Dr Amy Manning**, Buffalo Center for Social Research, 219 Parker Hall, 3435 Main Street, Buffalo, NY 14214 USA. [email: [amymanning2002@yahoo.com](mailto:amymanning2002@yahoo.com)]

**Dr Rebekah Crofford**, PhD, Social Work, Roberts Wesleyan College, 2301 Westside Dr, Rochester, 14624 NY, USA. [email: [crofford\\_rebekah@roberts.edu](mailto:crofford_rebekah@roberts.edu)]

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