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ORIGINAL ARTICLE

Review of Teenlink: A health service for children and adolescents of parents with substance use

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Aim: To evaluate Teenlink, a wide-ranging medical and psychological health service addressing the needs of children and adolescents in substance-using families, who are at increased risk of developmental and psychosocial problems.

Methods: Retrospective record review of 124 children, from 92 families seen over a 13 year period.

Results: Polysubstance use and mental illness were common amongst parents. Children often presented with emotional and behavioural problems. Teenlink provided parenting skills, individual and family work, medical care, case management, advocacy, collaboration and education with adult drug and alcohol services.

Conclusions: The chronic and complex nature of parental addiction, need for ongoing support and tailored service utilisation, reflected the length of engagement.

Key words: addiction; adolescent; child; development; substance use.

What is already known on this topic

1 Genetic and environmental factors interact to contribute to the intergenerational transmission of substance use disorders.
2 Substance abuse significantly impacts on an individual's capacity to parent.
3 Integrated programmes, combining parental substance abuse treatment with family or child-based interventions, can have a positive effect on both parenting and child emotional and behavioural outcomes.

What this paper adds

1 Description of a unique health service for children and adolescents affected by parental drug and alcohol use.
2 Children, adolescents and parents had high rates of mental illness, traumatic stress and behavioural problems.
3 Ongoing individual, family therapy, medical and case management formed the mainstay of treatment.

Children and adolescents of substance-using parents are at increased risk of developing internalising and externalising problems,[1,2] initiating alcohol[3] and other drugs at an earlier age, and developing substance dependence later in life.[4]

Both genetic and environmental factors interact to contribute to the intergenerational transmission of substance use disorders.[5,6] Evidence from longitudinal twin studies suggests that disruptive behaviours (i.e. conduct disorder, oppositional defiant disorder, attention-deficit hyperactivity disorder (ADHD), impulsivity etc.) share a common genetic link with substance use and may increase the risk of substance abuse and dependence.[7] *In utero* exposure to alcohol and other drugs (AOD) has a significant impact on child development,[8] resulting in impaired physical growth,[9] attention and learning difficulties[10] and emotional and behavioural problems.[11]

Substance abuse significantly impacts on an individual's capacity to parent. Lack of positive parenting practices associated with parental substance use limits opportunity for developmental stimulation, child bonding and emotional responsiveness.[12] These children are more likely to grow up in unstable home environments characterised by domestic violence, abuse, neglect and abandonment.[13–15] High rates of comorbid maternal psychopathology may further contribute to a reduced capacity to provide a safe and nurturing environment for one's child.[16] Parental modelling of ineffective coping strategies influence the way in which young people react to internal and external stressors; they may learn to self-medicate with AOD.[17] While adolescence is a period of drug experimentation, those exposed to parental substance use disorders are at an even higher risk of drug use themselves.[4]

Not all young people of substance abusing parents will become substance dependent themselves, nor will they all be adversely affected by mental health problems. Several protective factors have been identified which serve to minimise the potential negative impact of parental substance abuse and build resilience

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within the child or adolescent. These include positive family attachment, bonding and greater parental involvement and communication.[18,19]

As a high-risk group, children and adolescents of substance abusing parents are a worthy target for prevention and intervention efforts. Evidence suggests that integrated programmes, combining parental substance abuse treatment with family or child-based interventions, can have a positive effect on both parenting and child emotional and behavioural outcomes.[20–22] The majority of published interventions targeting substance abusing mothers and their children target very young children (infants) with a primary focus on parenting programmes, rather than direct intervention for the young person.[21] Conversely, programmes targeting older children and adolescents tend to be primarily school-based and/or include little involvement from parents.[20] With the services currently available, the question remains whether the child's needs are being met in addition to the family's needs.

Development of the Teenlink service

The aforementioned need prompted the inclusion of a new collaborative project (Teenlink) between the then Western Sydney Area Health Service Drug and Alcohol Department and The Children's Hospital at Westmead, a tertiary referral public teaching hospital. The project was one of several modules developed to enhance the overall health care of parents seeking treatment for substance use disorders. The Teenlink service was founded in 2001. Initially, it serviced adolescents aged 12–16 years whose parents were enrolled in the Methadone Program. Over time and due to clinical demand, Teenlink expanded to include children and young people aged 8–18 years with any parental substance use. Children younger than 8 years were seen by the Healthy Children's Program, established at the same time.

Teenlink originally operated out of a Methadone clinic and other adult drug and alcohol services. The aim was to directly and opportunistically engage the target population and referring practitioners. Several engagement and profile building strategies were undertaken such as coffee mornings, 'drop-in' and outreach clinics, youth promotion days, in-services and staff training. Youth group programmes including Life and Social Skills and Cognitive Behavioural programmes were poorly attended compared with individual or family consultations. The programme evolved over time with expansion of intake criteria and age range. Originally only children of parents enrolled in the Methadone Program and currently any parental drug and alcohol use history. Initially, the age range for intake was 12–16 years, which was expanded to 8–16 years. Subsequent to this data collection, the age range was further expanded to 0–18 years. Teenlink is currently based at a tertiary Children's Hospital, with outreach services continuing.

Teenlink is staffed by a Psychologist and an Adolescent Physician/Paediatrician, focused on building a young person's resilience, coping strategies and strengths. Comorbidities, such as anxiety, depression, aggression, ADHD and complex trauma are assessed for and treated in-house or referred to other subspecialty teams as indicated. General medical, developmental and psychological assessment and care are offered, along with school-based interventions and case management. A core component of Teenlink is family therapy, positive parenting and case co-ordination between agencies. The service also supports workers in the drug and alcohol field, provides education sessions and advocacy for clients.

No other programme in Australia has previously addressed this health issue in this target group. With this in mind, this study aims to describe the clientele and service utilisation over the initial 13 years of the Teenlink program.

Table 1 Child demographic and clinical information

	n	%
Gender (females)	60	48.39
Attending school at referral	116	93.55
In paid employment at referral	4	3.23
Documented forensic history	6	4.84
Substance use (adolescent)	28	11.76
Current Juvenile Justice involvement	3	2.42
Mental health diagnosis	96	77.42
Parental psychiatric history	118	62.43†
Parent(s) in paid employment	38	20.11

†Based on total number of parents (n = 189) not total number of participants.

Methods

A retrospective chart review was conducted of children and young people attending Teenlink on at least one occasion from April 2001 (inception) to December 2014. Data collected included referral characteristics, demographic information, child, parental and intergenerational substance use, comorbidities at referral, treatment duration, occasions of service (OOS), care providers involved and types of treatment provided by Teenlink. Simple descriptive statistics were conducted. Median and interquartile range (IQR) were calculated for continuous variables (i.e. age at referral, treatment duration and OOS) in response to the skewed distribution of the data.

Results

A total of 238 children were referred to Teenlink over the 14-year period, of which 124 children, from 92 families, were seen. Reasons for children not being seen included: non-attendance (n = 33, 28.95%), inability to be contacted (n = 18, 15.79%), parent seen as 'drop-in' only (n = 22, 19.30%), referred to another service (n = 16, 14.04%), declined service (n = 14, 12.28%), already being seen by another service (n = 9, 7.89%) or missing information (n = 2, 1.75%). Of the 124 children, the main referral pathway was via an AOD counsellor (n = 45, 36.29%), then self-referral (n = 21, 16.94%), followed by other departments within the hospital (n = 14, 11.29%), Drug Court/Magistrates Early Intervention Treatment (n = 11, 8.87%), Westmead Hospital Drug and Alcohol Consult Liaison (n = 8, 6.45%), private methadone prescriber (n = 9, 7.26%), paediatrician (n = 4, 3.23%) and other (n = 12, 9.68%).

A summary of the demographic and clinical characteristics of the children that attended Teenlink is shown in Table 1. Children

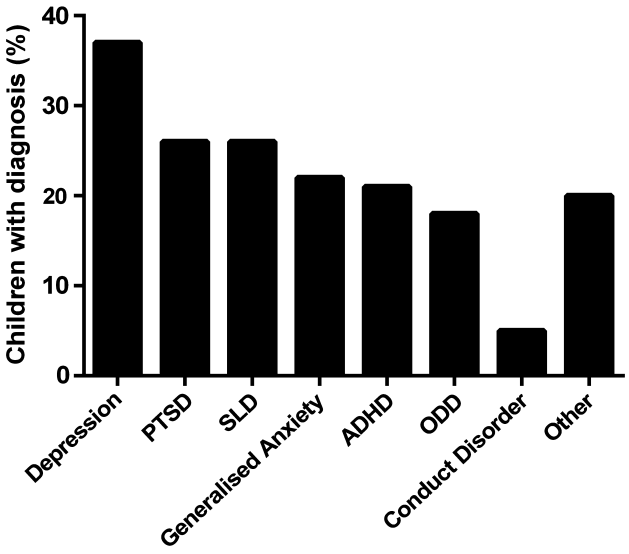

Fig. 1 Proportion (%) of children presenting with DSM-IV-TR diagnosis. ADHD, attention-deficit hyperactivity disorder; ODD, oppositional defiant disorder; PTSD, post-traumatic stress disorder; SLD, specific learning disorder.

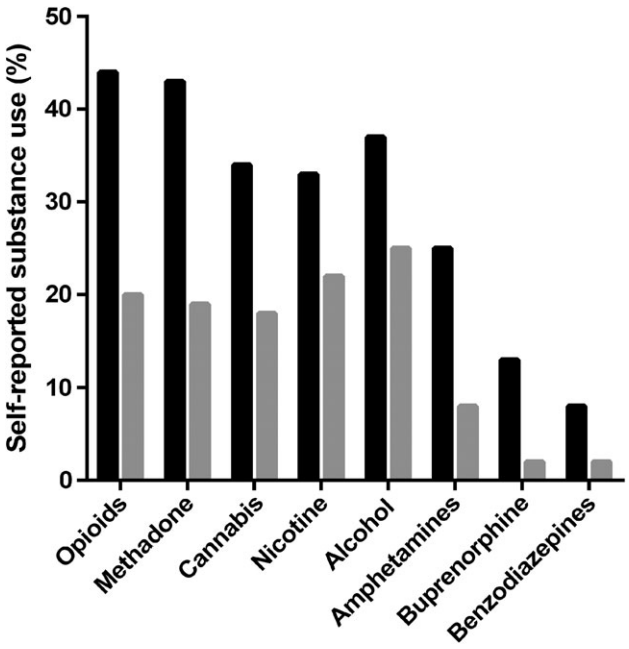

Fig. 2 Proportion (%) of self-reported parental substance use. (■), Maternal; (■), paternal.

referred ranged in age from 5 to 19 years (median = 11.50 years, IQR = 4.00), with a roughly equal proportion of boys to girls. The majority of children were attending school within the public (n = 97, 78.2%), special (n = 14, 11.29%) or private education systems (n = 5, 4.03%), leaving 6% (n = 8, 6.45%) of children who were not attending at all. A small number of children were in paid employment (n = 4, 3.23%). Substance use was reported

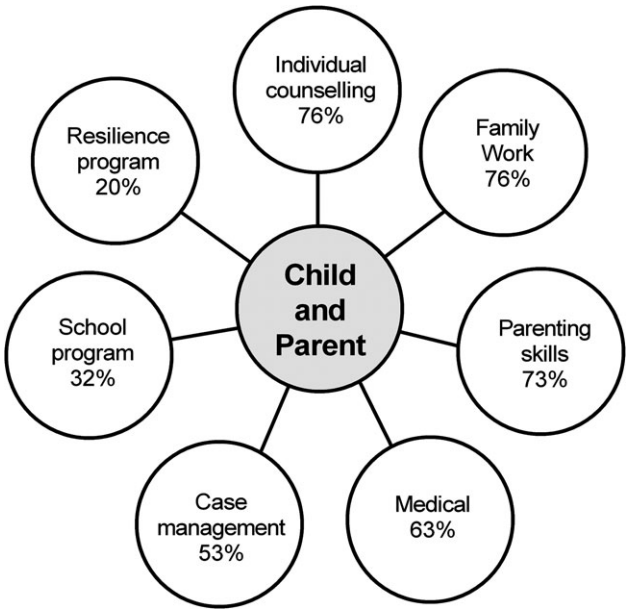

Fig. 3 Interventions provided to Teenlink clients.

by 11.76% (n = 28) of young people including nicotine. Forensic histories were reported in 5% (n = 6) of young people for crimes such as violence and theft, and 2% (n = 3) were involved with the Juvenile Justice system whilst engaged with Teenlink. Mental health conditions were common and reported in 77% of children: 21% of children presented with more than one comorbidity. As shown in Figure 1, depression was the most frequently reported diagnosis in almost 30% of children, followed by post-traumatic stress disorder (PTSD) and specific learning disorders in approximately 20% of children each. Anxiety and behavioural disorders were also reported.

Children of 92 families attended Teenlink, who had 93 biological mothers and 96 biological fathers (blended families accounted for the variance between number of families attending the service and number of biological parents). There were 89.25% (n = 83) of mothers and 57.29% (n = 55) of fathers that had a reported history of substance abuse. Maternal and paternal substance uses are outlined in Figure 2. The length of AOD treatment for mothers ranged from 1 month to 22 years and half of mothers were in treatment for five or more years. Family psychiatric history was reported in 39% of mothers, 17% of fathers and 4% of siblings.

Only 19.35% (n = 18) of mothers and 20.83% (n = 20) of fathers were employed and 3.70% of parents (n = 7) were deceased. The majority of children were in full-time contact with their mothers (n = 82, 66.13%) and the remainder were either in part-time contact (n = 36, 29.03%) had no contact with their mother (n = 6, 4.84%). Fewer children were in full-time contact with their fathers (n = 40, 32.26%), while most children were in part-time contact (n = 48, 38.71%) or had no contact at all (n = 36, 29.03%). The majority of children were in the care of their birth parents (n = 102, 82.26%). The remaining children were cared for by their grandparents (n = 17, 13.71%) and foster carers (n = 5, 4.03%).

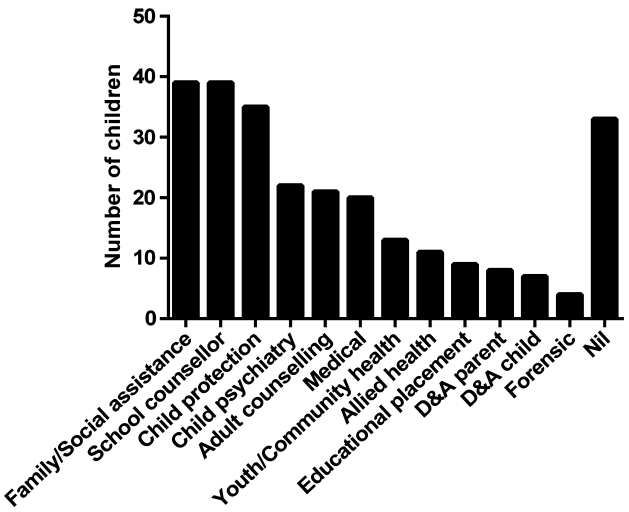

Fig. 4 Number of children referred to external services.

Children attended treatment with Teenlink for an average of 8 months (median = 8.00, IQR = 20.00, range = 0.3–98), with just over half (56.56%) of the children attending for more than 6 months. OOS ranged from 1 to 224 sessions (median = 9.00, IQR = 18.00). Services provided by Teenlink (Fig. 3) included parenting skills (n = 91, 73.39%), family work (n = 94, 75.80%), medical intervention (n = 78, 62.90%), individual counselling (n = 94, 75.81%), case management (n = 66, 53.23%), school-based outreach counselling (n = 39, 31.45%) and a resilience programme (n = 25, 20.16%).

Fifty-nine percent of children had no other service involvement at the time of referral. Almost three-quarters (n = 91, 73.38%) of the children were referred to other support services during (or at the conclusion) of their treatment with Teenlink. As shown in Figure 4, over one-third of children were referred to family/social assistance services, their school counsellor and child protection services. Children were also referred to other health professionals, including ear, nose and throat surgeons, dentists, dermatologists, neurologists and pulmonologists, drug and alcohol specialists and forensic services.

Case study

Sam is a 13-year-old girl who is refusing to attend school. She was referred to Teenlink by the local drug and alcohol service by her mother Belinda. Belinda was concerned that Sam was becoming increasingly withdrawn, had worsening school performance and queried substance use. Sam's parents separated shortly after her birth due to domestic violence and she lives with her grandmother in government-provided housing. Sam has irregular contact with her mother, who is receiving opioid substitution (methadone) therapy for prior heroin use. Sam's father is in custody and has a history of alcohol and cannabis dependence. Sam has a younger stepbrother Brodie aged eight, whose behaviour is becoming disruptive possibly leading to a change of schools in the near future.

Sam attended Teenlink initially on a fortnightly basis in the company of her mother, grandmother, brother and then alone for the next 3 years. She was diagnosed with anxiety and managed with psychotherapy and medication. Sam completed an adolescent resilience programme, with some sessions conducted at her school. Her school assisted with remediation and in completing her educational requirements. Sam was also aided in applying for part-time work and later with entry into a technical college course. Sam also had general medical issues of nutrition, menstruation and eczema addressed, with referrals made to allergy and gynaecology clinics. Sam's mother was offered family and individual counselling, as well as sessions on positive parenting practice. She was assisted with welfare benefits and housing accommodation. Sam's stepbrother, Brodie, was diagnosed with and received treatment for ADHD. He completed an anger management course and issues of schoolyard bullying were addressed. Brodie later went to live with his father (Sam's stepfather) interstate and disengaged from the service.

(*Please note that the above scenario is a synthesis of case presentations based on typical referrals to Teenlink and does not identify any particular individual or family*).

Discussion

Families accessing the Teenlink service have specific needs that require a unique approach to care. Families are under chronic stress and require intensive health and social support. Complex familial circumstances necessitate specialised service provider support and understanding. Almost two-thirds of parents had a history of a psychiatric condition. Given that 20% of parents were employed many of the remaining families were likely recipients of social assistance and government-provided housing. Half of mothers were in a drug treatment programme for 5 years or more. This reflects the chronicity of the problems these families encounter. The lower substance use rate recorded for fathers was likely related to who had care of the children at the time of referral. Fathers may be missing from the family through separation, incarceration, death or loss to follow up and often did not present to our service. Polysubstance use is common amongst Teenlink parents. Almost half had a history of opioid and alcohol use and approximately one-third reported using cannabis, nicotine and amphetamines. A history of AOD use impacts not only on the child's overall development but also on parenting ability and family function. Our study data highlights the challenges facing such families and the need for an integrated service. Owing to more inclusive Teenlink intake criteria changes over time, trends in parental substance use rates and resultant effects on child morbidity cannot be ascribed. This would be a worthwhile endeavour for future research.

Emotional and behavioural problems were common amongst Teenlink youth, with over three-quarters of children presenting to the service with a mental health diagnosis. This emphasises the need for ready access to mental health services. Depression rates were particularly high at nine times than that of the general population.[23] This is consistent with literature reports of children of parents with substance misuse being at high risk of developing internalising problems.[11] PTSD was also common at four times the rate of the general population.[23] ADHD and oppositional defiant disorder prevalence were double and triple that of the general population, respectively. In contrast, rates of

generalised anxiety disorder and conduct disorder were similar to population estimates. It is possible that PTSD and depression diagnoses may have taken precedence over generalised anxiety disorder. Low conduct disorder prevalence may be due to the younger age at which children enter the Teenlink service and an effective preventative treatment approach. Less than 5% of Teenlink children had a forensic history, though this is still double the expected rate.[23] The mental health needs of these children are considerable so resources targeting this population are justified.

Ninety-four percent of children regularly attended school. This high rate may be attributed to Australian Department of Education regulations or the school setting representing a stable environment in the child's life. One-quarter had a specific learning disorder (double societal incidence). Many factors could play a role in this such as *in utero* exposure to substances,[10] lack of a stable home environment and/or school discontinuity[13–15] and other environmental influences such as parenting, poverty and genetics.

Substance use in Teenlink children was no greater than peer prevalence.[23] Caution should be exercised in extrapolating this information to other populations, such as 'all' children of drug users. Considering the average age of children referred to Teenlink was 11 years, before substance use debut is likely to occur, low substance use rates are to be expected. Teenlink may also play a role in preventing the onset of substance use though this was not an objective of this study.

Ongoing individual, family therapy, medical and case management formed the mainstay of treatment. This included evidence-based psychotherapy, parenting education and formal resilience building programmes for the young person. Sessions were predominantly conducted in a hospital outpatient clinic, though also at school, as most of the children seen by Teenlink were attending regularly. This permitted more regular engagement, principally in those families who found it difficult to present to the clinic.

Clients usually remained engaged with the Teenlink service for a period of 8 months. Owing to the chronic and complex nature of parental addiction, the length of involvement with the Teenlink service was reflective of the need for ongoing support and tailored intervention. Unintegrated short-term parenting or youth programmes are unlikely to meet the multifaceted needs of families affected by substance use.

Case management involved many aspects of child and family care. School liaison was often required to assess learning needs and support educational and counselling intervention or suitable placement. Contact with child protection agencies, welfare organisations, government housing, juvenile justice and other service providers was commonplace.

Sixty-three percent of young people had a medical concern at presentation, endorsing the need for a paediatrician to be a member of the treating team. One-fifth required referrals to other medical specialists indicating a degree of medical complexity in this client group.

Over half of young people were not linked with any services at referral. Teenlink engaged multiple external service agencies in three-quarters of cases. Child protection issues were a significant concern, as was nutrition and medical neglect. Domestic violence was reported in one in six families, although this may be an underrepresentation as indicated by the literature.[13–15] Child protection referral rates were lower in the Teenlink population than expected, possibly due to the preventative nature of the service, which may have reduced the need for such referrals.

Conclusion

Teenlink is a holistic, family-focussed primary, secondary and tertiary health service for children and adolescents in substance-using families. Its dual health professional-led *modus operandi* extensively manages the psychological and medical needs of these families, who are often under-resourced and functioning poorly.

Teenlink provides a unique service building resilience, delivering positive parenting capabilities, individual and family counselling, comprehensive medical care, case co-ordination, social assistance advocacy and school liaison. Teenlink works in close collaboration with local drug and alcohol services and other youth-focused organisations and children's services to achieve these goals.

Our findings indicate the complex, high-risk and multifaceted needs of families affected by substance use and the necessity for ongoing support of multidisciplinary services such as Teenlink.

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