

QUT Digital Repository:
<http://eprints.qut.edu.au/>



This is the author's version published as:

Callaghan, Tamara, Crimmins, Jennifer, & Schweitzer, Robert D.
(2010) *Children of substance-using mothers : child health engagement and child protection outcomes*. Journal of Paediatrics and Child Health.

Copyright 2010 Paediatrics and Child Health Division
(Royal Australasian College of Physicians)

Children of substance using mothers: Child health engagement and child protection outcomes.

Original Article

Tamara Callaghan, Child and Youth Mental Health Service, Royal Children's Hospital and Health Service District, Brisbane

Jennifer Crimmins, Child Advocacy Service, Royal Children's Hospital and Health Service District, Brisbane

Robert D. Schweitzer, School of Psychology and Counselling Queensland University of Technology, Brisbane

Correspondence:

Tamara Callaghan, Psychologist,
Child and Family Therapy Unit,
Royal Children's Hospital, HERSTON
Fax: 3146 2314,
Email: Tamara_Callaghan@health.qld.gov.au

Aim

Maternal substance use has been associated with a range of child risk factors. The study investigated the relationship between engagement with child health services and child protection outcomes for children of substance using mothers.

Methods

A sample of 119 children of mothers who disclosed opiate, amphetamine or methadone use during a maternity admission between 2000 and 2003, as included in a previous matched co-hort study¹, were included in the current study. Statutory child protection agency and child health engagement information for the first two years of life, was obtained. The relationship between type of maternal substance use, child health engagement and child protection outcomes was examined.

Results

Seventy two percent of study group infants were engaged with child health services during the first two years of life. Chi square analysis showed no significant relationship between child health engagement and child protection reports. Child health engagement was associated with decreased substantiated child protection notifications for children of methadone using mothers, but not for children of illicit substance users.

Conclusions

Almost a quarter of identified children of substance using mothers are not accessing standard child health services in their first two years of life. This study provides support for increased attention to the provision of child health services for children of methadone using mothers. Further research into effective intervention strategies for children of illicit substance using mothers is indicated.

Key Words

Child Abuse, Substance Abuse, Mothers, Infant, Health.

Children of substance using mothers: Child health engagement and child protection outcomes.

Key Points

Almost a quarter of identified children of substance using mothers are not accessing standard child health services in their first two years of life.

Engagement with child health services is related to decreased substantiated child protection notifications for children of methadone using mothers.

Further research into effective intervention strategies for children of illicit substance using mothers is indicated.

In what is likely to be an underestimate, 1.3% of women presenting for delivery in Australian hospitals report some form of dependency or substantial exposure to illicit substances². Maternal substance use has been shown to be a significant risk factor that predisposes children to maltreatment^{3,4}. The complex interplay between maternal substance use and parenting practices, maternal psychopathology, social environment and socio-economic factors, predispose children of substance using mothers to an enhanced risk of maltreatment⁵. The chronic and relapsing nature of substance use⁶ and its prevalence within Australian society² means that children of substance using mothers are at elevated and long term child protection risk.

Children of substance using mothers have been found to be twelve times

more likely than children of non-substance using mothers to be the subject of a substantiated child protection report and reported at a very early age ¹. Base rates in the Australian population indicate that approximately 14 children in every 1000 are subject to some form of substantiated child maltreatment ⁷.

Maternal substance use has been associated with a range of detrimental outcomes and adverse psycho-social circumstances for the child. Detrimental outcomes include: premature birth, low birth weight and admission to neonatal intensive or special care units ⁸. Children who present with a difficult temperament including being demanding and slow ^{9, 10} are likely to be less responsive to parental engagement. These uncommon social responses may challenge the mother's capacity to be attentive and responsive to the child ¹¹. Furthermore, due to the significant cost of illicit substance use substance using mothers may struggle to meet financial demands which in turn impacts on the mothers capacity to access appropriate health services.

Environmental and social factors can exacerbate or ameliorate the risk associated with maternal substance use. Regular and frequent parental support and education, as well as medical and developmental reviews for the infant, have been found to be vital in ensuring a positive parent-child relationship, and optimal physical and emotional development ¹⁴. Despite the contextual stressors associated with substance use, maternal desire to provide appropriate nurturing for their offspring may serve as a protective factor in substance using families ^{13 14}.

No substantial quantitative research exists on child health service utilisation in the population of children of substance using mothers in Australia. Furthermore,

the benefits associated with early intervention and support have not yet been quantified in the substance using population. Due to the long-term detrimental outcomes for children of substance using mothers it is critical that current services are evaluated and protective factors and effective interventions are identified. Moreover, given that children of illicit substance using mothers are at greatly increased risk of child maltreatment, over and above the risk identified for children of methadone using mothers¹ there is a need for the investigation into the service utilisation of children of substance using mothers and child protection outcomes. Research into the relationship between maternal substance use and child health engagement has the potential to inform strategies to promote engagement of substance using mothers with health services to ameliorate child protection risk.

This study is the second component of a program of research aimed at investigating the impact of maternal substance use on child outcomes. The first component of the research program developed by McGlade, Ware and Crawford (2009) investigated the impact of maternal substance use on child protection outcomes¹. This study investigates the relationships between maternal substance use, engagement with child health services and child protection outcomes. The study focused firstly on whether children of substance using mothers are engaging with child health services and secondly, whether engagement is associated with reports to child protection services. In addition, the study aimed to explore the relationship between type of substance use and propensity to engage with child health services. Finally, the study focused on investigating the relationship between substance type, service utilisation and child protection outcomes.

Methods

Design and Participants

The current study is an archival review of data relating to participants who were identified through maternity admissions to the Royal Brisbane Women's Hospital, Queensland between January 2000 and December 2003 as part of a larger matched cohort study¹. Ethical approval for the broad enquiry and data collection was obtained through the Human Research Ethics Committee of the Royal Children's Hospital, Brisbane, and the Royal Brisbane Women's Hospital (Ref No. SB023336). Ethical approval for this review was obtained under the provisions of archival studies through the Queensland University of Technology (Ref No. 0700000842). The data set comprised information on one hundred and nineteen mothers who self identified as methadone, amphetamine or opiate users and their infants. No information was obtained on other drug use, engagement with a methadone program or substance use rates. Outcome data were collected at the commencement of the program of research by McGlade et al¹. An additional dataset capturing two year follow-up of child protection and child health data of the original participants was collected.

Outcome Data

Child protection data

Infant details were linked to the state statutory Child Protection Information System database. The type of harm, including emotional, sexual, physical or neglect, was recorded, as was age at notification and whether the notification was substantiated,

recorded as substantiated harm or substantiated at risk of harm. Child protection data for all infants was reviewed for the first two years of life.

Child health data

Infant details were linked to child health data for all study infants. 'Child health engagement' refers to any involvement with a child health service. The child health service in this study provides home visiting for families with complex needs and all first time parents and short consultations in child health clinics. Services are provided by a multi-disciplinary team. Child health data for all infants was reviewed for the first two years of life.

Statistical Analysis

Statistical analyses were conducted with the sample group of 119 substance using mothers. Substance use data were analysed using a methadone only group (53; 45%) and an illicit substance using group (66; 55%), including the heroin, opiate and amphetamine users. Chi square analyses were conducted to investigate the relationships between study group variables using the statistical package SPSS ¹⁵.

Results

Fifty-five (46%) of the study group infants were males. Twenty-three (19.3%) of the children in the sample were born prematurely. Mothers had a mean age of 28 years (SD = 5.38), and the mean birth weight of children was 2943.51 grams (SD = 614.70). In comparing the methadone (N = 53) and the illicit substance using group (N=66) there were no significant differences in maternal age, birth weight or

gender. Fifty-three (45%) mothers reported using methadone only, 19 (16%) reported using heroin and other opiates, 38 (32%) reported using amphetamines only and 9 (8%) reported using opiates and amphetamines. Fifteen percent of the methadone only group had a gestational age of under 37 weeks, while 23% of the illicit substance using group had a gestational age of under 37 weeks.

Child health engagement

Thirty four (28.6%) children in the study catchment area did not become engaged with child health services at any stage during the first two years of life. The mean number of child health engagements (including home visits) for the sample population was 4.97 (SD = 7.68). The mean number of home visits was 3.11 (SD = 5.14).

Substance use and child health engagement

Type of substance use and engagement with child health were not found to be significantly related, Pearsons $\chi^2(1, N = 119) = .22, NS$. Seventy-four percent of infants of methadone using mothers and 70% of children of illicit substance using mothers were engaged with child health services.

Child health engagement and child protection information

The number of child protection reports for individuals engaged with child health services was not significantly different from the number of child protection reports for individuals not engaged with child health services; Pearsons $\chi^2(1, N = 119) = .76, NS$. Sixty two percent of infants who were not engaged with child health services received a child protection report, and 53% of those who were engaged with child health services received a child protection report.

Type of substantiated child protection risk or harm

A chi square analysis revealed no significant relationship between child health engagement and substantiated physical abuse. Similarly, there was no significant relationship between child health engagement and substantiated neglect notifications (See Table 1). Comparison analyses for child health engagement and substantiated sexual abuse could not be conducted due to the low sample size in the substantiated sexual abuse category.

A chi square analysis revealed a significant relationship between engagement with child health services and substantiated emotional abuse notifications. (See Table 1).

Table 1 goes about here.

Substance use and substantiated risk or harm

Seventy one percent of infants who were subject to substantiated notifications had not engaged with child health services prior to the child protection report. Sixty four percent of these infants were still not engaged with child health services following the notification.

A significant relationship between child health engagement and child protection notification was found for infants of methadone using mothers, Pearsons $\chi^2 (1, N = 53) = 8.13, p < .01$ (See Table 2). There was not a similar trend for children of illicit substance users. No significant relationship between child health engagement and substantiated notifications was revealed for children of illicit substance users, Pearsons $\chi^2 (1, N = 66) = 1.15, NS$. (See Table 2).

Table 2 goes about here.

Discussion

Twenty three percent of children of substance using mothers were not engaged with child health services at any point during the first two years of life. Thus a substantial portion of this at risk population is not taking advantage of standard health services. This indicates a missed opportunity of health service engagement for almost a quarter of identified children of substance using mothers.

There was a higher proportion of substantiated cases of emotional abuse amongst the non-engaged families in comparison to the engaged families. This suggests that child health services may act as a potential protective factor for children of substance using mothers.

Concerns that parents may have, relating to increased likelihood of being reported to child protection through engagement with health professionals, were not confirmed in this study. Engagement with child health services was not associated with reports to child protection services.

Maternal use of prescribed methadone, and thus a degree of regular engagement with health professionals, was not found to be associated with an increased likelihood of engagement with child health services. Despite this, engagement with child health services was related to decreased child protection notifications for children of methadone using mothers. These findings are suggestive of a protective pathway for infants where the mother is a methadone user and the child is engaged with child health services.

No significant relationship was established between child health engagement and substantiated child protection notifications for children of illicit

substance using mothers. It is likely that the complexities of illicit substance use and the associated risk factors persist regardless of engagement with child health services, indicating a need for further research into this complex interaction.

A considerable number of children of substance using mothers were found to never engage with child health services despite all mothers being referred. This study provides a tentative positive correlation that child health engagement is positive, at least for the methadone group. Further strategies aimed at increased engagement may be of benefit, including increased attention to antenatal care for substance using mothers.

Often the cumulative risk factors associated with maternal substance use contribute to child protection notifications. Further information about maternal substance use, including treatment adherence and substance dependence may be beneficial in future research aimed at quantifying the degree of substance use that is associated with increased child protection risk. The presence of other risk factors for child maltreatment, such as maternal psychiatric illness and domestic violence was not recorded and remains a limitation of the current study.

Past research has emphasised the importance of providing services that are collaborative and integrated and which attend to the needs of both the substance using mother and child ¹². Trialed integration of child developmental services provided at a methadone clinic revealed that the provision of child services in concert with substance abuse treatment programs is successful in addressing the needs of both mother and child ¹². Given that this study revealed that children of illicit substance using mothers are significantly more likely than children of

methadone using mothers to be the subject of substantiated child protection notifications, regardless of child health engagement, further research into strategies to engage illicit substance using mothers and their children in substance use programs and health focused interventions is indicated.

Research into services that attend to the complex needs of the illicit substance using populations are needed. Current government initiatives in early intervention are often based on population approaches rather than targeted interventions for at risk groups. Research focused on existing intervention programs will provide increased understanding and evidence for future policy and practice. Services that attend to the child, substance using mother and family should be implemented and reviewed in order to develop effective care pathways for the prevention of child maltreatment.

Acknowledgement

The authors wish to acknowledge Dr Andrea McGlade and Dr Maree Crawford of the Child Advocacy Service (Royal Children's Hospital, Brisbane) for their contribution to the development of the study. We also gratefully acknowledge the support provided by the Royal Children's Hospital Foundation in funding the research project.

1. McGlade, A., Ware, R., & Crawford, M. Child protection outcomes for infants of substance abusing mothers: A matched cohort study, *Paediatrics*, In Press. (2009).
2. Australian Institute of Health and Welfare. 2004 National Drug Strategy Household Survey. AIHW cat. no. PHE 57. Drug statistics series. Canberra: AIHW 2005.
3. Hawley, T. L., Halle, T. G., Drasin, R. E., & Thomas, N. G.. Children of addicted mothers: Effects of the 'crack epidemic' on the caregiving environment and the development of preschoolers. *American Journal of Orthopsychiatry*, (1995) 65(3), 364-379.
4. Suchman, N. E., McMahon, T. J., Slade, A., & Luthar, S. S.. How early bonding, depression, illicit drug use, and perceived support work together to influence drug-dependent mothers' caregiving. *The American Journal of Orthopsychiatry*, (2005) 75(3), 431-445.
5. Dawe, S., & Harnett, P.. Reducing potential for child abuse among methadone-maintained parents: Results from a randomized controlled trial. *Journal of Substance Abuse Treatment*, (2007)32(4), 381-390.
6. Schuler, M. E., Nair, P., Black, M. M., & Kettinger, L.. Mother-infant interaction: Effects of a home intervention and ongoing maternal drug use. *Journal of Clinical Child Psychology*, (2000) 29(3), 424-431.
7. Australian Institute of Health and Welfare. 2004 - 05 Child protection Australia 2004 -05. AIHW cat. no. CWS 26. Child welfare series, Canberra: AIHW 2006.
8. Burns, L., Mattick, R. P., & Cooke, M.. The use of record linkage to examine illicit drug use in pregnancy. *Addiction*, 101(6), (2006) 873-882.
9. Magura, S., & Laudet, A.. Parental substance abuse and child maltreatment: Review and implications for intervention. *Children and Youth Services*

Review, (1996) 18, 193-220.

10. Schuler, M. E., Black, M. M., & Starr, R. H.. Determinants of mother-infant interaction: Effects of prenatal drug exposure, social support, and infant temperament. *Journal of Clinical Child Psychology*, (1995) 24(4), 397-405.
11. Stewart, K., Richardson, P., & Olson, H. Clinical considerations in the assessment of infants and young children affected by parental substance abuse. In L. Chandler & Lane (Eds.), *Children with Prenatal Drug Exposure*. London: Haworth. (1996).
12. Shulman, L., H, Shapira, S., R, & Hirshfield, S.. Outreach developmental services to children of patients in treatment for substance abuse. *American Journal of Public Health*, (2000) 90(12), 1930 -1933.
13. Kaplan-Sanoff, M., & Leib, S. A.. Model intervention programs for mothers and children impacted by substance abuse. *School Psychology Review*, (1995) 24(2), 186-199.
14. Richter, K., & Bammer, G. (2000). A hierarchy of strategies heroin-using mothers employ to reduce harm to their children. *Journal of Substance Abuse Treatment*, (2000)19, 403 - 413.
15. SPSS for Windows, Rel. 11.0.1. 2001. Chicago: SPSS Inc.

Table 1. Percentages of substantiated abuse according to child health engagement.

	Engaged	Not Engaged	Chi Square
Physical Abuse	20% (n=17)	24% (n=8)	$\chi^2 (1, N = 119) = .18, NS$
Neglect	20% (n=17)	32% (n=11)	$\chi^2 (1, N = 119) = 2.06, NS$
Emotional Abuse	6 % (n=5)	29% (n=10)	$\chi^2 (1, N = 119) = 12.20, p < .05$

Table 2. Percentages of substantiated abuse according to child health engagement and type of substance use

	Substantiated risk or harm						Pearson's χ^2
	Yes			No			
	<i>n</i>	%	95% CI	<i>n</i>	%	95% CI	
Methadone							
Engaged	5	12.8	1.8 – 22.2	34	87.2	76.5 - 97.5	$\chi^2 (1, N=53) = 8.13, p < .01$
Not Engaged	7	50	23.8 – 76.2	7	50	23.8 – 76.2	
Illicit							
Engaged	21	45.7	30.6 -59.4	25	54.3	39.6 – 68.4	$\chi^2 (1, N=66) = 1.15, NS$
Not Engaged	12	60	38.5 – 81.5	8	40	18.53 – 61.5	