

**DOING BETTER WITH "BAD KIDS":
WHAT STOPS US FROM USING THE RESEARCH EVIDENCE?**

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ABSTRACT

Conduct disorder, or persistent antisocial behaviour in children and youth, is an important public mental health problem in Canada. There is much research evidence about causal risk factors, prevention and treatment, yet little of the research is incorporated into legislative, administrative or clinical policy decision-making. Decision-making in Hamilton, Ontario is used as a case study to illustrate this research-policy gap. This gap is then explained using a framework for health policy analysis that incorporates values (ideologies, beliefs, interests), institutional structures for decision-making, and research information. Values and institutional structures need to be considered if research evidence is to be disseminated and applied by policy decision-makers to prevent and treat conduct disorder more effectively .

Conduct disorder, or severe and persistent antisocial behaviour, is an important public mental health problem affecting children and youth in Canada and elsewhere. Much concern has been expressed about improving outcomes with these children and youth. Much research has been done on causal risk factors, prevention and treatment of conduct disorder. To date, however, little of this research evidence has been applied in legislative, administrative or clinical policy decision-making. There is a research-policy gap.

One explanation for this gap may be that research evidence about conduct disorder is not being effectively disseminated or used by various stakeholder groups to inform policy decision-making. There may be barriers to using research evidence that stop us from doing better to prevent and treat conduct disorder in children and youth. This paper uses a health policy analysis framework to understand the contribution of such barriers to the research-policy gap.

We first summarize the current mental health research evidence about preventing and treating conduct disorder, and use decision-making in Hamilton, Ontario as a case study to illustrate the research-policy gap. Then we apply a health policy analysis framework to explore why research about preventing and treating conduct disorder is not better disseminated and used by legislative, administrative or clinical policy decision-makers. This health policy analysis framework incorporates values (ideologies, beliefs, interests) and institutional structures for decision-making, as well as information. The aim of this health policy analysis is to (ultimately) contribute to improved prevention and treatment outcomes for children and youth with conduct disorder by (first) understanding barriers to the dissemination and uptake of research evidence by policy decision-makers.

THE RESEARCH-POLICY GAP WITH CONDUCT DISORDER

“Conduct disorder” is a psychiatric term referring to children and youth who display repetitive and persistent antisocial behaviours such as bullying, cruelty, stealing, weapons use, fire setting, lying, running away and truancy (1 - 9). To meet current psychiatric criteria for a diagnosis of conduct disorder, children or youth must exhibit at least three severe antisocial behaviours that persist for a year or more and that are associated with significant impairment in functioning (10). Youth involved with the police and the courts are usually termed “delinquents” or “young offenders” and are considered to be a subgroup of those with severe conduct disorder (3).

The following description epitomizes severe conduct disorder. “The youth who sprang his girlfriend from Arrell Youth Centre has a record many career criminals would envy. Unfortunately for society, he just turned 15 and has discovered an interest in illegal handguns. ‘This is a one-kid crime wave,’ said a Hamilton-Wentworth police officer who spoke on condition of anonymity. ‘He's not like other child criminals – not even close. He's a bad kid.’ That kid is in police custody today” (11).

Why is conduct disorder important? First, it is relatively common. In Ontario, 5.5% of children aged four to 16 may be affected (2), and conduct disorder is the most common reason for referral to child psychiatry services in Canada and the United States (4). Second, conduct disorder causes a heavy burden of suffering for individuals. It usually persists over time and it often progresses on a continuum: aggressive children become conduct-disordered youth who later become antisocial adults (1, 4, 7). The more severe the childhood symptoms, the worse the adult outcomes (1, 4).

Third, conduct disorder causes a heavy burden of suffering for families and society. Each year, approximately 10% of Canada's two million youth aged 12 to 17 have contact with the police because of their criminal activities (12). Violent crime rates for youth are controversial, but

are thought to have doubled in Canada between 1986 and 1992, and to have stabilized since (13). It costs approximately \$95,000 a year to keep a youth in secure custody in Canada, double the cost for an adult (8). Although not all youth in trouble with the law have conduct disorder, these youth nevertheless incur high costs for the justice system, costs to victims, and costs of lost human potential.

Conduct disorder is persistent, prevalent and costly. It is, therefore, one of the most important public health problems in child psychiatry (4, 7 - 9).

Research Findings About What Works

Most research evidence about conduct disorder comes from the fields of child psychiatry and psychology. Conduct disorder has usually been approached from one of two theoretical perspectives: either social or moral deficiencies lead to antisocial behaviour (these kids are “bad”), or antisocial behaviour is a reaction to harsh circumstances (these kids are “mad”) (9). Recently, most researchers have subscribed to developmental models that incorporate both perspectives in order to investigate causal risk factors, prevention and treatment for conduct disorder (14).

Causal risk factors are measurable characteristics in individuals or populations that precede outcomes of interest and that change the risk of outcome if manipulated (15). Knowledge about causal risk factors usually informs the investigation of preventive interventions. *Preventive* interventions modify causal risk factors early, before problems arise, while *treatment* interventions detect and ameliorate or rehabilitate established problems (16).

Given these definitions, we summarize the research findings on causal risk factors, prevention and treatment with conduct disorder. Findings are summarized only if they are supported by strong evidence from research using rigorous designs such as epidemiological, randomized controlled or cohort studies (17). We discuss effective as well as ineffective

interventions.

The search for causal risk factors usually starts with identifying correlates. There are many correlates for conduct disorder: male gender, chronic health problems, difficult temperament, reduced autonomic nervous system reactivity, school failure, parental criminality, parental discord, harsh and inconsistent parenting, large family size and poverty (3, 4, 6, 9). Many correlates overlap (2, 3). One of the strongest correlates is harsh and inconsistent parenting (4, 6, 7, 9). Poverty, affecting 18% of Canadian children (12), correlates strongly with psychosocial morbidity in general, including conduct disorder (18). The impact of exposure to either television violence or to delinquent peers is unclear (6 - 9). Genetic markers of criminality have been sought but not yet found (6). In contrast to risk factors, several protective factors may improve outcomes with conduct disorder: easy temperament; above-average intelligence; competence at a skill; good peer relationships; and a good relationship with at least one caregiving adult (3, 6).

While there are many correlates for conduct disorder, only three risk factors have been clearly identified as causal: harsh, inconsistent parenting; academic underachievement; and exposure to parental discord (3). Many researchers suggest that conduct disorder is a complex problem with multiple social as well as biological determinants (3, 4, 6 - 9). Most researchers agree that children and youth with conduct disorder are severely and multiply disadvantaged (1 - 9).

Do we know what works to prevent conduct disorder? There is evidence that pre-school child development programs as well as school and community programs that focus on social and academic skill development, parent training, and recreation all protect children at risk of developing conduct disorder (3, 4, 6, 7, 19). Trials are underway to test the long-term effectiveness of social skills training, parent and teacher training, academic enrichment and recreation programs as prevention tools (7).

Treatment strategies have also been researched for conduct disorder (3, 4, 6 - 9, 20 - 22). Although there is still uncertainty, four approaches show promise: cognitive-behavioural

problem-solving skills training with children or youth; parent management training; focused family therapy; and multisystemic approaches aimed at children, families, schools and communities (6). Most evidence also favours tackling problems early with long-term or continuing care approaches (6 - 8).

Some interventions are ineffective. Medications probably do not work (6), except where there are co-morbid conditions such as attention deficit with hyperactivity (23). There is no evidence that tough, punitive measures such as prolonged incarceration or “boot camps” are effective (8, 20 - 22). In fact, there is evidence that incarceration probably worsens outcomes (22). Many popular interventions such as “zero-tolerance” or “tough-love” policies have yet to be rigorously evaluated (8, 19, 20).

Finally, epidemiological evidence is relevant for planning interventions with conduct disorder. Given the high (20%) prevalence rates for childhood psychiatric disorders in general, specialized mental health clinics that target only individuals cannot meet the needs adequately (24). Speculatively, this epidemiological evidence suggests that communities need population health approaches that target social determinants of health in addition to clinical programs in order to deal adequately with children's mental health problems, including conduct disorder (24). This epidemiological evidence also suggests that children's mental health programs may benefit from the support of civic communities where an effective mixture of universal, targeted and clinical programs can flourish (25).

Case Study: Hamilton, Ontario

Hamilton is an industrial city located in southern Ontario with a regional population of approximately 452,000, including 118,000 children and youth aged 19 or younger (26). Given Ontario conduct disorder prevalence rates of 5.5% (2), approximately 6,500 children and youth in the Hamilton area are estimated to be affected. Hamilton was chosen to provide a single cross-

sectional sample because it is a medium-sized city comparable in population to many other Canadian cities. What are the current clinical, administrative and legislative policies in Hamilton with conduct-disordered children and youth?

Two principal mental health outpatient agencies – the Chedoke Child and Family Centre (27) and the Regional Public Health Department (28) – provide assessment and treatment, as well as group skills training programs (27) and youth forensic services (28). Both agencies have a direct mandate to serve children and youth with conduct disorder. Most work is done individually with children and family members. Between them, these two agencies see approximately 2,500 children and youth annually (27, 28). About half of all referrals are for problems with aggression or conduct disorder (29), which means that potentially 1,250 out of 6,500 children and youth with conduct disorder are served at any one point in time – less than 20% of the need.

In addition to these two children's mental health agencies, more than 40 other Hamilton organizations provide education, counselling, advocacy and related services such as child protection and residential treatment for children and youth, including those with conduct disorder (30). Since none of these organizations has a direct mandate to serve children and youth with conduct disorder, it is unlikely that most children and youth with conduct disorder receive appropriate services.

Hamilton services are situated in the larger context of shifting Canadian federal and provincial fiscal policies. The federal government funds a portion of health and social programs through transfer payments to the provinces, who then administer their own health, justice, education and social programs (31). Politicians in Canada (and elsewhere) have reduced public deficits and cut government spending (31, 32), resulting in cutbacks to many children's programs in communities like Hamilton despite the fact that federal and provincial governments have recently produced reports favoring investment in children's programs (33 - 36).

In addition to program cutbacks, children's programs and services fragment across many jurisdictions and agencies (36). In Hamilton, the more than 40 agencies serving children and

youth are funded by seven government departments representing three (federal, provincial, municipal) jurisdictions (30). There is little coordination of services, comprehensive and continuing care approaches to conduct disorder have yet to be developed, and there is no system to monitor relevant child health indicators at the population level or to evaluate community programs (27 - 30). Young offenders – who are frequently moved between institutions or discharged to the community without basic medical or social services follow-up – are particularly poorly served (28, 30).

Finally, in Hamilton and other parts of Canada, government policies are favouring increased punishments for young offenders in response to perceived public demand for more “law and order” (37). The Young Offenders Act, federal legislation introduced in 1985, covers youth aged 12 to 17 who are charged with crimes in all Canadian provinces and territories (37). Provincial governments then administer courts and corrections facilities for youth. The federal government amended the Young Offenders Act in 1995 to facilitate trying youth in adult courts and to increase sentences for youth aged 16 to 17 who were charged with serious offences such as murder (37). The Ontario government also recently introduced “boot camps” for young offenders (38), which will affect some Hamilton youth.

The Research-Policy Gap

There is considerable research evidence about effective (and ineffective) approaches to conduct disorder in children and youth. Yet in the Hamilton, Ontario example, many policies and practices are not consistent with this evidence. This research-policy gap is summarized in Table 1 below.

Table 1: The Research-Policy Gap

Research Evidence	Current Hamilton Policies
Conduct disorder is an important public mental health problem (4, 6, 7).	Most children and youth with conduct disorder do not receive supportive services (27 - 30).
Punitive approaches are costly and may exacerbate antisocial behaviour (8, 20 - 22).	Punitive approaches receive resources and popular support (37, 38).
Early, comprehensive multisystemic long-term community interventions are needed (6, 7, 9).	Long-term comprehensive community interventions are lacking (27 - 30, 33 - 37).
Individual clinical approaches alone cannot meet the needs (7, 24).	Many resources go to individual clinical approaches (27 - 30).
Promising treatments include parent and youth skills training (6).	Parent and youth skills training groups are insufficient to meet the need (27 - 30).

What barriers prevent this research information from being disseminated and acted upon by various stakeholder groups involved in policy decision-making with conduct disorder? A health policy analysis framework is used to explain this gap.

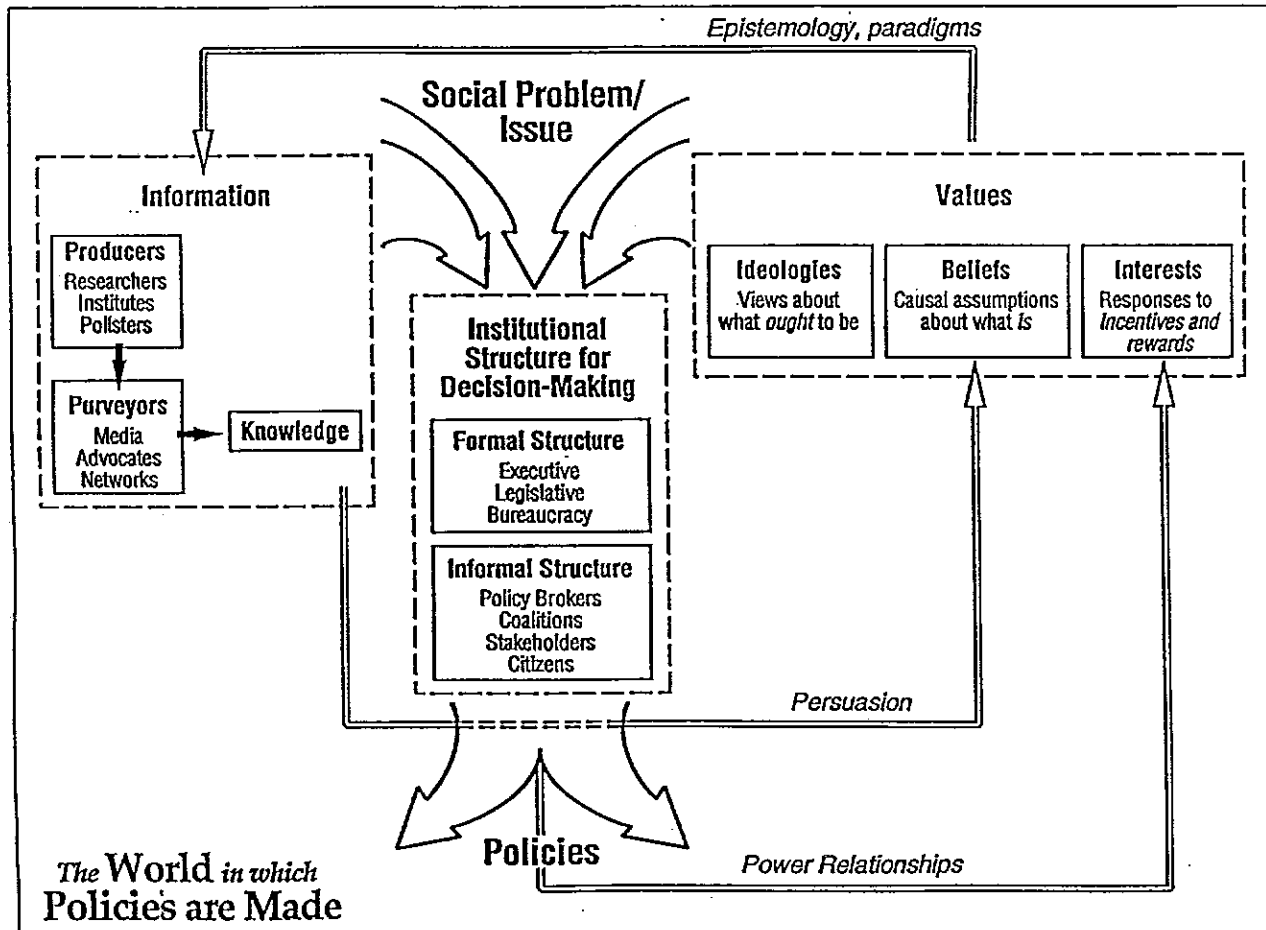
EXPLAINING THE GAP

Policies are the formal and informal rules governing the behaviour of individuals, groups and institutions within systems (39, 40). Policy analysis, the systematic study of policy, involves "weaving narratives about human behavior" (41) to explain how policies develop or to suggest how they may be changed. In health policy, *descriptive* analysis dissects how policy is formulated, while *prescriptive* analysis suggests what policy could or should be (42). Descriptive analysis usually precedes prescriptive. Health policy analysis is complex and must take into account the interacting components of health and social systems in which policies are made.

Lomas (39, 40) suggests a tripartite framework for health policy analysis that incorporates values (ideologies, beliefs, interests), institutional structures for decision-making, and information (producers, purveyors). In this framework (depicted in Figure 1 below), values, institutional structures and information influence legislative, administrative and clinical decision-making, often outweighing the role of research evidence alone.

Lomas' framework is applied to construct a descriptive health policy analysis that explains the conduct disorder research-policy gap as illustrated in the Hamilton, Ontario example in order to answer the question of what stops us from doing better with these children and youth. Barriers to using research evidence are elaborated in terms of the values and institutional structures affecting key stakeholder groups – including political leaders, citizens' groups, administrators, clinicians and researchers – who influence legislative, administrative and clinical decision-making with conduct disorder. Values and structures affecting how information is produced and purveyed are also considered.

Figure 1: Framework for Health Policy Analysis (39, 40)



Values

In Lomas' framework, *values* comprise ideologies, beliefs and interests (39, 40). *Ideologies* are views about what "ought" to be, *beliefs* are causal assumptions about what "is," and *interests* are responses to incentives and constraints. Debates in health policy (or any field) arise when different beliefs are advocated by opposing or competing coalitions. While debates about beliefs may be explicit, debates about ideologies and interests are often implicit, even though ideologies and interests intimately influence beliefs (43). Ideologies and interests may also be relatively impervious to influence by research evidence compared to beliefs (43). The ideologies, beliefs and interests of key stakeholder groups may contribute to the research-policy gap for the problem of conduct disorder by creating barriers to the dissemination and uptake of research evidence. These ideologies, beliefs and interests are outlined in the context of the Hamilton, Ontario example.

First, regarding ideologies, legislators or political leaders and the citizens who elect them are key stakeholders whose ideologies influence legislative decision-making about conduct disorder at the federal and provincial levels, affecting the context for Hamilton and other communities. A prevailing ideology appears to be that we live in an economy more than a society, or, that societal structures exist to serve the economy more than economic structures exist to serve broad social goals. This view is demonstrated in recent federal and provincial budget cuts affecting education, health and social services (32, 44). For example, current Ontario provincial leaders promote what they dub a "common sense revolution" that aims to "cut the size of government" because "Ontario is broke!" (45). These leaders seldom discuss the human costs of reducing services (45), especially for vulnerable members of society such as children and youth. A narrow focus on economic efficiency at all levels of government has arguably come to dominate many public policy considerations in Canada (44).

Political leaders represent the citizens who elect them. Canadian citizens are demanding

harsher punishments for youth crimes (37, 46 - 48), calling for an end to “summer camp” and “hugs and kisses” programs for young offenders (48). The view that antisocial youth ought to be punished seems to outweigh prevention or treatment considerations. Ideologies favouring punishment prevail despite decreased overall crime rates in Canada (49) – although youth crime rates have not decreased (13) – and despite suggestions that children and youth are more often victims than perpetrators of violence (12, 13, 47).

Ideologies favouring individualism may also play a role. Putnam notes the “strange disappearance of social capital and civic engagement” and connects the rise of individualism with a decline in civic commitment (50, 51). Others endorse this view and suggest that society now “unabashedly worships at the altar of individual consumer gratification,” with the result that the individual is transformed “from citizen to consumer” (52). This rise of individualism at the expense of civic engagement is seldom explicitly acknowledged (53) but may contribute to ideologies favouring economic efficiency and punishment by curtailing the social investments Canadians are willing to make to prevent and treat conduct disorder.

Many Canadian political leaders and citizens endorse the view that we ought to act in children’s best interests (33 - 36). However, where children’s needs conflict with ideologies favouring economic efficiency, punitiveness and individualism, children’s needs may be superseded (12, 36, 54).

Beliefs – our causal assumptions about what “is” – are another component of values (39, 40). In contrast to ideologies, beliefs are more explicit and more malleable when challenged or persuaded with empirical information (39, 40, 43). Political leaders, citizens’ groups, clinicians and researchers are key stakeholders whose beliefs influence how conduct disorder research evidence is used (or not).

Current Canadian federal and provincial politicians believe that governments need to reduce deficits even if this involves cutting social programs (31, 32, 44, 45). Some politicians also believe that increasing punishment will prevent or treat aggressive behaviour in children and

youth (38, 46 - 48), despite the fact that the costliness of these measures contradicts beliefs about the need to cut costs. Citizens appear to believe that crime is increasing (46, 47), probably a factor behind hardening attitudes toward all criminals, including young offenders.

Clinical and front-line workers sometimes believe that "nothing works" to correct conduct disorder (20), a form of nihilism that may prevent them from seeking and using research evidence about what does work. Researchers seek to influence clinical beliefs and practices but often appear to believe that reality is information-driven and that research findings will naturally diffuse to change front-line practices (55, 56). While logical, this "rational actor" model does not take into account the many other factors that influence policy decision-making (55, 56).

Interests – "how we would like it to be" – are the third component of values in the analytic framework (39, 40). Interests involve networks of responses to incentives, constraints and power relationships which protect our beliefs and influence our use of information, but which are often implicit (39, 40). The interests of political leaders and administrative and clinical service providers may compete with the interests of conduct-disordered children and youth to perpetuate the research-policy gap.

Political leaders who set legislative policies and ultimately fund government programs have an interest in staying in power. They are also accountable to their electorate and to various interest groups. If the public mood is perceived as tough and conservative, it is in politicians' interests to respond, for instance, with "get-tough" programs for young offenders. Politicians are also accountable to business interests which influence governments at all levels to pursue fiscal restraint and downsizing at the expense of social programs (31, 32, 44). While neo-conservatives may believe that fiscal restraint will ultimately help disadvantaged groups by increasing jobs or incomes (45), others argue that cutting social spending harms the most disadvantaged members of society, such as children and youth with conduct disorder, whose interests may be poorly represented (12, 13, 33, 36, 44, 57).

The interests of administrative and clinical service providers also influence the way

services develop. Canadian community services, initially provided by religious organizations dependent on volunteers with minimal government funding, have become dominated by professionals who depend on government funding (58). In the 1960s, community agencies blended social activism with individual clinical approaches, but by the 1980s, the clinical enterprise grew to dominate with a client base that included more and more of the population (58). The clinical enterprise has been critiqued for being costly, reaching only a minority of those in need, having a limited impact on population health outcomes, and not incorporating ideas about the social determinants of health (24, 25, 58). Despite these concerns, significant expenditures remain linked to clinical models (24, 58), suggesting that self-interest may exert influence in this sector as well.

Who advocates for the interests of disadvantaged children and youth? Many researchers and community and political leaders do, appealing to enlightened self-interest to advocate on behalf of disadvantaged children and youth (33 - 36, 59, 60). These advocates suggest that building a healthy economy depends on ensuring healthy development for all children in society, and that it is unacceptable on health and moral grounds to have "two worlds of childhood" in a country like Canada (25, 33 - 36, 59, 60). Other advocates suggest that deficits must be tackled but not "on the backs of young people" (57).

Institutional Structures for Decision-making

In addition to values, institutional structures for decision-making influence how policies are made and how research information is used (or not) (39, 40). Formal decision-making structures include executive and legislative branches of government and bureaucracies. Much policy decision-making also happens informally, influenced by stakeholders, coalitions and power relationships (61). Federalism is a salient aspect of all institutional structures in Canada (31). With conduct disorder decision-making, both formal government service delivery structures and informal citizens' coalitions play a role to influence the dissemination and use of research evidence.

Regarding formal government structures, Canadian institutions have developed within the context of our larger national identity, which has often been defined in reaction to the United States (62). In contrast to Americans, Canadians have emphasized "peace, order, and good government" over "life, liberty, and the pursuit of happiness," and as a result, Canadian policy-making has traditionally tended to be more incrementalist and collective than revolutionary and individualistic (62). Canadians have been likened to Americans – "only cleaner," "nicer," and "slower" (63). This incrementalism can produce stability but it can also hinder constructive change (61).

Within this larger Canadian context, children's mental health services are formally mandated by provincial public health, child protection and other legislation (36, 37, 64). Fragmentation is the most striking problem affecting services governed by this legislation (36), as noted in the Hamilton example where more than 40 agencies funded by seven government departments are involved with conduct-disordered children and youth. While this plethora of agencies could indicate the potential for social capital, with few structural incentives to encourage collaboration regarding ideas or functions, to evaluate the impact of programs, to monitor the progress of children and youth, or to ensure basic coordination of services, this fragmentation may do more harm than good (36).

Many agencies and individuals may wish to coordinate services and share information (27, 28), but be discouraged by recent budget cuts. For instance, budget cuts totalled more than 60% recently at one Hamilton agency mandated to coordinate community children's services (65). For children and youth with conduct disorder, cutbacks may worsen the fragmentation of services.

In addition to formal government service delivery structures, citizens' coalitions constitute important informal structures for decision-making. Citizen's groups are influential, especially if well organized, but they may be influenced more by ideologies than by research evidence (39, 40). One such group is Canadians Against Violence Everywhere Advocating its Termination (CAVEAT), a coalition of victims of crime, police, lawyers and other citizens that

focuses on issues pertaining to conduct disorder and crime in general (66). CAVEAT organizes public events on law reform and advocates "three strikes" laws, retention of juvenile records into adulthood, publicizing identities of young offenders, DNA testing of offenders, and stricter controls on television violence (66).

CAVEAT capitalizes on public belief that crime is increasing (46, 47) to lobby politicians to get tough on crime and to promote victims' rights over prevention or treatment concerns for young offenders (66). Politicians in Ontario have been influenced by beliefs about the "increasing incidence of violent crime" and have responded with "guaranteed" funding for law enforcement (45), including "boot camps" for young offenders (38). The federal government, in response to citizens' coalitions, has amended the Young Offenders Act to facilitate youth being tried in adult courts and to increase youth sentences (37).

No citizens' coalition lobbies for children and youth with conduct disorder. A few academics and policy activists champion these children and youth, but quietly, through academic and government venues (12, 13, 20 - 22, 33 - 36, 60), purveying research evidence that often contradicts popular ideologies, beliefs and interests.

Information

Information, the third component of the framework (39, 40), must be both produced and purveyed in order to create knowledge that is usable in policy decision-making (67). Once produced, how is any research information transformed into usable knowledge? "Raw research is not usable knowledge. It is an approximation of truth, it is one view of the world, it is potential knowledge " (61). Research information must be effectively disseminated if it is to become useful. For conduct disorder research, difficulties with dissemination may contribute to the research-policy gap.

Concerns about research dissemination have developed in the past 80 years in many

fields, starting with a “first wave” of academic and field work on transmitting agricultural innovations to farmers, and continuing with a “second wave” of program evaluations and dissemination projects in education and social services from the 1960s to the 1980s (68). In the health field, much research has concentrated on the dissemination and uptake of research findings for clinical practices with physicians and other health care providers. Many researchers have documented the limitations of vehicles designed to improve professional practice including clinical practice guidelines and continuing education (69 - 75). Despite their limitations, practice guidelines have proliferated – including guidelines for conduct disorder (76, 77) – with little evaluation of their impact on clinical practice or population health (40, 74).

Despite many demonstrations of what does not work with health research dissemination and uptake, there is still little certainty about what does work, let alone about what works in what kinds of settings for what kinds of decision-makers (40). Several authors discuss possible solutions for this continuing conundrum. Pless (78) describes a “breakdown” between “knowledge production and consumption” and challenges researchers to take more responsibility for effectively conveying research findings to practitioners. Huberman and Ben-Peretz (79) suggest that “research findings drop into a ‘force field’ of local interests,” a process often poorly understood by researchers, and argue for more collaborative models and processes to bridge the separate cultures of researchers and practitioners. Meanwhile, little research in the health field has focused on dissemination with decision-makers outside the clinical setting.

Even if we knew more about disseminating research, research information likely has most impact when it is congruent with the current values and institutional arrangements in society (40). Values can effectively screen information, as shown in the “bountiful and entertaining” (80) literature on cognitive dissonance showing that people often creatively reinterpret information that is incompatible with their values. Scientists also discard facts that do not fit with dominant paradigms (81). Sabatier (43) notes that “policy-oriented learning” takes time, perhaps “a decade or longer,” especially where ideologies (or “deep core beliefs”) conflict and issues are complicated.

For conduct disorder, the research information about effective (and ineffective) approaches to prevention and treatment clashes with current ideologies favouring economic efficiency and punishment.

Despite uncertainty about what works to disseminate research, popular media and journalists play a role in dissemination but their role may often be underestimated. Science and journalism have been described as “two solitudes” (82). However, several authors note close links between science and journalism.

There is evidence that coverage of research in popular media can positively influence scientists’ own perceptions of the importance of the research (83), and that coverage of research in popular media can facilitate substantial changes in public behaviour (84). Science journalists have been shown to rely on medical journals and researchers for many of their ideas (85), even though journalists may have difficulty critically evaluating scientific evidence (86). In short, media coverage influences both scientists and the public but journalists also depend on scientists for much of their information, suggesting that better media links could help researchers communicate findings.

In addition to needing links with researchers, the institutional structures inherent in the media may also constrain journalists and contribute to problems disseminating research for a problem like conduct disorder. Journalists are inundated daily by releases, letters and telephone calls, they must react to “hot news” with short notice on topics they have little time to research, and they must placate editors who favor simple stories or “bad news” even if the issues are complex (87). The popular media are also subject to pressures from interest groups and pressures to stay in business (88). With conduct disorder, “bad news” about “bad kids” may be easier to sell than complex coverage of research findings. If the media in turn influence both scientists and the public, this “bad news” bias may help perpetuate the conduct disorder research-policy gap.

SUMMARY AND CONCLUSIONS

Despite the importance of conduct disorder as a children's public mental health problem, a gap persists between research and policy. This gap may be explained using a framework for health policy analysis that focuses on the barriers to the use of research evidence. A complex calculus of values (ideologies, beliefs, interests) and institutional structures influences how research is used (or not) in policy decision-making. Research evidence is necessary but not sufficient to compete with values and institutional structures to influence decision-making.

How can we improve this situation? Several prescriptions arise from our analysis. Beliefs are worth targeting because they may be more easily changed with new information than either ideologies or interests (39, 40, 43). Changing beliefs may be a starting point for changing the behaviours that influence institutional arrangements.

If beliefs are to change, who needs to know what? Researchers need to know that research is not simply diffused to potential users (40, 78, 79). Legislators need to know that children and youth with conduct disorder can be helped with prevention and treatment programs but that punitive (and more costly) approaches do not help. Citizens' groups need to know that crime rates are stabilizing, and that punitive approaches do not help. Administrators and front-line workers need to know that early child development programs can prevent conduct disorder, and that four treatment approaches work: problem-solving skills training with children or youth; parent management training; focused family therapy; and multisystemic approaches aimed at children, families, schools and communities (6).

Everyone needs to know that prevention and treatment are needed long-term.

Popular media are also worth targeting. While we still do not know what works best to disseminate research information, we do know that popular media can influence the behaviour of researchers as well as the public (83, 84). To purvey research better using popular media, who needs to do what? Researchers need to use more sophisticated social marketing strategies to

cultivate media relationships and to consider decision-makers' contexts. Information exchange needs to be improved between all stakeholders and more research needs to be done on what works to disseminate research to all kinds of users.

In addition to changing beliefs and marketing ideas, it is helpful to recall that policy learning may take "a decade or longer" (43). It has been over a decade since the idea about social determinants of health was raised for wide public and professional debate in Canada (59). It has been nearly a decade since research was published suggesting the need for widespread children's mental health reform in Ontario (24). It has been nearly a decade since Canadian research was published on difficulties disseminating clinical practice guidelines (69). It may be time for the policy pendulum to swing. Program cuts could inspire reforms in mental health service delivery to pay more attention to effective outcomes for children and youth in need, or could lead citizens and policy-makers to question dominant ideologies about fiscal restraint at the expense of programs for disadvantaged children and youth.

This analysis suggests that values and institutional structures compete with information and create barriers to using research evidence that need to be taken into account if research information is to be useful in decision-making for a problem like conduct disorder. Why does all this really matter? Whitehead suggested: "The deepest definition of Youth is, Life as yet untouched by tragedy" (89). In our time, tragedy may be inevitable for some children and youth with conduct disorder, as well as for other members of society affected by conduct disorder. However, knowing what stops us from using the research evidence may be a starting point for narrowing the research-policy gap and doing better with these children and youth in order to minimize tragedy for all concerned. Lessons learned with conduct disorder may in turn help us with other complex social and mental health problems.

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