PREVENTION OF ALCOHOL ABUSE-RELATED BIRTH EFFECTS — I. PUBLIC EDUCATION EFFORTS

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Abstract — Maternal alcohol abuse during pregnancy can result in a pattern of anomalies in children called 'fetal alcohol syndrome' (FAS) and more recently, 'fetal alcohol abuse syndrome (FAAS). FAAS as well as individual alcohol-related anomalies, called 'alcohol abuse-related birth effects' (AARBEs), are widely considered to be totally preventable, because they stem from a behaviour that is presumably modifiable. However, current strategies to reduce their occurrence are more palliative than preventive, because their underlying premise, viz. that raising public awareness of the potential dangers of commonly used substances such as alcohol is enough to reduce their use, lacks empirical support. Moreover, in some cases they are also counter-productive. After considering the relevant literature, this review contends that 'universal' public education efforts will only be effective in reducing FAAS and AARBEs if they focus on the cause of these disorders, which is alcohol abuse rather than the currently open-ended message that any amount of alcohol consumption during pregnancy constitutes a danger to an unborn child. This argument lays the ground work for an alternative and more pragmatic strategy set forth in the following paper for preventing FAAS and AARBEs.

INTRODUCTION

Alcohol abuse during pregnancy can result in a pattern of anomalies in offspring characterized by: (a) pre- or post-natal growth retardation; (b) idiopathic facial features; (c) central nervous system dysfunction. Although this pattern of anomalies has been called 'fetal alcohol syndrome' (FAS) (Jones and Smith, 1973), the fact that it only occurs in children whose mothers are alcohol abusers prompted Abel (1998a) to recommend it be renamed 'fetal alcohol abuse syndrome' (FAAS). This would, at the very least, preclude the possible mistaken inference implied by the former name that this syndrome can result from very low levels of alcohol consumption (see later), and the more disturbing possibility, that many children are being treated for a condition they do not have (Abel, 1998a).

Additional features continue to be included in each of the main divisions of this disorder, but no single feature or division of this pattern is pathognomonic. These individual features have been variously labelled 'fetal alcohol effects' (FAE), 'alcohol abuse-related birth defects' (AARBDS), or partial fetal alcohol syndrome. Although these terms were formulated to describe an incomplete pattern of anomalies, rather than a lesser severity, the latter error has become commonplace, possibly due to the vagueness of the term 'alcohol' in these designations, as is the case for 'fetal alcohol syndrome.'

Whereas a number of studies have suggested some individual anomalies are associated with lower levels of drinking commonly referred to as 'light' or 'moderate' drinking, in nearly every instance these findings are attributable to either 'lumping' children whose mothers were 'heavy' drinkers (defined as consuming five or more drinks per drinking occasion) or alcohol abusers (defined as drinking five or more drinks regularly, e.g. two or more times per week) together with those of 'moderate' drinkers. Misclassification of alcohol abusers as 'moderate' drinkers may also occur because of denial, or because of a statistical artefact that results when drinking behaviour is averaged over weekly or monthly periods and expressed as 'average drinks per day' (Knupfer, 1984; Abel, 1998a). Studies in animals provide overwhelming support for the conclusion that
alcohol-related birth effects occur only at blood-
alcohol levels far above the legal level of
intoxication, i.e. 0.1 g% (100 mg/dl) (Abel,
1998a), a level more consistent with ‘heavy’
drinking or abuse. In terms of alcohol consump-
tion, the human equivalent to the typical con-
sumption of 12 g/kg of alcohol by animals on a
liquid diet containing 35% ethanol-derived
calories is 54 drinks/day for a 60-kg woman
(Abel, 1998a).

Whereas it is certainly clinically prudent to
advise abstention during pregnancy, especially in
a climate of rampant medical litigation, the idea
that there is ‘no safe level’ of drinking during
pregnancy has no legitimate scientific basis, since
science does not enable one to prove the ‘null
hypothesis.’ In keeping with Popper’s ‘falsifica-
tion principle’ (Magee, 1994), one can never prove
something does nothing. Furthermore, there are
many studies which have found no significant
effects at low doses of alcohol (Abel and Reddy,
1997).

Since it is only a very high level of drinking that
is known to be reliably harmful to the fetus,
labelling these effects ‘alcohol abuse-related birth
effects’ (AARBEs) would be more precise and
would create much less uncertainty as to their
aetiology. Equally important, it might prevent the
kind of glib diagnosis that has resulted in children
being labelled as FAAS or AARBEs who do not
have this problem (Spohr, 1984). If we are to
avoid the same rampant surge in diagnoses that
has made ‘attention deficit disorder’ (ADD) a
‘catch-all’ disorder, and has led to an attendant
surge in ‘chemical fixes’ like Ritalin being
administered to children in the United States
(Reid, 1996), we need to be much more aware of
‘what’s in a name.’ Therefore, FAAS and
AARBEs are used in this review as acronyms,
unless reference is being made to articles which
use the older terms.

PREVENTION STRATEGIES

The overwhelming thrust in prevention of
AARBEs in the United States has taken the form
of ‘universal’ public health warnings. This stra-
gedy is aimed at reducing the occurrence of
AARBEs by increasing awareness among the
general public about the potential dangers asso-
ciated with drinking during pregnancy. In the case
of AARBEs, the main tactic by which this strategy
has been implemented is the federally mandated
warning label on alcoholic beverages, and state
and local point-of-sale ‘signage’ laws which state:

GOVERNMENT WARNING: (1) According
to the Surgeon General, women should not drink
alcoholic beverages during pregnancy because
of a risk of birth defects. (2) Consumption of
alcoholic beverages impairs your ability to
drive a car or operate machinery, and may
cause health problems.

The underlying premise behind public health
measures, such as the alcohol warning label, is
that government has a moral obligation to educate
the public about health hazards connected with
drinking behaviour in general (Plant and Plant,
1997) and drinking during pregnancy in particular
(Blume, 1980; Andreas, 1988; Dukes, 1989). The
assumption is that such education will evoke
concern and motivate abstention, or if one still
decides to drink, to drink less than one would
otherwise have done in the absence of a warning
message (Blume, 1980).

While public education may influence drinking
behaviour in the short term (Greenfield, 1997), the
underlying assumption that education alone can
alter drinking behaviour in the long term for the
general population (Plant and Plant, 1997) or
pregnant women, lacks empirical support. In
Saskatchewan, Canada, for instance, the incidence
of FAAS has remained unchanged over a 20-year
period, despite intensive provincial and national
education campaigns raising public awareness of
the potential dangers of excessive drinking during
pregnancy (Habbick et al., 1996). Hankin et al.
(1993a, b, 1996) found that the warning label had
had only a small and transient impact on drinking
during pregnancy among inner city African
American women, and the effect has been
confined to ‘light’ drinkers, in other words, those
least at risk (cf. also, Scammon et al., 1991;
Kaskutas and Greenfield, 1992; Graves, 1993); the
deterrent effect among heavier drinkers and
women with high parity has been minimal (Hankin
et al., 1993b, 1996).

The ineffectiveness of the warning label is not
due to its not being seen. Awareness has been
relatively high among the adult public as a whole
and has increased over time (Dufour et al., 1994;
Greenfield, 1997). Certain segments of the popu-
lation appear to have taken somewhat greater or lesser notice, however. Among inner city African American pregnant women, awareness was as high as 80% in late 1992 (Hankin et al., 1996). In Utah, where abstinence from alcohol is characteristic of the Mormons, awareness of the label was related to religiousness. By early 1991, 44% of the less devout Mormons said they had seen the label compared to 15% for the more devout (Mayer et al., 1991; Scammon et al., 1991). Awareness is also higher among heavier drinkers. In 1990, shortly after the label’s appearance, 39% of the women 18 to 29 years of age classified as ‘heavy’ drinkers (those drinking five or more drinks at least once a week) were aware of the warning label, compared to 12% for abstainers (Kaskutas and Greenfield, 1992).

Regardless of how aware Americans are of the message, their increased awareness has not resulted in long-term decreases in consumption. For example, a recent study by the US Centers for Disease Control (CDC) found that the frequency of drinking among pregnant women increased 4-fold between 1991 and 1995 (Centers for Disease Control, 1997). This increase may reflect a perception that the risks associated with ‘light’ or ‘moderate’ drinking during pregnancy have been overstated (cf. Testa and Reifman, 1996). For whatever reason, there has been no change in the percentage of adults who regard drinking during pregnancy as being ‘very harmful’ (Mayer et al., 1991; Mazis et al., 1991; Scammon et al., 1991; Graves, 1993; Hankin et al., 1993a, b).

Expectations that public education alone will alter behaviour that has been going on for a long time without any noteworthy consequences, are unrealistic. In the United States, as many as 20% of the women surveyed in one study said they drank more during pregnancy than what they themselves considered harmful (Minor and Van Dort, 1982). Another study found that only 25% of the women surveyed felt abstention was the best course during pregnancy (Little et al., 1981). Only 53% of those surveyed concerning the label said the label made them ‘think this is really something dangerous, not an ordinary product’ (Kaskutas, 1993). ‘Why support a warning label policy,’ the author of this study rhetorically asks ‘if the label is not going to mean alcohol is dangerous?’. In light of these reports, the (American) Institute of Medicine (1996) has expressed scepticism that public education via warning labels or any similar health warnings, will ever have an impact on AARBEs.

One reason such warnings have been less than useful may be that AARBEs are associated with drinking behaviour that has passed the voluntary stage of consumption (Institute of Medicine, 1996). In other words, the kind of drinking behaviour that leads to AARBEs is compulsive, rather than voluntary, and therefore less responsive to modifications. Heavy drinkers may be more likely than occasional drinkers to be aware of the warning label (Kaskutas and Greenfield, 1992), but they are also less inclined to act on that knowledge than are women whose risk for birth defects is very low. The fact is that it is only the drinkers whose consumption is not yet at the compulsive stage, that have altered their drinking behaviour in response to these public education efforts (Hankin et al., 1993a, b). But as the recent CDC study indicates, even that effect has been short-lived.

WHY THE ALCOHOL WARNING LABEL IS INEFFECTIVE

When warnings are not specific (cf. Greenfield, 1997; Mosher, 1997) and the perceived risks of ignoring those warnings are low (Abel, 1995), the motivation to comply is undermined. The alarmism implicit in the alcohol warning label will not overcome this resistance (Deturck et al., 1992a). Since the warning label is not specific as to quantity, and since pregnant women have been drinking alcohol for millennia without perceivable effects on their children (Abel, 1997), they can draw upon their own experiences and those of family and friends for validity (Hankin et al., 1993a; Testa and Reifman, 1996). Moreover, their scepticism increases with increasing parity (Testa and Reifman, 1996).

On the other hand, women whose drinking actually places them at risk for FAAS or AARBEs, are more inclined to attribute such outcomes to fate than to drinking (Testa and Reifman, 1996). The greater the consumption, and the more dominant the role of drinking in one’s regular routine, the greater the denial about the dangers of alcohol abuse (cf. DeTurck et al., 1992b). This same defensiveness occurs with respect to cigarette labels, and accounts to some
extent for their minimal market impact (Andrews et al., 1990). Consequently, the alcohol warning label's ineffectiveness is not surprising (see later).

Despite its ineffectiveness, most people support the presence of the alcohol warning label (Hilton and Kaskutas, 1991). People want to be informed of potential dangers to their health, and such messages are benign and non-invasive (Plant and Plant, 1997). Legislators approve of them for several reasons. One is that they are perceived as symbolic of a positive governmental response to a public problem. Another is that such symbols are seemingly directed at a small segment of the drinking population, namely the problem drinkers (Moskowitz, 1989). A third reason is that the legislation involved requires minimal governmental costs. Despite such support, however, few believe warning labels are an effective means of changing the behaviour of drinkers most at risk for AARBEs; i.e. alcohol abusers (Kaskutas, 1993; Greenfield, 1997).

THE ‘DOWNSIDE’ OF THE ALCOHOL WARNING LABEL

Although the alcohol warning label has had no meaningful impact on drinking during pregnancy, its supporters contend the warning is nevertheless worthwhile, because it does no harm; slight as it may be, the good may therefore outweigh the harm (Blume, 1980).

While most people approve of the ‘right to know’ (Andreas, 1988), this does not mean the message conveying that ‘know’ never causes harm. In fact, some studies have found that educational efforts often backfire, and use of alcohol and illicit drugs actually increases after these kinds of initiatives (Plant and Plant, 1997). For high school and college students, for instance, the warning label appears to have prompted an increase in drinking and driving (Kaskutas and Greenfield, 1992). This kind of ‘boomerang’ effect occurs when a warning motivates people to engage in the proscribed behaviour to assert their individuality or because they interpret such messages as a threat to their individual freedom (Bensley and Wu, 1991; DeTurck et al., 1992a, b). According to ‘psychological reactance’ theory, curtailing behaviour one feels free to engage in at any time, especially if that attempt is perceived as coercive, arouses a motivational state in that individual, called ‘reactance.’ The goal of this motivational condition is to reassert the endangered freedom (Brehm, 1966). In the case of warning labels involving drinking or smoking, expressions of potential harm may make these activities attractive to young people looking for an opportunity to display bravado.

The ‘boomerang’ effect is also consistent with dissonance theory (Festinger, 1957). In essence, this theory maintains that when people hold two incompatible cognitions, they will experience cognitive dissonance and will be motivated to reduce that dissonance by changing either their attitudes or their behaviour. Smoking, for example, increased soon after warning labels appeared on cigarette packages (Schuster and Powell, 1987). When smokers were confronted with information about the adverse effects of smoking, those who felt pressured to adopt negative attitudes toward smoking instead ended up adopting positive attitudes (Linder and Worcel, 1970).

In the case of drinking during pregnancy, cognitive dissonance may cause a woman to drink even more, so as to deny to herself that her behaviour is in fact harmful. The implication contained in the warning label, that any amount of alcohol consumed during pregnancy constitutes a danger to the unborn child, has in fact made many women so anxious that they have sought to terminate their pregnancies to avoid the possibility of giving birth to a child with ‘birth defects’ (Lipson and Webster, 1990; Koren, 1991; Kaskutas, 1995).

Even if they do not consider terminating their pregnancies, the stress during pregnancy associated with the belief that they have harmed their unborn child may itself be harmful to that child (Abel, 1998a). The concurrence of a birth defect and drinking during pregnancy may be solely a coincidence, but a woman who is a ‘light’ drinker may feel needlessly guilty that the single drink she consumed once a week during her pregnancy was the cause of that unfortunate outcome. The idea that any amount of alcohol is harmful to an unborn child is groundless (Abel, 1998a), yet the terms ‘fetal alcohol syndrome’ and ‘alcohol-related birth defects’ along with the persistent disclaimer that ‘no safe level’ has been established only create a greater guilt when a mother searches for the ‘cause’ of her child’s problems.

In conclusion, if we are to prevent birth defects
that result from excessive drinking during pregnancy, we will have to focus on the very real problem of alcohol abuse instead of being distracted by pseudoproblems created by statistical artefacts. Whereas ‘universal prevention’ through public education can be a valuable tool for harm reduction, the studies reviewed here indicate that public education alone has had little impact on either reducing drinking during pregnancy, or on FAAS or AARBEs. However, as the following article (Abel, 1998b) indicates, ‘universal prevention’ can play an important role in reducing the occurrence of FAAS and AARBEs. However, it is an adjunct to a more pragmatic prevention strategy that it is likely to be most effective.

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REFERENCES


