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"Social Medication" and the Control of Children: A Qualitative Study of Over-the-Counter Medication Among Australian Children

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ABSTRACT. *Objective.* The aim of the study was to identify the patterns of use of over-the-counter (OTC) medications among children.

Methods. The study used a qualitative design, with in-depth interviews of 40 parents with children <5 years of age.

Results. There were 3 striking and readily apparent themes in the use of OTC medications among children. One was the administration of OTC medications as a form of "social medication," to give parents control over children's behavior that they perceived as fractious and irritating. A related theme was the use of OTC medications to reduce the inconvenience to the parents of having a sick child, again giving parents greater control and better time-management abilities. Finally, acetaminophen was considered by many parents to have almost miraculous properties in calming, sedating, and lifting the mood of children.

Conclusions. The use of OTC medications for the treatment of minor ailments among children is widespread, despite the lack of evidence of efficacy of the most commonly used medications and the potential for toxicity. With the increasing propensity to look to medication as a means of supporting changing lifestyles, there is an urgent need to review the prevalence and effects of social medication. *Pediatrics* 2004; 114:e378–e383. URL: <http://www.pediatrics.org/cgi/content/full/114/3/e378>; parental stress, parental perception, child behavior, drug safety, over-the-counter.

ABBREVIATION. OTC, over-the-counter.

Most people are pretty happy to resort to over-the-counter medication if their kids are not sleeping . . . It really saves children's lives . . . it stops mums from throwing them [the children] against the wall.

Interview with mother of 2 children <5 years of age

Vallergan [trimeprazine] elixir acts as a sedative and will help a coughing child (and their exhausted parents) to sleep better.

Community advice from a general medical practice in the United Kingdom

The late 19th century saw a rising culture of self-medication and ready-to-use drugs for infants, many of which were opiates. In Australia, for instance, proprietary medicines became a

common feature in the home and were administered to children almost as soon as they became restless or "cross" in the night.¹ Syrups, "soothers," and teething powders were used for common, minor, health concerns such as "wind" and coughs. To pacify children, chemists, confectioners, and door-to-door salesmen sold narcotic lozenges, prepared with morphine and opium.¹ Teething, which was considered a major health problem for infants and was described as a period filled with "terror to a mother's imagination," was often recorded as the actual cause of death of a child, although now it is thought that the deaths were probably caused by the teething powders themselves, which were made of chloride of mercury and opium.² Although these products were marketed as "perfectly mild and free from danger," a coronial inquiry into a spate of infant deaths around 1880 found that many of these medications recommended unsafe doses of alcohol, morphine, and other opiates. An Australian Royal Commission in 1907 reported that 15 000 children were killed every year by soothing syrups and similar preparations.³

Medications in various (more benign) forms have, however, remained an important feature in the management of many minor "ailments" among children. Over-the-counter (OTC) medications, for example, are promoted through television, radio, and print advertising. The advertisements, which are primarily targeted at women, often housewives or working mothers, encourage them not only to self-medicate (take an "ASPRO when you're tired, irritable, and nervy") but also to dispense OTC medications to their children, because it is important to establish a "lifelong pattern of sensible [drug] use."⁴ Advertisements create a relationship, in the mind of the consumer, between OTC medication use and compassion for one's children. The compassionate mother helps the child to "soldier on," which, in turn, allows the mother to "turn a sick day into a work day."⁵ This strategy was so successful that, in Australia, there was a greater increase in OTC medication use between 1992 and 1996 than there had been in the whole of the preceding 10 years.¹ This was accompanied by deregulation of the sale of some pharmaceutical products, allowing the market to extend out of the community pharmacy and into supermarkets. This move had the effect of increasing public accessibility and in turn self-medication.^{6,7} Parents who were averse to medicating their children with chemicals were given alternatives in the form of natural

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health care products that included pediatric soothers.⁸

Research on the medication of preschool-aged children has suggested that the use of OTC medications is substantial. Kogan et al,⁹ for instance, found that 54% of 3-year olds in the United States had been given OTC medications in the 30 days preceding the study.⁹ In a community survey in New York, 22% of children had taken OTC medications in the preceding 2-day period. Studies in the United Kingdom also indicated high rates of OTC medication use among children, ie, 28% during a 2-week period and 66% during a 4-week period.⁹ Figures appear to be similarly high for Australian preschoolers. A cross-sectional study conducted by Slack-Smith et al¹⁰ on the prevalence of medication use among children attending day care in Western Australia found that 73% of the children had received OTC medication. According to the 1995 Australian National Health Survey, more than one-half of children <5 years of age (54%) had taken medication of some kind in the 2 weeks before the survey.¹¹ Substantial proportions of that group had been given OTC medications, such as medications for treatment of coughs and colds (166.9 children per 1000) and pain relievers (162.5 children per 1000).¹¹

Two important questions arise from the prevalent use of OTC medications among children. 1) Are OTC medications effective treatments? 2) Are OTC medications used solely for the treatment of childhood illness?

If OTC medications were effective in the treatment of childhood coughs, colds, and fevers, then the prevalence of use would be of little more than academic interest. This is not the case, however, if the 2 most commonly used classes of OTC medications (those for coughs and colds and antipyretics) are examined. A series of systematic reviews have found that OTC cough mixtures are no more useful than placebo,¹²⁻¹⁵ and the use of antipyretics in controlling fevers is of dubious value.¹⁶ In fact, it appears that both doctors and parents have unrealistic expectations regarding the natural history of childhood coughs and colds,¹⁷ and this is fertile ground for the advertising and sale of (inefficacious) OTC medications.

Despite their lack of efficacy in treating the conditions for which they are marketed, the inappropriate use of OTC medications may not be benign. The more common side effects of some OTC medications include mild irritability and sleepiness to visual hallucinations and psychosis.¹⁸ Additional concerns include drug interactions, allergic reactions, and the use of inappropriate medications for various ailments.¹⁹ Research based on pediatric hospital admissions attributable to poisoning shows that children <5 years of age make up 86% of the child poisoning admissions, with the peak of poisoning incidence for medication ingestion being 2 years of age.²⁰ One of the most common causes of poisoning was the administration of the wrong medication; 74% of poisoning admissions were attributed to medication, as opposed to the ingestion of household chemicals. The most common poisoning agents were respirato-

ry/muscle relaxants, cough/cold medications, acetaminophen, antihistamines, and benzodiazepines.²¹

An additional problem with OTC medications is poor adherence to the correct dosages. A study evaluating the ability of parents to administer the correct doses of OTC medications to their children found that, despite the large proportion of parents with high education levels and the availability of a wide range of measuring instruments and written instructions, only 30% of parents were able to determine and measure accurately a correct dose of OTC medication for their child.¹⁹

OTC medication use among children can also affect broader health-related response patterns. Familial patterns of medication use and the administration of medication to children have been linked to self-medication in later life. The literature on familial help-seeking and problem-solving strategies suggests that the health patterns used by parents with respect to their children can be influential in determining the eventual patterns adopted by the children when they are old enough to make their own decisions concerning their health and well-being.²² Furthermore, the self-medication culture among parents seems to promote self-medication among children at an increasingly young age.²³ A study of kindergarten-aged children through year 6 students found that 67% of the children reported that they got medications for themselves or brought medication from somewhere in the house for another person to take, usually an adult in the household.²⁴ The study also found that the majority of mothers thought that, by age 12, children should be able to take medication for common health problems without consulting an adult. There is also an increasing trend for self-medication in schools. In a study of >400 primary school-aged children in a summer camp, 44% reported having medications with them that they did not report to either the health staff or the administration.²⁵ Of those children, 31% had no indication of any related health problems on their health history cards.

Despite the lack of evidence for the efficacy or effectiveness of many OTC medications¹⁴⁻¹⁶ and the possible risks associated with their improper use among young children,^{26,27} they remain widely used.^{11,28} In fact, they continue to be recommended through play groups and other parental support groups, self-help literature,^{29,30} maternal health nurses, pharmacists, and even medical practitioners. Web sites that offer parenting advice recommend sedative cough syrups as "must-haves" in the family medicine cabinet (see, for example, www.holbrookurgery.com/illness%advice.htm and www.aboutchildrenhealth.com).

Although there has been research on the prevalence of OTC administration, the reasons for and complexities of use are not well understood. This may be attributable, in part, to the largely quantitative nature of the research, which has sought to estimate prevalence rather than explain behavior. In contrast, the main aim of this study was to examine the individual and situational factors and the social processes (not related strictly to poor health) that support the use of OTC medications among children.

METHODS

The study was qualitative and designed to elicit descriptions of episodes in which parents administered OTC medications to their children. A snowball sample was recruited,³¹ which was an appropriate sampling technique to identify the networks of parents with young children with whom we could explore the study aims. The primary participants were identified through notices, distributed and displayed at child care centers, play groups, and nursing mothers' groups, for a study to explore the use of OTC medications for young children. Forty parents who were the primary caregivers for children <5 years of age were recruited, after which no additional participants were sought. The sample size was based on the minimum required for data saturation in the identification of themes highlighting the patterns of use of OTC medications.^{31,32}

After consent for participation in the study had been obtained, appointments were made for interviews, which lasted approximately 2 hours; most interviews were conducted in the homes of the participants. The researchers involved in data collection were female and had experience working with mothers and young children.³³ The extended interviews enabled the researchers to administer a semistructured questionnaire, to collect data on the number of children in the family, the birth order of the particular child who was <5 years of age at the time of the interview, the parent's educational background and marital and employment status, care arrangements for the child, family and other support, sources of information on child rearing, medications kept at home, sources of information on medications in general, and child health and health-seeking behavior. A more unstructured approach was used to elicit data on the last episode when an OTC medication was administered, enabling researchers to probe for information on the course of illness (if that was the indication), identified symptoms, and situational factors pertaining to administration of OTC medications.

OTC medications were operationally defined as any medications that did not require a prescription from a state-registered medical practitioner for purchase, with a focus on Schedules 2 and 3 of the Australian Uniform Scheduling of Drugs and Poisons.³⁴ Medications such as vitamins and other supplements were excluded, because of the very wide range of natural and pharmaceutical products available in that category. Thematic analysis was used to analyze the qualitative interview data.^{35,36} The results presented here focus on the analysis of events surrounding the administration of OTC medications.

RESULTS

Subjects

The sample included 38 mothers, 2 of whom had their partners with them at the time of the interview, yielding a total of 40 parents. The participants were from a range of backgrounds; two-thirds had tertiary qualifications (including technical and trade qualifications). Although no information on socioeconomic status was collected specifically, the sample could be described as broadly lower- and upper-middle class, on the basis of the suburbs in which the study was conducted. All of the participants were white Australian. Slightly more than one-half of the mothers were working or studying on a part-time or casual basis. Three were working full-time. For several of those not working, the reasons included lack of access to child care or a choice to remain at home while their children were young. All of the participants were married or in relationships. Three quarters had >1 child.

OTC Medications Used

Acetaminophen (paracetamol) was the most commonly administered OTC medication, with all 40 parents having administered it to their children, mostly for treatment of pain and hyperpyrexia but

also for a range of other reasons described later. Sedating antihistamines, such as cough and cold preparations, were the next most commonly used medications, with 31 of the 38 interviews describing administration at various times. The OTC medications included promethazine hydrochloride, dextchlorpheniramine, a combination of brompheniramine maleate and phenylephrine hydrochloride, and a combination of chlorpheniramine maleate and phenylephrine hydrochloride. Eight mothers reported using a combination of codeine, promethazine, and acetaminophen, and 7 reported using trimetoprim (promethazine is used for pediatric anesthesia in dentistry,³⁷ and trimetoprim is used as a premedication for general pediatric surgery). Most parents interviewed had used combinations of these medications at different times. One mother said, "[I've] always got Panadol (acetaminophen) in the house and Pain-Stop (codeine, promethazine, and acetaminophen). If they are in pain I'll always give them Pain-Stop; anti-histamines, . . . like if they've got a runny nose I'll give them anti-histamines."

Clinical Signs

The most common indications reported for the use of acetaminophen were hyperpyrexia and teething. Most mothers reported not needing to use a thermometer but being able to tell that children were unwell when they felt warm or looked flushed. Other indirect signs of hyperpyrexia included lethargy, bad temper, and complaints about soreness.

Colds or runny noses were treated with the wide range of sedating antihistamines (listed above), because they were very good for "reducing congestion," "drying them out," "preventing ear infections," and "tackling the coughs that kept them awake, just like in the ad[vertisement]s on television." Promethazine was the most frequently cited antihistamine, followed by the combination therapies of brompheniramine maleate and phenylephrine hydrochloride or chlorpheniramine maleate and phenylephrine hydrochloride.

There did not seem to be any brand loyalty (although reference was always made to the brand name), and mothers were prepared to buy whatever was available at the time or that which the community pharmacist recommended. It was critical, however, that the purchased OTC medication could be stocked in the home medicine cabinet and readministered for subsequent illness episodes. The particularly valuable clinical effect of the cold and cough medications that was reported was that they helped the children's "snuffles" and made them sleep, which was considered very important in the recovery process.

Preemptive Treatment

Preemptive treatment was another indication for OTC medication administration; we classified this as "social medication" because the parents were using the medication for what they had observed as a side effect (altering the behavior or state of arousal of the child), rather than for its intended purpose (to reduce pain and/or pyrexia in the case of acetaminophen or

to reduce respiratory symptoms in the case of the cold and cough medications). For mothers, the indications for preemptive treatment included a set of signs and behaviors such as "he looked like he may have been brewing something," "she wasn't her normal self," "grumpy," "was generally unhappy," "whining," "cranky," "one tantrum after another," "grizzly," "fractious," and "overtired." Mothers also described their "intuition," "gut feeling," and "maternal instinct" as instrumental in their deciding when "a dose of something was needed."

Behavior Change

Acetaminophen was administered to manage several problems. Mothers were adamant about its pharmacologic action in calming children and causing sleepiness (a side effect they also observed in their own use of the drug), and one referred to it as her "cure-all." Acetaminophen was also purported to ward off the "sad feelings children get when they are not feeling well." Descriptions for acetaminophen usage included the following. "If they are not sleeping at night, I give them Panadol [acetaminophen]." "I often give my daughter Dymadon or Panadol [both acetaminophen], especially lately as she has been grizzly because she has been teething and this always seems to calm her down." "Last week he was cranky because he lost his Elmo sunglasses, which are his favorite, and he would not calm down, so I gave him some Panadol, which settled him . . ." "Before I met my husband, who is a doctor, I didn't like taking Panadol myself. But he made me realize that it was a 'quality of life' issue. Now I just think, 'if it gets us through the day, I'll give it to him [her son] freely.' "

Others described the effect of OTC sedating antihistamines in settling "grumpy" or "unsociable" behavior. One mother described her daughter as being very good at recognizing when she [the daughter] was becoming "grumpy," and she [the daughter] would spontaneously point to one of the OTC sedating antihistamines. Four mothers talked about how invaluable sedation was for long-distance travel, both for the children and for the other passengers. For one mother, it had been a recommendation from her general medical practitioner to use trimeprazine.

Another reason for social medication was the need for parents to be able to leave the "unhappy" child in other people's care, allowing the parents to go to work or engage in a role other than parenting. "The last time there was something wrong with my daughter, she was crying a lot, so I knew it was teething or some other problem. I gave her Infant Panadol [pediatric acetaminophen] and sent her to day care because I couldn't afford to miss work that day." "At the kindergarten that our son goes to, parents are sending their kids to kinder with all kinds of germs because they have to go to work. So they dose them up with medication and give the child care workers the medication with instructions to give them further doses throughout the day."

For the Sanity of the Parents

For most of the mothers who reported using OTC medications, the major problem was the inability of the child to sleep or a belief that the child "ought" to sleep to feel better and thus improve his or her behavior. Others just needed the children to sleep when they, as parents, were exhausted. "To keep functioning my wife and I have to have a good night's sleep. So we trade off giving the drug to have a good night's sleep." A few described OTC use as necessary just to break a child's cycle of bad sleeping habits. Sedation was, therefore, a major reason for the administration of medication for more than one-half of the mothers interviewed, and the sedating antihistamines were regarded as most useful. Although a few mothers reported that it made their children more excitable or hyperactive, most found at least 1 preparation that worked best for their child. "The pharmacist suggested Pain-Stop [acetaminophen, codeine, and promethazine] for when he was teething a few years ago. I don't know if it helped the teething but it made him sleep very well and I have used it since then." "With Dimetapp [brompheniramine maleate and phenylephrine hydrochloride], I find he sleeps very heavily [and] seems calmer the next day." "Somebody who knew we were having sleepless nights said, 'why don't you give her some Phenergan [promethazine] to make her sleep?' It worked really well."

A major challenge in conducting this research was to ensure that parents did not feel they were being judged for their reasons for using OTC medications. In some cases, it was possible to elicit directly the parents' views on nonmedical reasons for giving children OTC medications. The general perception was that this social medication of children was widespread. A typical comment was, "We all discuss it, especially with first-time mums, and most of my friends use medication. The ones who say they don't are lying or just plain silly." As justification, one mother explained, "my friend, a headmaster, says a whole lot of children in schools, who for one reason or another are not adapting, are given medication." Another mother, who was giving her 2-year-old promethazine regularly, reported that the friend who had recommended it was a mothercraft nurse and had administered it to infant orphans as part of routine institutional care. Another explained that "I am well aware that there are people out there who really do medicate their children because they cannot stand it any longer . . ." and went on to explain that ". . . there is no knowledge about what you do when you have problems, what you look for to decide it is serious and how you get help." Several mothers reported that they got tired of going to medical practitioners whenever they thought there might be a problem, because they were treated by the doctors like "neurotic mothers" who did not know how to cope. It became important for them to find alternative strategies that appeared to work for the children and for them, and these strategies often involved OTC medications. Another mother observed that many adults take medication as a means of maintain-

ing their routines and their usual roles; in fact, they were encouraged to do this through advertising. These lessons were being passed on to the children.

When asked about the potential side effects of social medication, most mothers did not think there were any of concern. One mother observed, "my neighbor always says about Phenergan [promethazine], 'Oh, that won't hurt them. I used to give it to mine everyday, it calmed them down.'" Another reported that, when she was a child, her mother gave her and her siblings half-tablets of Valium [diazepam] to settle them down, particularly when they were being left with a infant-sitter, and she had not suffered any ill effects from that.

One negative "side effect" that was reported was a delay in seeking medical care because the OTC medication masked the symptoms of the illness. A young girl with "slapped cheek" symptoms was given promethazine when she became fractious and did not see a medical practitioner for several days. Another mother reported a similar series of events for a child with hand-foot-mouth disease.

Research Note

Reflexivity is an important part of conducting and interpreting qualitative research,³⁸ enabling an analysis of the role of the researcher in shaping the research questions and the research process and the effects of these on the data collected.³³ This is particularly pertinent in this research, because one of the perils of discussing social medication among children is the ease with which one can adopt a value-laden attitude toward parenting. As parents with young children, however, the researchers were fully cognizant of the pressures described by the parents in the study, and there was no expression of judgment either way on the part of the researchers. In addition, a large body of research on parenting does support the need for a range of coping strategies for parents.³⁹⁻⁴¹

DISCUSSION

The danger with the OTC medications is not that they are a parental coping strategy. The danger occurs if they are the only coping strategy (or one of a very few coping strategies) and if they mask more profound physiologic problems with the child or problems in the child's psychosocial or physical environment. Some research findings, for instance, indicate that a number of social factors seem to be closely associated with patterns of parental medication of children. One Dutch study found that regions with higher percentages of single mothers and lower percentages of people with religious affiliations experienced higher incidences of medication use, particularly among children⁴² (see also refs. 25 and 43). Although the study was ecological, it does at least point to the possibility of social support as a causal factor in child medication. Pressures in parental work patterns have also been found to be highly predictive of OTC medication use among children, with higher rates of medication use for treatment of minor illnesses and behavioral disturbances among children whose parents are in full-time employment.

In such situations, the tendency is for parents to medicate the sick child to mask the symptoms sufficiently so that the child can continue to attend day care.^{10,44} With increasing numbers of single-parent families and families in which both parents work, leisure time has become an increasingly rare commodity, which requires parents to have children comply with standard routines of behavior.

These factors increase the need for children to conform to some putative norm. It was not always clear, however, whether "the norm" that was being maintained with OTC medication use was the child's norm or the parent's perception of what normal childhood behavior was. For instance, it is generally considered important that children sleep through the night, and it is known that their failure to do this can result in maternal ill health and marital discord.^{45,46} However, this "problem" of failing to sleep through the night has been identified for 20% of children in the 1- to 3-year age group.⁴⁷ A prevalence that high raises questions regarding what is normal. Is the use of sedating OTC medications for a group such as this a means of achieving an unrealistically high standard of child behavior?

Parental concern regarding "fractious" and "irritating" behavior among children <5 years of age seems to have some parallels with Australia's current attention-deficit/hyperactivity disorder epidemic, in which medication for the control of children's behavior is often used as the treatment of choice, rather than as a treatment of last resort.⁴⁸ Children are diagnosed with attention-deficit/hyperactivity disorder on the basis of the identification of behavior that is perceived as deviant or disturbed and makes life difficult for parents or teachers, and the diagnostic criteria may be far too sensitive.⁴⁹ A risk we may run with the pharmacologic control of unruly behavior is that it may interfere with a child's ability to learn, through "rough" play, the normal rules of social interaction and interpersonal boundaries.^{48(p84)} In addition, "there is a risk that kids put on drugs at an early age will learn that the solution to problems is likely to be drugs."^{50(p54)} This is the opposite of the marketing view that medicating children teaches the appropriate use of medication.

CONCLUSIONS

This study brings into sharp focus the largely unexplored area of the use of OTC medications as a form of social medication for the control and maintenance of "good" behavior among children. The study was small and qualitative, and the sampling strategy permits no inferences to be drawn about the broader population. Nevertheless, the study highlights the need for a larger, population-based survey regarding some of the issues identified by the mothers, to determine not only the extent to which these practices occur but also the distribution and consequences of their occurrence.

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