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2007

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Recommended Citation
Cohen, L. L., & MacLaren, J. E. (2007). Breaking down the barriers to pediatric procedural preparation. *Clinical Psychology: Science and Practice, 14*(2), 144-148. DOI: 10.1111/j.1468-2850.2007.00073.x

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# Breaking Down the Barriers to Pediatric Procedural Preparation

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# Breaking Down the Barriers to Pediatric Procedural Preparation

Children experience frequent medical pain; they often do not have the cognitive capacity to understand the reason they suffer; and despite rising attention in research and practice (e.g., O'Byrne, Peterson, & Saldana, 1997), children's pain continues to be understudied and under-treated (Finley, Franck, Grunau, & von Baeyer, 2005; Schechter, Berde, & Yaster, 1993; Walco, Cassidy, & Schechter, 1994). Frequent and intense medical pain as part of routine healthcare begins immediately after birth and does not decrease until the teenage years. Infants suffer heel sticks, circumcisions, needle sticks, and other distressing events and children receive roughly 28 immunization injections in their first six years of life (Center for Disease Control and Prevention, 2006). Further, research is accumulating to indicate that early pain might have long-term negative and possibly permanent repercussions on pain sensitivity, immune functioning, neurophysiology, attitudes, and health care behavior (for a review, see Blount, Piira, & Cohen, 2003).

It is important to note, however, that there are characteristics of children's medical pain that makes it amenable to intervention. Specifically, almost all of these events are planned and the steps of the procedure are scripted. Thus, the parent and patient have the ability to be well prepared to handle the stressor. In fact, the medical situation could even be viewed as a valuable opportunity for the family to learn and practice coping skills, which in turn can result in a heightened sense of mastery and empowerment for future expected and unexpected pain and suffering in life.

Clearly neither research nor practice has reached a place where families excitedly await a medical stressor in order to boost and hone their coping skills arsenal. However, as detailed by Piira, Hayes, and von Bayer, the preparation literature is sufficiently strong to allow

recommendations regarding how to prepare children, when to prepare children, and what individual characteristics to consider when preparing children for upcoming painful procedures. Unfortunately, there are considerable obstacles that are preventing this important advice from being put into practice. To take the next critical step of moving the evidence-based advice into the medical setting, it is vital to identify barriers to this translation and to work at removing or working around them. Below, we consider some of the barriers to implementing pediatric procedural preparation. In addition, we offer potential solutions while recognizing that this is no easy task, for, if it were, the barriers would have long been overcome. That said, solutions are posited in hopes that they might inspire others to think of novel answers to incorporating good pediatric preparation science into our medical settings.

*Pediatric Pain Myths and Attitudes*

There are long-held myths and negative attitudes regarding children's pain. For example, it has been suggested that infants' immature nervous systems do not allow an intense experience of pain, that there are more dangers than benefits when intervening in children's pain, that children will not remember the pain, and that pain builds character. Although these beliefs have been refuted in dozens of studies (for a review, see Young, 2005), they continue to be held and impede adequate preparation of children for medical pain. False beliefs about pain can undermine the adequate preparation of children for medical procedures and can prevent preparation from even occurring.

Dispelling myths and changing negative attitudes is not an easy business (Petty, 1995), but continued studies demonstrating the importance of pediatric pain preparation will help. Further, disseminating the results in various venues will be necessary, including journals, conferences, medical facility distributions (e.g., pamphlets, flyers), and the mass media. In-

services are another mode of transmitting updated information regarding pediatric pain, but information alone does not always suffice. It might be necessary and practical to simply mandate pediatric procedural preparation programs in medical institutions so that they are performed despite myths that might continue to be believed by some. However, if the false beliefs are wide-spread or held by critical health care professionals (e.g., policy makers), it might be necessary to address the myths and attitudes before programmatic changes can be made in a medical institution.

*Costs*

Another obstacle to preparation of children and families for procedures occurs at an institutional level - cost containment. In the current harsh economic climate of hospitals and other health care centers, there is little room for services that are not “medically necessary” or “money-earning”. There are valid arguments that preparation programs are medically necessary given the potential for negative outcomes of pediatric pain; and there are data to suggest that money might be saved via adequate preparation, which shortens recovery, decreases the number of staff needed for difficult patients, and lessens problematic behavior that might result in medical interventions (Kain et al., in press). However, either the data are not sufficiently clear, articulated, or accepted, as most settings are not currently investing in preparation programs (Finley et al., 2005).

Potential solutions for this barrier are in two forms. The first involves further demonstrating the cost efficacy of preparation programs, as has only been done in a few pediatric pain studies (e.g., Cohen, Blount, & Panopoulos, 1997). It is essential that we understand the costs associated with delivering preparation and what outcomes are returned on the investment. For example, if children are better prepared and have coping skills to use during the procedure,

they may be more cooperative and thus, reduce the length of the procedure. The second way of addressing this barrier is through innovative preparation methods. The rise of technology provides a new avenue to provide preparation in a cost-effective manner. Modalities such as CD-ROM or internet web pages would allow families to access preparations without the demand on staff time and resources. At the end of the day, it will be necessary to show that the cost savings of the preparation program outweighs the cost of the program.

*Time*

Clearly linked to cost, is the valuable resource of time. When pitching a pedantic pain relief project to a health care facility, almost without fail the first question posed to researchers regards how much time will be involved. In busy medical facilities that measure success by patient turnover, time is critical and measured in seconds.

To save time required in the medical setting, some researchers are evaluating preparation that are done in the families home via sending information home or providing the preparation on websites (e.g., Chambers, Reid, McGrath, Finley, & Ellerton, 1997). Researchers should at the very least report the approximate time required by the preparation program in order to help clinicians decide if they will or will not adopt the program into their setting. Lastly, the critical step will be to show that the benefit to the patient, family, and setting outweighs the time required.

*Cross-Discipline Collaboration*

Since the paradigm-shifting impact of Melzack and Wall's 1965 Gate Control Theory – positing that pain perception is modulated by *both* internal and external factors – there has been recognition of the importance of multidisciplinary study of pain. Unfortunately, although we recognize the importance of "multidisciplinary" research, most research continues to be in only

one discipline. As examples, physicians might examine the diagnostic value of a patient's pain complaints, psychologists might study the interplay of emotions and pain, sociologists and anthropologists might study cultural relevance of suffering, neurophysiologists could focus on anatomical structures associated with pain, and neuroscientists might investigate the role of the brain and pain. Each professional has important niches in which to examine pain and help those who suffer, but there is often little communication across the disciplines.

To truly advance the science and practice of pain management and procedural preparation, it will be critical that additional work is done collaboratively. As a first step, there is a need to disseminate studies beyond the discipline from which they originate. As an example, there are a number of studies in psychology journals that support behavioral methods of procedural preparation (e.g., coping skills training), but these journals are rarely read by practicing physicians or nurses. Conversely, medical journals are replete with studies of pharmaceutical agents of pain control (e.g., morphine, lidocaine) that are not widely read by psychologists. Publication of cross-discipline studies (i.e., behavioral interventions published in medical journals) is a first step in expanding dissemination, but encouraging cross disciplinary research is even more effective. For example, there are only a handful of investigations comparing behavioral and medical interventions or evaluating the benefits of combining them for optimal pediatric procedural preparation.

*Training*

Part of this systemic problem of poor collaboration is rooted in the training systems, which students working with a primary research mentor or set of professors and focus on a specialized area of study. As the student develops a program of study, the student often extends the work of the advisor, but typically the work and dissemination avenues remain within the

same discipline and concentration. True advances will come in science and practice when disciplines shirk insular training and investigations and challenge, cooperate, and communicate with one another to create new perspectives regarding preparation for pediatric pain.

A new training paradigm that is not region-, site-, discipline-, or disease-specific might help pave the way from science to practice. The new system will integrate diverse fields of study and bring together professionals from a spectrum of areas. In addition, the relative paucity of work in pediatric pain might be infused with creative researchers who are able to devise advanced solutions and put preparation programs into practice. Currently, a training consortium of this sort is in place in Canada and appears to be resulting in a burgeoning of new student interest and cross-disciplinary work. (For information regarding the Pain in Child Health training, see http://paininchildhealth.dal.ca.)

*Moving Target*

Research is nothing if not innovative. Despite the oft-called request for replication of results, it is far more common to see new and different studies than true replication. The pediatric preparation literature is no different, with studies evaluating puppets, pamphlets, videos, and the internet. As one effective preparation program is published, another one is being devised and evaluated. The number of journals and studies is overwhelming and can be paralyzing even to the best intentioned clinician. Clearly it is not an easy task to decide which preparation program is best for a given child facing a given procedure.

One solution is to continue to publish meta-analyses, reviews, and summary reports. The review provided by Piira et al. is a good example of the type of paper that can provide a synthesis of a large literature and distill the information into a palatable size. However, the onus should not be only on the researcher to distill the information, but the medical institutions themselves

should be more flexible with policy making and allow changes to be made fluidly as the literature and recommendations evolve.

*Knowledge Transfer*

For children to receive high quality preparation for medical procedures, it is imperative that science-based programs are put into medical practice. Although the science-practice gap is a rampant problem in a number of fields and areas of studies, it is particularly disconcerting in the area of children's medical pain. The flow of information among different stakeholders is poor, and no one party should not bear the brunt of the blame; but it is critical to increase the ties between practice, science, and public knowledge to provide optimal understanding, management, and preparation of children for medical pain.

As shown by Piira et al., the body of work in pediatric preparation is strong and clear recommendations can be made by culling the literature. However, there are few if any studies focusing on evaluating the transfer of these evidence-based suggestions into practice. Study of patient and staff satisfaction, cost, time requirements, and other practice issues is required. In addition, long-term work identifying and resolving any barriers preventing the use of the preparation programs is in order. Further, work in medical institution policy making is in order, as often establishments dictate exactly how medical practice should be conducted. Beyond the institution, public awareness and advocacy is in order so that individual families are able to demand adequate preparation for children's medical events and governments might legislate such practice.

*Summary*

In sum, there are a number of barriers that are preventing strong evidence-based pediatric preparation programs from being implemented in medical settings. These barriers are at multiple

levels ranging from individual (e.g., attitudes), to institutional (e.g., cost, training) and societal (e.g., pain-related myths). Despite the number and complexity of the barriers, there are certainly a potential for solutions. The first step in overcoming these barriers is building a research base to support the need for pediatric medical procedure preparation. The second step is identifying clear suggestions about how to address this need. As detailed in the article by Piira et al, these first two steps are well underway. It is now time to take the next step and channel these data into standard health care practice.

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