A Necessary Reemphasis on Integrating Explicative Research with the Pragmatics of Pediatric Psychology

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Pediatric psychology is an amalgamation of applied practice and basic research concerned with medical and psychological problems affecting children and families. Both the applied and basic aspects of pediatric psychology are necessary. However, some distortion of emphasis may be implied by the results of a recent analysis of articles in the Journal of Pediatric Psychology (JPP). Roberts (1992) found that three quarters of the research articles focused on examinations of relationships among pediatric and psychological variables, as opposed to studies more directly targeted to applied or clinical concerns such as assessment, prevention, and intervention. The “explicative” research articles that predominate in JPP attempt to clarify how various variables are associated to produce a more comprehensive view of the factors related to medical or psychological conditions. Studies with an explicative purpose, for example, have considered the relationship of coping responses of children with pediatric conditions (e.g., sickle cell disease, cancer and leukemia, diabetes, spina bifida) and their families’ adjustment to having a child who has a chronic illness. Explicative or relationship research programs have enhanced knowledge and understanding. Nonetheless, the current editor of JPP found this domination of the research pages troubling and called for more submissions of intervention research (La Greca & Varni, 1993).

Although much of the preponderant explicative research is theory driven...

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and utilizes sophisticated statistical analyses that are more readily available in recent years, the articles often appear to be bereft of immediate utility in clinical interventions. Furthermore, authors seem to make efforts only infrequently at interpreting their findings for clinicians. In this commentary, we examine the degree to which the research published in JPP includes information on clinical utility. We describe an historical analysis of pediatric psychology indicating that early researchers made the integration of explicative research and pragmatic applications. A recently developed program of research is described to illustrate how explicative research can be integrated with clinical applications. Finally, two topic areas are presented in which explicative research should have been conducted and integrated before interventions were made. We conclude that the field should strive for better integration.

To put our perceptions to the empirical test, we conducted a review of JPP articles to determine whether explicative articles discussed clinical implications and, if so, to what degree. Much of this analysis is similar to categorizations by Roberts (1993) and Elkins and Roberts (1988). In the present examination, two graduate students rated the 243 articles published in JPP for the years 1990 (49 articles), 1991 (49), 1992 (43), 1993 (50), and 1994 (52). Of specific interest were articles categorized as Basic and Applied Research (total articles = 195 or 80.3% of total) as opposed to Literature Reviews, Professional Practice, and Other articles (48 articles or 19.7%). The Research articles were then separated into categories of Research Purposes represented by Clinical Assessment (19 articles, 9.7% of Research total), Intervention/Therapy (21, 10.8%), Prevention (3, 1.5%), and Explicative (152, 78%). The 152 Explicative articles were then judged on the amount or degree of discussion of clinical implications (0 = no statement of clinical implications in Discussion section to 5 = several or many statements of strong and clear discussion of clinical implications; see Appendix).

The categorization used for this analysis was based on consensus discussion of the raters. The ratings of the degree of discussion about clinical implications over all years were calculated as $M = 1.00, SD = 1.10$. This mean rating indicates that the average explicative research article made only minimal statements at interpretation for clinical implications. Our simple evaluation empirically confirms our previous perception that, across time, the explicative articles constituting a majority of the articles published in JPP do not provide much discussion of what the findings might mean for practicing clinicians. That is, these kinds of publications do not make an applied interpretation of the results.

Of course, the exercise of rating articles does not indicate what an individual reader might learn from a particular article in terms of making clinical interpretations. For example, a new framework for case conceptualization might be extracted by the reader even if not explicitly articulated by the authors. Thus, there may be indirect as well as direct clinical implications drawn from explicative articles that are not captured by our methodology.
In our view, however, too many articles fail to provide even a cursory discussion of clinical implications. We do not hold that research should be judged solely on its clinical applicability. Nonetheless, there is a current bifurcation of explicative research from clinical applications. Indeed, there should be a measure of applicability and utility for this work in terms of better understanding of pediatric psychology situations so that, ultimately, clinical prevention and intervention can be done more effectively, more humanely, less costly, or more efficiently.

HISTORICAL INTEGRATION OF EXPLICATIVE AND INTERVENTION PURPOSES

Despite the recent predominance of explicative research, it has not always been so. Pediatric psychology was born out of a pragmatic tradition that attended to the clinical problems that presented in pediatric settings. Much of practice today remains practically oriented (i.e., do what works). Yet, even with the orientation to pragmatic concerns, explicative research directed at gaining a better understanding of pediatric and psychological phenomena has been evident from the birth of the field. This understanding was seen as necessary to make better interventions. Indeed, early in the field's development there was a stronger integration of research and clinical intervention activities. One of the founders of pediatric psychology, Logan Wright, published much of the early research on clinical interventions. He also conducted some basic research of an explicative nature. For example, he developed, implemented, and evaluated behavioral treatment programs for childhood encopresis, children unable to breathe except through tracheotomy cannula, children's refusal to take oral medication, and habitual vomiting. At the same time, Wright conducted basic research and published initial reports on intellectual and psychological sequellae of pediatric conditions. These studies of sequellae are explicative because they examined the relationship of certain variables—mostly psychological outcomes following medical/physical problems (e.g., children's burns, poisoning, hemophilus influenzae meningitis). (For specific references to these Wright articles, see Roberts, 1993.) Similarly, in an explicative approach, Lee Salk, another pioneer in pediatric psychology, investigated the psychological impact of hemophilia on pediatric patients and their families (Salk, Hilgartner, & Granich, 1972). Not satisfied to find relationships of variables, these researchers interpreted the findings for clinical applications. For example, Wright used his results to point out where

The irony is not lost on the authors that, as a former editor of JPP during 3 of the 5 years in this analysis, one of the authors (M. C. R.) shares the responsibility for “allowing” this to happen. It is difficult to discern trends while in the midst of managing as many submissions as JPP receives. Additionally, the editor of a journal is, to large degree, at the mercy of what is submitted.
and how to make more effective interventions. Similarly, Salk et al. (1972) made nine recommendations for assisting patients and their parents to achieve optimal adjustment to hemophilia.

Early pediatric psychology practitioners such as Wright and Salk may not have envisioned what we see now as an estrangement of explicative research from clinical interventions. Instead, their work demonstrates that research and clinical interventions can be readily integrated. Research should inform practice. Clinical work should guide research questions.

In the following section, we outline an example of an integration of explicative and clinically relevant research (pain and distress) and point to other areas where more informed intervention might have been built upon explicative research if it had been conducted initially (child sexual abuse prevention and HIV/AIDS prevention).

AN EXAMPLE OF INTEGRATION OF EXPLICATIVE AND INTERVENTION RESEARCH

The recent research on pain and distress serves as a prime example of basic explicative research leading to intervention approaches that are more cost-effective, more humane, or more efficient. Several researchers have contributed to progress on this topic. As one research line, Blount and his colleagues have investigated the characteristic interactions of pediatric oncology patients, parents, and medical personnel during painful bone marrow aspirations (BMAs). Blount et al. (1989) sequentially analyzed child coping behaviors and adult vocalizations. The results revealed that several distress behaviors were preceded by adults' reassuring comments and other emotion-laden verbalizations, whereas child coping behavior was preceded by adults' distracting talk or verbal prompts to demonstrate certain coping strategies. In a follow-up analysis, Blount, Sturges, and Powers (1990) examined the patterns of parent–child interaction according to the phase of the BMA procedure. The results suggested that children's distress increased as the procedure progressed, especially as the procedural pain increased. In addition, children demonstrated different categories of coping during the different phases. Blount, Landolf-Fritschie, Powers, and Sturges (1991) also analyzed the interactions of adults and children by comparing the behaviors of the adults interacting with children displaying high and low levels of coping behavior in BMA and lumbar punctures (LPs). Their results revealed the circumstances under which children were more likely to respond with either distress or coping.

This series of explicative studies provides basic information on where and how to plan interventions that can be further evaluated for efficacy in helping children cope with pain and distress. For example, Blount et al. (1991) offered
several implications for clinical interventions; they specifically described how children could be trained in certain coping behaviors for specific phases of painful procedures and parents could be trained to prompt these behaviors at particular points. Subsequently, an intervention based on these explicative studies (Blount et al., 1992) taught parents and children how to use distraction prior to an immunization injection (e.g., blow on a party blower which also employs deep breathing). Observations indicated that children so trained later displayed less distress than children not trained.

Additional interventions have been made based on explicative research for other more painful and repeated medical procedures. Powers, Blount, Bachanas, Cotter, and Swan (1993), for instance, taught parents to coach their preschool children in coping behaviors prior to undergoing painful intramuscular and intravenous injections during treatment for leukemia. This study demonstrated that parents could coach the behaviors so that the children utilized specific coping behaviors and exhibited less behavioral distress. In another intervention study, Blount and his colleagues applied distraction techniques at the times indicated from their explicative studies. Blount, Powers, Cotter, Swan, and Free (1994) observed parents and children who were undergoing BMA and LP procedures after training them in coping behaviors. The children generally used the coping techniques of distraction and breathing techniques (again using party blowers) and exhibited less distress. This line of research demonstrates the value of explicative investigations in identifying potentially useful clinical interventions and setting up the clinical researcher to implement and evaluate them. Other examples of where explicative research leads directly to clinical implications are available, but these are less frequent. Our article review found that many explicative studies merely mentioned the clinician and applications but made no explicit statements of how the research may inform assessment or intervention practices.

**EXAMPLES OF WHERE INTEGRATION IS NEEDED**

Some current interventions might have benefited from greater preliminary work explicating significant variables and relationships before attempting to make actual interventions. For example, sexual abuse prevention programming, in response to the demand to do something immediately to prevent molestation, often developed without an empirical base or evaluation (Roberts, Alexander, & Fanurik, 1990; Wurtele & Miller-Perrin, 1992). Regarding child abuse prevention programming more generally, Olsen and Widom (1993) state that

Ideally, prevention programs should be guided by theory and based on knowledge about the etiology of child abuse and neglect. However, given the lack of conclusive knowledge of cause and effect relationships, the first generation of child abuse prevention programs were based on untested assumptions about the etiological factors for child maltreatment.

(p. 223)
Thus, in the case of child physical and sexual abuse, preventive intervention preceded the necessary explicative investigations.

In a similar scenario, curricula and educational programs were implemented for preventing HIV/AIDS before adequate explicative studies had been conducted on children's understanding of diseases and preventive acts, particularly for HIV/AIDS (Winett & Anderson, 1994). More recent studies are now closing the gaps of knowledge through explicative studies, and should lead to more effective interventions (see Siegel, 1993).

In the cases of both sexual abuse and AIDS prevention programs, more effective interventions targeted at specific groups might have been devised earlier had explicative studies been conducted. These could have identified different group characteristics and relationships with other potentially influencing variables in order to better inform the development of intervention methods. Nonetheless, the press for immediate intervention often seems to preclude such studies. The result is too often that inadequate or counterproductive effects are obtained with the interventions.

In emphasizing the need for basic research prior to intervention in these areas, we intend to convey our strong conviction that explicative research can be quite valuable and necessary to the scientific foundations of the field. Our point is that much more integration must take place, not that clinical application is more valuable than such explicative understanding.

CONCLUSIONS

The pediatric psychology literature contains some examples of explicative research that lends itself to the formulation of interventions. However, our examination of the multitude of explicative research reports in this field failed to turn up substantive discussion of clinical applications. This leads to the unfortunate conclusion that explicative (and correspondingly much that is theoretical) research does not have readily apparent applications. Indeed, some researchers seem reluctant to step beyond their models and results to discuss clinical implications. Unfortunately, readers may ignore the research as simply irrelevant to clinical practice or fail to make important connections to their own work because the connections are not discussed by the researcher. Research in the abstract usually remains abstract. As noted, pediatric psychology has been from its inception an applied, pragmatic field of both research and practice. Those who subscribe to the pediatric psychology mantle should try to integrate explicative and clinical aspects for maximum contributions.

This call for greater integration is not new to clinical and clinical child psychology. For example, Ross (1981) called for the greater relationship between scientific rigor and clinical relevance in which "results provide answers to clini-
As one response to this perceived need, *Children's Health Care*, a related journal in the field, now requires a final section in its articles with a heading of "Implications for Practice" in which the individual study’s findings are applied to clinical practice. JPP might consider adding such a section or, as an initial effort, alert authors that reviewers will consider the clinical relevance of their research. Authors could then highlight clinical implications or indicate why practical applications may be premature or irrelevant at the time. Additional solutions may be envisioned wherein the contributions of "front line" clinicians are utilized by academic researchers to ensure greater clinical relevance. Certainly, particular types of research methodology for evaluating interventions might be enhanced in training and in collegial collaborations of academics and clinicians. An integration of its research and clinical practice components should be a paramount goal for the field of pediatric psychology. The continuance of its heritage and the vitality of the field depend on it. Managed care competition and debates about health care reform demand greater documentation of the efficacy of psychological interventions. The field has made some progress (Roberts, 1992); a reemphasis on integration is necessary for the continued vitality of the field.

Clinical practitioners should be able to utilize empirical material in their applications and to frame further questions requiring follow-up investigation by researchers. The field looks to the *Journal of Pediatric Psychology* as its major resource. Those who publish here (and elsewhere) should strive to renew the traditions of integrating explication and pragmatics.

**APPENDIX**

Degree of Discussion of Clinical Implications (Rated on 5-Point Scale)

0 = No statement at all of clinical implications
1 = Minimal statement (only 1 or 2 sentences; reader must make major effort at interpretation; general statements like "these results could be useful for the practicing psychologist . . .", but no specific statement of application)
2 = Above minimal (a few statements made about clinical utility or application, or a few statements are distributed throughout Discussion, or author very cautious in extending findings to clinical interventions; e.g., "premature to make applications at this time," "results are merely suggestive")
3 = Some clear and distinguishable statements of clinical applicability (at least approximately one or more cohesive paragraph, author does not make many caveats or many cautions about overextending the results)
4 = Clear statements (maybe has a section heading of clinical implications or equivalent, at least two cohesive paragraphs suggesting how results might be utilized by practitioners or in interventions)
5 = Several to many statements (strong and clear discussion of clinical implications; discussion of how clinicians might use information takes up close to 50% or more of discussion; makes direct interpretations for reader of how findings might be useful in determining clinical interventions)

REFERENCES


