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The Development of Children's Understanding of Death: Cognitive and Psychodynamic Considerations

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Development is the cornerstone of childhood. A developmental approach informs everything we do as adult caregivers to children, from prescribing medication [1] to psychotherapy. Opioid analgesic doses for children are based on unique pediatric physiology and pharmacokinetics. Psychotherapy with a 5-year-old child is play-based rather than narrative-based. The pediatric house officer who meets a 5-year-old with pallor, bruises, and fatigue in the emergency room; the oncologist who performs the first bone marrow aspiration; the nurse who administers chemotherapy; and the psychiatrist who assesses delirium must all be equipped with a framework of developmental understanding to assure competent care is given. A pediatric patient's behavior, degree of physical and psychological function, and comfort are embedded in the childs cognitive and psychosocial development. When clinicians provide developmentally informed care, it facilitates patient histories, physical examinations, adherence to life sustaining treatment, and prevention of post-traumatic stress and other psychological sequelae associated with serious pediatric illness.

Developmental theory encompasses a rich tradition of schools of cognitive and developmental (eg, Jean Piaget, Jerome Kagan) and psychoanalytic (eg, Sigmund and Anna Freud, Erik Erikson, John Bowlby) thought. The 5-year-old "preoperational" (Piaget), "Oedipal" (Freud) boy who is hospitalized for inguinal hernia repair benefits both from a concrete description of what to expect after he awakens from anesthesia (eg, the personnel and

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layout of the recovery room, what the wound will look like) and by reassurance that his genitals are outside of the surgical field. Consistent with prior reviews [2] regarding children's understanding of death, the authors draw on these mutually complementary traditions and briefly review relevant empiric and descriptive literature in an effort to establish a developmental lens through which the material in the following articles will be seen and integrated.

Development of a concept of death

It was long believed that children were incapable of comprehending death and that even if they were, discussing it with them would cause them great harm. As a result, it was common for both clinicians and parents to avoid discussions of death with children, including children who themselves were seriously ill. It has come to be understood, however, that children do indeed have important understandings of death, and their conceptualization of death changes as they progress developmentally.

The understanding of illness and death among children is intimately bound to cognitive and psychological development. Pioneering research in this regard occurred in the 1930s and 1940s [3,4] and has continued [2,5]. Much of the research through the years has focused on a child's understanding of the biological aspects of death of the physical body, including the concepts of universality, irreversibility, nonfunctionality, and causality [5]. Speece and Brent [6] proposed additional focus on the concept of noncorporeal continuation. These components of the death concept are defined in Table 1.

Jean Piaget's [7] theory of cognitive development has provided a language to describe the qualitative differences in children's understanding of illness and death at various developmental levels. In a review of the literature, Burbach and Peterson [8] concluded that understanding of illness is positively correlated with chronological age and cognitive maturity, consistent with Piagetian theory. Piaget [7] explained that as a result of biological maturation and the accumulation of experience, children progress through four sequential stages of cognitive development: (1) the sensorimotor stage (infancy, birth through about age 2), (2) the preoperational stage (early

Table 1
Components of the death concept

Universality	All living things must eventually die
Irreversibility	Once the physical body dies, it cannot be made alive again
Nonfunctionality	All functions of the living physical body cease at the time of death
Causality	The realistic, abstract understanding of the internal (eg, illness, old age) and external (eg, accident) factors that cause death
Noncorporeal continuation	Includes concepts such as resurrection, reincarnation, etc.

childhood, approximately ages 2 through 7), (3) the concrete operational stage (middle to late childhood, approximately ages 7 through 11), and (4) the formal operational stage (adolescence through adulthood). Extensive research has demonstrated that the nature and sequence of these stages is highly predictable. However, it is now generally understood that some children may progress through these stages more rapidly than others. In particular, children who have a life-threatening illness may be advanced in their understanding of death relative to their healthy peers of the same age [9]. This knowledge should help clinicians and parents to avoid making rigid assumptions based strictly on chronological age. It is important, rather, to understand a child's specific level of comprehension, cognitive and emotional, to appreciate what misconceptions and concerns may exist.

Birth through Age 2–3

The sensorimotor child experiences the world almost exclusively through the senses and motor activity. Children at this developmental stage seem to have no concept of death as such; that is, they cannot distinguish cognitively between death and separation [10,11]. In a specific reference to early infancy, Piaget [10] stated that the sensorimotor "infant lacks the symbolic function, that is, he does not have representations by which he can evoke persons or objects in their absence."

Ages 2–3 through 5–7

Nagy [12] used drawings, writings, and interviews to study the attitudes toward death of 378 children age 3 to 10-years-old in post-war Budapest. Nagy's work and application of Piagetian developmental theory suggest that the illogical thought characteristic of young, preoperational children results in many misconceptions about death.

Young children are likely to believe that death is not universal. They might believe that they themselves, family members, and friends may be spared. Preschoolers are just beginning to grasp the concept of cause and effect and are limited by their senses—what they see, hear, feel, and smell—and as such, they might wrongly infer causality. Preschoolers attribute life and consciousness to the dead and come to concrete and sometimes frightening conclusions. For example, the preschooler might fear that the deceased will not be able to breathe while underground and would miss loved ones. Children at this stage might also imagine the deceased mourning. As these examples illustrate, preschoolers generally consider death as continued life but under changed circumstances [4,11]. This can be attributed in part to the egocentric thought characteristic of preoperational children, who are unable to imagine anything other than what they themselves experience [7].

Furthermore, because remnants of separation anxiety often persist in preschoolers and even young school-aged children, they may describe death as "to go away" or "to go asleep." A further example of the preschooler or

young school-aged child's concretization of death can be seen in Nagy's [4] description of a child who suggests that one cannot sing at a funeral because it would not allow the dead person to sleep peacefully. This illustrates why bereaved young children are often anxious to go to sleep or have a parent go on a trip. It is important that parents and caregivers do not equate death with sleep or travel, which would reinforce the child's cognitive distortion.

In psychodynamic terms, preschool children face the developmental task of mastering deeply felt aggressive and sexual feelings toward their parents, and by extension, caregivers. One can integrate Piagetian notions of concreteness and egocentricity with dynamic views of aggression and a sense of right and wrong to account for the common observation that young children who have a serious or chronic disease often wrongly infer that the illness was caused by misbehavior [13]. Preschoolers are unlikely to give verbal expression to such feelings (although they may through play) and the painful guilt with which they are associated. Yet, by their very concreteness and the omnipotence with which parents and caregivers are viewed, the important adults in a child's life can greatly reduce suffering by reassuring them that illness does not reflect retribution for wrongdoing. More biologic, simple, reality-based explanations can be substituted and may be reassuring.

Young children are unlikely to understand the permanence of death. They may even think that people can go back and forth between life and death [4]. The death of a parent or sibling can prove especially troubling, in part because the preoperational child thinks that dead people can return if they want to or if the child wishes it so. Hence, when a deceased parent does not return, the young child might feel abandoned. The parent and caregiver must provide the bereaved child with a reality-based explanation for a loss and yet simultaneously respect adaptive defenses. Adults are frequently troubled and confused that bereaved preschoolers often behave as if nothing had changed, don't seem sad, and go on with their usual activities. This is often true, though it says little about the long-term impact on psychological and personality development or the potential need for psychological intervention sooner or later [2].

Ages 5–7 through 10–11

As a child moves from the preoperational stage into concrete operational thought, the concept of death gradually continues to mature. Children who are early in the concrete operational stage distance themselves from and objectify death; they may think that only those people taken by the "death man" will die (animism) and that death might be avoided if one is clever or lucky [4]. In other words, death is personified and has a distinct personality. Death might be understood as a "boogie man" who takes bad people away [4]. Hence, some children will attempt to exhibit exemplary behavior after they have been exposed to the death of a loved one, to assure that they are spared [14]. Although the belief in illness and death as punishment

may still be present, children at the upper end of this age range begin to understand the biological meanings of death (ie, the cessation of all bodily functions, both voluntary and involuntary). They are beginning to appreciate that death is caused by serious illness or injury and not by any behavior of their own. Concrete operational children may have some early capacity for logic in their thoughts about death. However, they are limited because they are able to reason only about present situations with which they have personal contact and are not yet able to think more abstractly or theoretically about the future.

Ages 10–11 through adolescence

As children advance from concrete operational thought into formal operational thought and thinking gradually becomes more abstract, concepts of death further evolve. However, the understanding of death even among older adolescents may still be more ambiguous and less mature than that of adults. Older children and adolescents understand the universality of death. Nevertheless, as is often illustrated by the risk-taking behavior of adolescents, they can at times be characterized by a sense of personal omnipotence which convinces them that they are invincible, as if "immune" to death [14]. The understanding of causality of death has become more realistic and abstract. Some formal operational thinkers have highly structured and complex images of death that arise from their capacity for hypothetical deductive reasoning and abstract thought. Adolescents' attitudes and beliefs about death gradually begin to take on the complex and varied meanings characteristic of adults' views about death, and they are further elaborated as a function of spiritual and ethical beliefs about notions such as an afterlife and heaven and hell. Showalter [15] captures an adolescent's struggle with his own terminal illness with particular poignancy in his discussion of the loss of physical functioning and the paradox of the need for greater care by and dependence on parents and other adult caregivers at just the point in development at which the emergence of autonomy is the age-expected norm [13], "a life snuffed out before it has unfolded" [16]. Consider the following vignette:

> M was 11 years old when chest wall pain led to a diagnosis of Ewing's sarcoma of a rib. From the first hospitalization on, M fought mightily to maintain her autonomy during blood draws, bone marrow aspirates, placement of intravenous catheters, and other procedures. First viewed by staff and even her parents as stubborn and complaining, by the end of the second week of her initial hospitalization, M had educated her caregivers. She was not only stoic during painful procedures but was also a model of cooperation whenever a procedure was preceded by clear explanation of what was to happen and why it was needed. M showed a facility for using her emerging pre-adolescent capacity for formal operational, abstract reasoning to cope with pain, nausea, and discomfort, by applying a keen knowledge of the

favorable odds of remission and return to family, friends, and school in the anticipated future. M underwent tumor resection, radiation, and chemotherapy, achieved remission, and was discharged 3 weeks after admission. M led a rich, cancer-free young adolescent life at home, with friends, and excelled in school for 3 years. She then relapsed and had pulmonary metastases which were unresponsive to aggressive treatment. Because of rapidly progressive dyspnea, intubation was considered before it was clear that the tumor was unresponsive. Fourteen-year-old M guessed that assisted ventilation had been discussed and asked to speak with her oncologist. "Don't put that tube in my throat. I'm dying. It would hurt me, and it wouldn't do any good. I just want to be comfortable and be with mom and dad." Opiates and methylphenidate were given to relieve air hunger and maintain alertness. M died peacefully the next day in her parents' arms; they thanked the pediatric caregivers.

Summary

The cognitive and emotional development of children and adolescents follows a biologically driven, environmentally mediated, and predictable but not entirely invariate sequence. Piagetian, psychoanalytic, and other schools of thought inform an understanding of child development; some of the theories are empirically validated, some not. This framework enables clinicians and parents to approach their children, ill or well, from a developmentally informed perspective. At the same time, as Spinetta's [17] case-controlled study of 6 to 10-year-old children hospitalized either with cancer or non-life limiting illness demonstrated, serious illness itself accelerates cognitive development in often unpredicted ways: "To equate awareness of death with the ability to conceptualize it and express the concept in an adult manner denies the possibility of an awareness of death at a less cognitive level. If it is true that the perception of death can be engraved at some level that precedes a child's ability to talk about it, then a child might well understand that he is going to die long before he can say so." In the following articles, the editors invite a critical reading of the empiric and descriptive literature of pediatric palliative medicine that allows an informed and individualized approach to these extraordinary children and their families.

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